



FCC SAR Test Report

Report No. : FA411904-01

Table with columns for LTE Band, Power, Modulation, Frequency, etc., containing SAR test results for various bands and frequencies.



Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Headset	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
Wifi&Bluetooth																			
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 6+8(8)		Standalone	6	2437	1	17.23	19.00	1.503	98.62	1.014	-0.08	0.415	0.633	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6+8(8)		Standalone	6	2437	1	17.23	19.00	1.503	98.62	1.014	-0.18	0.791	1.206	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6+8(8)		Standalone	1	2412	1	17.18	19.00	1.521	98.62	1.014	0.1	0.638	0.984	
58	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6+8(8)		Standalone	11	2462	1	17.21	19.00	1.510	98.62	1.014	-0.05	0.854	1.308	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6+8(8)		Standalone	11	2462	2	17.21	19.00	1.510	98.62	1.014	0.01	0.812	1.243	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6+8(8)	Headset	Standalone	11	2462	1	17.21	19.00	1.510	98.62	1.014	0.01	0.781	1.196	
	WLAN2.4GHz	802.11n-HT40 MCS0	Back	5mm	Ant 6+8(8)		Standalone	6	2437	1	17.21	19.00	1.510	94.91	1.054	0.06	0.721	1.148	
	WLAN2.4GHz	802.11n-HT40 MCS0	Back	5mm	Ant 6+8(5)		Standalone	9	2452	1	15.90	17.50	1.445	94.91	1.054	0.01	0.511	0.779	
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 6+8(8)		Simultaneous	6	2437	1	14.22	16.00	1.507	98.62	1.014	0.03	0.215	0.328	
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6+8(8)		Simultaneous	11	2462	1	14.21	16.00	1.510	98.62	1.014	-0.01	0.429	0.657	
	WLAN2.4GHz	802.11b 1Mbps	Front	13mm	Ant 6+8(8)		Full Power	6	2437	1	19.18	21.00	1.521	98.62	1.014	0.01	0.255	0.393	
	WLAN2.4GHz	802.11b 1Mbps	Back	16mm	Ant 6+8(8)		Full Power	11	2462	1	18.79	20.50	1.483	98.62	1.014	0.06	0.326	0.490	
	Bluetooth	1Mbps	Front	5mm	Ant 6		Standalone	39	2441	1	11.93	13.50	1.435	76.72	1.086	0.08	0.075	0.117	
59	Bluetooth	1Mbps	Back	5mm	Ant 6		Standalone	39	2441	1	11.93	13.50	1.435	76.72	1.086	-0.07	0.109	0.170	
	WLAN5.3GHz	802.11n-HT40 MCS0	Front	5mm	Ant 5+8(5)		Standalone	54	5270	1	15.61	17.00	1.377	96.32	1.038	-0.03	0.318	0.455	
60	WLAN5.3GHz	802.11n-HT40 MCS0	Back	5mm	Ant 5+8(5)		Standalone	54	5270	1	15.61	17.00	1.377	96.32	1.038	0.01	0.782	1.118	
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	5mm	Ant 5+8(5)		Standalone	54	5270	2	15.61	17.00	1.377	96.32	1.038	0.09	0.721	1.031	
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	5mm	Ant 5+8(5)		Standalone	62	5310	1	14.62	16.50	1.542	96.32	1.038	0.11	0.564	0.903	
	WLAN5.3GHz	802.11n-HT40 MCS0	Front	5mm	Ant 5+8(8)		Simultaneous	54	5270	1	13.18	15.00	1.521	96.32	1.038	0.01	0.199	0.314	
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	5mm	Ant 5+8(8)		Simultaneous	54	5270	1	13.18	15.00	1.521	96.32	1.038	0.06	0.435	0.687	
	WLAN5.3GHz	802.11n-HT20 MCS0	Front	13mm	Ant 5+8(8)		Full Power	60	5300	1	18.40	20.00	1.446	97.79	1.023	-0.02	0.275	0.407	
	WLAN5.3GHz	802.11n-HT20 MCS0	Back	16mm	Ant 5+8(8)		Full Power	60	5300	1	18.40	20.00	1.446	97.79	1.023	0.01	0.315	0.466	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5+8(5)		Standalone	122	5610	1	12.76	14.50	1.493	93.06	1.075	0.18	0.285	0.457	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5+8(5)		Standalone	138	5690	1	12.71	14.50	1.510	93.06	1.075	0.14	0.276	0.448	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)		Standalone	122	5610	1	12.76	14.50	1.493	93.06	1.075	-0.17	0.517	0.830	
61	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)		Standalone	138	5690	1	12.71	14.50	1.510	93.06	1.075	-0.08	0.708	1.149	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5+8(5)		Simultaneous	122	5610	1	10.62	12.00	1.374	93.06	1.075	0.03	0.201	0.297	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)		Simultaneous	138	5690	1	10.59	12.00	1.384	93.06	1.075	-0.15	0.455	0.677	
	WLAN5.5GHz	802.11n-HT20 MCS0	Front	13mm	Ant 5+8(8)		Full Power	100	5500	1	18.38	20.00	1.453	97.79	1.023	-0.11	0.325	0.483	
	WLAN5.5GHz	802.11n-HT20 MCS0	Back	16mm	Ant 5+8(8)		Full Power	100	5500	1	18.38	20.00	1.453	97.79	1.023	0.02	0.379	0.563	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5+8(5)		Standalone	155	5775	1	14.95	16.50	1.429	93.06	1.075	-0.05	0.186	0.286	
62	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)		Standalone	155	5775	1	14.95	16.50	1.429	93.06	1.075	0.05	0.762	1.170	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)		Standalone	155	5775	2	14.95	16.50	1.429	93.06	1.075	0.07	0.625	0.960	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5+8(5)		Simultaneous	155	5775	1	12.49	14.00	1.416	93.06	1.075	-0.18	0.112	0.170	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)		Simultaneous	155	5775	1	12.49	14.00	1.416	93.06	1.075	0.07	0.451	0.686	
	WLAN5.8GHz	802.11a 6Mbps	Front	13mm	Ant 5+8(5)		Full Power	165	5825	1	17.94	19.50	1.432	98.62	1.014	0.06	0.201	0.292	
	WLAN5.8GHz	802.11a 6Mbps	Back	16mm	Ant 5+8(5)		Full Power	165	5825	1	17.94	19.50	1.432	98.62	1.014	-0.12	0.345	0.501	



Table with columns: Band, Power, Modulation, S, P, R, Side, Dist, Ant, DSI, F1, F2, P1, P2, P3, P4, P5, P6, P7, P8, P9, P10. Includes rows for LTE Band 2, 7, 41, 41C, 41HPUE, 38C, and 41C.



FCC SAR Test Report

Report No. : FA411904-01

Table with columns for LTE Band, Modulation (QPSK), Power (20M), Frequency, Bandwidth, Side, Antenna, and SAR values. Includes sub-sections for 70, 71, and 72.

16.5 Repeated SAR Measurement

<1g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	5mm	Ant 0	DSI 3	251	848.8	30.51	31.50	1.256	-	-	0	0.939	1	1.179
2nd	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	5mm	Ant 0	DSI 3	251	848.8	30.51	31.50	1.256	-	-	0.08	0.911	1.031	1.144
1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	DSI 3	9400	1880	20.94	21.60	1.164	-	-	0.01	1.080	1	1.257
2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	DSI 3	9400	1880	20.94	21.60	1.164	-	-	0.09	1.050	1.029	1.222
1st	LTE Band 7	20M	QPSK	1	0	Back	5mm	Ant 1	Back	DSI 3	21350	2560	21.18	22.00	1.208	-	-	0.04	1.080	1	1.304
2nd	LTE Band 7	20M	QPSK	1	0	Back	5mm	Ant 1	Back	DSI 3	21350	2560	21.18	22.00	1.208	-	-	0.02	1.060	1.019	1.280
1st	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 11	DSI 3	656000	3840	20.28	21.10	1.208	-	-	-0.14	1.020	1	1.232
2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 11	DSI 3	656000	3840	20.28	21.10	1.208	-	-	0.06	0.998	1.022	1.205
1st	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Left Cheek	0mm	Ant 6+8(8)	Standalone	6	2437	16.22	18.00	1.507	98.62	1.014	0.01	0.882	1	1.347
2nd	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Left Cheek	0mm	Ant 6+8(8)	Standalone	6	2437	16.22	18.00	1.507	98.62	1.014	0.06	0.865	1.020	1.321

<10g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	LTE Band 2	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	18700	1860	22.96	23.50	1.132	-	-	0.09	2.620	1	2.967
2nd	LTE Band 2	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	18700	1860	22.96	23.50	1.132	-	-	0.07	2.510	1.044	2.842
1st	LTE Band 41_HPUE	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6	41490	2680	25.20	26.20	1.259	42.9	1.009	-0.07	2.570	1	3.265
2nd	LTE Band 41_HPUE	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6	41490	2680	25.20	26.20	1.259	42.9	1.009	0.07	2.450	1.049	3.112
1st	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	0mm	Ant 11	DSI 4	656000	3840	21.06	22.10	1.271	-	-	0.06	2.400	1	3.049
2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	0mm	Ant 11	DSI 4	656000	3840	21.06	22.10	1.271	-	-	0.02	2.330	1.030	2.960

General Note:

- Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8W/kg$.
- Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR $< 1.45W/kg$, only one repeated measurement is required.
- Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
- The ratio is the difference in percentage between original and repeated *measured SAR*.
- All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

16.6 TDD 5G NR<E Linearity Data Analysis

General Note:

This device support Power Class 2 and Power Class 3 operations for LTE Band 41 and TDD n77. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1. Per FCC Guidance based on the device behavior, all SAR tests were performed using Power Class 3. Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each LTE configuration and exposure condition combination, according to the highest time averaged power for all applicable uplink-downlink configurations in Power Class 2. When the reported SAR vs. output power is linearly scaled with < 10% discrepancy between power classes and all reported SAR are < 1.4 W/kg for 1g and < 3.5 W/kg for 10g, Separate SAR testing for Power Class 2 is not required.

LTE B41-Linearity Data for Head Ant 1			LTE B41-Linearity Data for Head Ant 4		
	LTE B41 (Power Class 3)	LTE B41 (Power Class 2)		LTE B41 (Power Class 3)	LTE B41 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	20.30	21.90
Reported 1g SAR (W/kg)	0.146	0.214	Reported 1g SAR (W/kg)	0.812	0.874
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	159.00	217.01	Frame Averaged (mW)	67.83	67.06
Linearity SAR (W/kg)	0.199		Linearity SAR (W/kg)	0.803	
% deviation from expected linearity		7.39%	% deviation from expected linearity		8.86%
LTE B41-Linearity Data for Body-worn Ant 1			LTE B41-Linearity Data for Body-worn Ant 4		
	LTE B41 (Power Class 3)	LTE B41 (Power Class 2)		LTE B41 (Power Class 3)	LTE B41 (Power Class 2)
Maximum Tune up Power (dBm)	23.00	24.60	Maximum Tune up Power (dBm)	21.50	23.10
Reported 1g SAR (W/kg)	1.267	1.213	Reported 1g SAR (W/kg)	0.866	0.889
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	126.30	124.88	Frame Averaged (mW)	89.41	88.41
Linearity SAR (W/kg)	1.253		Linearity SAR (W/kg)	0.856	
% deviation from expected linearity		-3.17%	% deviation from expected linearity		3.82%
LTE B41-Linearity Data for Hotspot Ant 1			LTE B41-Linearity Data for Hotspot Ant 4		
	LTE B41 (Power Class 3)	LTE B41 (Power Class 2)		LTE B41 (Power Class 3)	LTE B41 (Power Class 2)
Maximum Tune up Power (dBm)	22.40	24.00	Maximum Tune up Power (dBm)	19.30	20.90
Reported 1g SAR (W/kg)	1.242	1.255	Reported 1g SAR (W/kg)	0.581	0.618
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	110.00	108.76	Frame Averaged (mW)	53.88	53.27
Linearity SAR (W/kg)	1.228		Linearity SAR (W/kg)	0.574	
% deviation from expected linearity		2.20%	% deviation from expected linearity		7.58%
LTE B41-Linearity Data for Extremity Ant 1			LTE B41-Linearity Data for Extremity Ant 4		
	LTE B41 (Power Class 3)	LTE B41 (Power Class 2)		LTE B41 (Power Class 3)	LTE B41 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	26.20	Maximum Tune up Power (dBm)	24.00	25.60
Reported 10g SAR (W/kg)	3.159	3.265	Reported 10g SAR (W/kg)	2.481	2.497
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	159.00	180.50	Frame Averaged (mW)	159.00	157.21
Linearity SAR (W/kg)	3.586		Linearity SAR (W/kg)	2.453	
% deviation from expected linearity		-8.96%	% deviation from expected linearity		1.79%
FR1 n77 Part 270 (HPUE)-Linearity Data for Head Ant 2			FR1 n77 Part 270 (HPUE)-Linearity Data for Head Ant 5		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	17.20	20.20	Maximum Tune up Power (dBm)	16.90	19.90
Reported 1g SAR (W/kg)	0.851	0.900	Reported 1g SAR (W/kg)	0.866	0.865
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	52.48	52.36	Frame Averaged (mW)	48.98	48.86
Linearity SAR (W/kg)	0.849		Linearity SAR (W/kg)	0.864	
% deviation from expected linearity		6.01%	% deviation from expected linearity		0.12%
FR1 n77 Part 270 (HPUE)-Linearity Data for Body-worn Ant 2			FR1 n77 Part 270 (HPUE)-Linearity Data for Body-worn Ant 5		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	17.20	20.20	Maximum Tune up Power (dBm)	16.90	19.90
Reported 1g SAR (W/kg)	0.875	0.876	Reported 1g SAR (W/kg)	0.823	0.876



Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	52.48	52.36	Frame Averaged (mW)	48.98	48.86
Linearity SAR (W/kg)	0.873		Linearity SAR (W/kg)	0.821	
% deviation from expected linearity		0.35%	% deviation from expected linearity		6.69%
FR1 n77 Part 270 (HPUE)-Linearity Data for Hotspot Ant 2			FR1 n77 Part 270 (HPUE)-Linearity Data for Hotspot Ant 5		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	14.10	17.10	Maximum Tune up Power (dBm)	15.10	18.10
Reported 1g SAR (W/kg)	0.561	0.615	Reported 1g SAR (W/kg)	0.621	0.626
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	25.70	25.64	Frame Averaged (mW)	32.36	32.28
Linearity SAR (W/kg)	0.560		Linearity SAR (W/kg)	0.620	
% deviation from expected linearity		9.89%	% deviation from expected linearity		1.04%
FR1 n77 Part 270 (HPUE)-Linearity Data for Extremity Ant 2			FR1 n77 Part 270 (HPUE)-Linearity Data for Extremity Ant 5		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	19.10	22.10	Maximum Tune up Power (dBm)	18.50	21.50
Reported 10g SAR (W/kg)	2.043	1.974	Reported 10g SAR (W/kg)	2.338	2.305
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	81.28	81.09	Frame Averaged (mW)	70.79	70.63
Linearity SAR (W/kg)	2.038		Linearity SAR (W/kg)	2.332	
% deviation from expected linearity		-3.15%	% deviation from expected linearity		-1.18%

FR1 n77 Part 270 (HPUE)-Linearity Data for Head Ant 7			FR1 n77 Part 270 (HPUE)-Linearity Data for Head Ant 11		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	18.30	21.30	Maximum Tune up Power (dBm)	24.00	27.00
Reported 1g SAR (W/kg)	0.822	0.874	Reported 1g SAR (W/kg)	0.226	0.222
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	67.61	67.45	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	0.820		Linearity SAR (W/kg)	0.225	
% deviation from expected linearity		6.58%	% deviation from expected linearity		-1.54%
FR1 n77 Part 270 (HPUE)-Linearity Data for Body-worn Ant 7			FR1 n77 Part 270 (HPUE)-Linearity Data for Body-worn Ant 11		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	17.30	20.30	Maximum Tune up Power (dBm)	21.10	24.10
Reported 1g SAR (W/kg)	0.880	0.883	Reported 1g SAR (W/kg)	1.232	1.171
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	53.70	53.58	Frame Averaged (mW)	128.82	128.52
Linearity SAR (W/kg)	0.878		Linearity SAR (W/kg)	1.229	
% deviation from expected linearity		0.58%	% deviation from expected linearity		-4.73%
FR1 n77 Part 270 (HPUE)-Linearity Data for Hotspot Ant 7			FR1 n77 Part 270 (HPUE)-Linearity Data for Hotspot Ant 11		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	14.20	17.20	Maximum Tune up Power (dBm)	19.50	22.50
Reported 1g SAR (W/kg)	0.612	0.614	Reported 1g SAR (W/kg)	1.240	1.134
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	26.30	26.24	Frame Averaged (mW)	89.13	88.91
Linearity SAR (W/kg)	0.611		Linearity SAR (W/kg)	1.237	
% deviation from expected linearity		0.57%	% deviation from expected linearity		-8.33%
FR1 n77 Part 270 (HPUE)-Linearity Data for Extremity Ant 7			FR1 n77 Part 270 (HPUE)-Linearity Data for Extremity Ant 11		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	19.50	22.50	Maximum Tune up Power (dBm)	22.10	25.10
Reported 10g SAR (W/kg)	2.000	2.011	Reported 10g SAR (W/kg)	3.049	2.897
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	89.13	88.91	Frame Averaged (mW)	162.18	161.80
Linearity SAR (W/kg)	1.995		Linearity SAR (W/kg)	3.042	
% deviation from expected linearity		0.79%	% deviation from expected linearity		-4.76%



Sensor off

LTE B41-Linearity Data for Body-worn Ant 1			LTE B41-Linearity Data for Body-worn Ant 4		
	LTE B41 (Power Class 3)	LTE B41 (Power Class 2)		LTE B41 (Power Class 3)	LTE B41 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 1g SAR (W/kg)	0.321	0.446	Reported 1g SAR (W/kg)	0.358	0.444
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	159.00	217.01	Frame Averaged (mW)	159.00	217.01
Linearity SAR (W/kg)	0.438		Linearity SAR (W/kg)	0.489	
% deviation from expected linearity		1.80%	% deviation from expected linearity		-9.13%

LTE B41-Linearity Data for Extremity Ant 1			LTE B41-Linearity Data for Extremity Ant 4		
	LTE B41 (Power Class 3)	LTE B41 (Power Class 2)		LTE B41 (Power Class 3)	LTE B41 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 10g SAR (W/kg)	0.435	0.543	Reported 10g SAR (W/kg)	0.233	0.305
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	159.00	217.01	Frame Averaged (mW)	159.00	217.01
Linearity SAR (W/kg)	0.594		Linearity SAR (W/kg)	0.318	
% deviation from expected linearity		-8.54%	% deviation from expected linearity		-4.09%

FR1 n77 Part 270 (HPUE)-Linearity Data for Body-worn Ant 2			FR1 n77 Part 270 (HPUE)-Linearity Data for Body-worn Ant 5		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	19.00	22.00
Reported 1g SAR (W/kg)	0.759	0.717	Reported 1g SAR (W/kg)	0.146	0.158
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	250.59	Frame Averaged (mW)	79.43	79.24
Linearity SAR (W/kg)	0.757		Linearity SAR (W/kg)	0.146	
% deviation from expected linearity		-5.31%	% deviation from expected linearity		8.48%

FR1 n77 Part 270 (HPUE)-Linearity Data for Extremity Ant 2			FR1 n77 Part 270 (HPUE)-Linearity Data for Extremity Ant 5		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	19.00	22.00
Reported 10g SAR (W/kg)	0.749	0.733	Reported 10g SAR (W/kg)	0.107	0.113
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	250.59	Frame Averaged (mW)	79.43	79.24
Linearity SAR (W/kg)	0.747		Linearity SAR (W/kg)	0.107	
% deviation from expected linearity		-1.90%	% deviation from expected linearity		5.86%

FR1 n77 Part 270 (HPUE)-Linearity Data for Body-worn Ant 7			FR1 n77 Part 270 (HPUE)-Linearity Data for Body-worn Ant 11		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)		FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	20.00	23.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 1g SAR (W/kg)	0.170	0.167	Reported 1g SAR (W/kg)	0.238	0.221
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	100.00	99.76	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	0.170		Linearity SAR (W/kg)	0.237	
% deviation from expected linearity		-1.53%	% deviation from expected linearity		-6.92%

FR1 n77 Part 270 (HPUE)-Linearity Data for Extremity Ant 7		
	FR1 n77 (Power Class 3)	FR1 n77 (Power Class 2)
Maximum Tune up Power (dBm)	20.00	23.00
Reported 10g SAR (W/kg)	0.214	0.220
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	100.00	99.76
Linearity SAR (W/kg)	0.213	
% deviation from expected linearity		3.05%

17. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product specific 10g SAR
1.	WWAN + WLAN2.4GHz	Yes	Yes	Yes	Yes
2.	WWAN + WLAN5GHz	Yes	Yes	Yes	Yes
3.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
4.	WWAN + WLAN2.4GHz+ NFC				Yes
5.	WWAN + WLAN5GHz+ NFC				Yes
6.	WWAN + Bluetooth+ NFC				Yes

General Note:

1. This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5GNR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. WWAN above includes 5G NR bands and EN-DC combination.
3. EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
4. For EN-DC mode, Qualcomm Smart Transmit algorithm in WWAN adds directly the time-averaged RF exposure from 4G(LTE) and time-averaged RF exposure from 5G NR. Smart Transmit algorithm controls the total RF exposure from both 4G and 5G NR to not exceed FCC limit. Therefore, simultaneous transmission compliance between 4G+5G NR operation is demonstrated in the Part 2 Report during algorithm validation. In Part 1 Report, simultaneous transmission compliance was evaluated individually with other Radios (WLAN or BT) using one of 4G or 5G NR.
5. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
6. This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WLAN Direct (GC/GO), and 5.3GHz / 5.5GHz supports WLAN Direct (GC only). WLAN6GHz has no hotspot function.
7. The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
8. According to the EUT characteristic, WLAN 5GHz and Bluetooth can't transmit simultaneously.
9. According to the EUT characteristic, WLAN 5GHz and WLAN 2.4GHz can't transmit simultaneously.
10. According to the EUT characteristic, WLAN 2.4GHz and Bluetooth cannot transmit simultaneously.
11. NFC can transmit simultaneously with other Radios in extremity exposure condition.
12. For Headset SAR and non-Headset SAR always chose higher SAR to do co-located analysis.
13. For standalone WWAN, always choose the highest SAR among all WWAN bands within the selected antenna for head each exposure position to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each band.
14. The maximum SAR summation is calculated based on the same configuration and test position.
15. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
 - i) 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
 - ii) $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
 - iii) If $SPLSR \leq 0.04$ for 1g SAR and $SPLSR \leq 0.10$ for 10g SAR, simultaneously transmission SAR measurement is not necessary.
 - iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.
 - v) The SPLSR calculated results please refer to section 17.6.

17.1 5G NR + LTE + WLAN + BT Sim-Tx analysis

In 5G NR + LTE + WLAN + BT simultaneous transmission, 5G NR and LTE transmission are managed and controlled by Qualcomm® Smart Transmit, while the RF exposure from WLAN and BT radios is managed using legacy approach, i.e., through a fixed power back-off if needed.

Since WLAN and BT do not employ time-averaging, 1gSAR and 10gSAR measurement for WLAN and BT need to be conducted at their corresponding rated power following current FCC test procedures to determine reported SAR values.

Smart Transmit current implementation assumes hotspots from 5G NR and LTE are collocated. Therefore, for a total of 100% exposure margin, if LTE uses x%, then the exposure margin left for 5G NR is capped to (100-x)%. Thus, the compliance equation for LTE + 5G NR is

$$x\% * A + (100-x)\% * B \leq 1.0,$$

Where, A is normalized reported time-averaged SAR exposure ratio from LTE, and $A \leq 1.0$; B is normalized reported time-averaged exposure ratio from 5G NR (i.e. SAR exposure for 5G FR1), and $B \leq 1.0$.

Let C = normalized reported SAR exposure ratio from WLAN+BT, then for compliance,

$$x\% * A + (100-x)\% * B + C \leq 1.0 \quad (1)$$

$$x\% * A + (100-x)\% * B \leq x\% * \max(A, B) + (100-x)\% * \max(A, B) \leq \max(A, B)$$

$$x\% * A + (100-x)\% * B + C \leq \max(A, B) + C \leq 1.0 \quad (2)$$

If $A + C \leq 1.0$ and $B + C \leq 1.0$ can be proven, then “ $x\% * A + (100-x)\% * B + C \leq 1.0$ ”. Therefore simultaneous transmission analysis for 5G NR + LTE + WLAN + BT can be performed in two steps

Step 1: Prove total exposure ratio (TER) of LTE + WLAN + BT < 1

Step 2: Prove total exposure ratio (TER) of 5G NR + WLAN + BT < 1

Else, if $A + C > 1.0$ and/or $B + C > 1.0$, then the followings need to hold true for compliance:

- i. A and C are decoupled based on the SPLSR criteria, and
- ii. $(100-x)\% * B + C \leq 1.0$, and
- iii. $x\% * A + (100-x)\% * B \leq 1.0$

Note iii. is covered in Part 2 report; i. and ii. should be addressed in Part 2 report.

Above analysis is also apply to LTE inter-band uplink, LTE1 + LTE2 + WLAN + BT simultaneous transmission, so inter-band uplink CA no need to do additional simultaneously analysis again. Only required comply with total exposure ratio (TER) of LTE + WLAN + BT < 1.

17.2 Sub6 Antenna Groups

The 2nd generation of Smart Transmit (GEN2) operates based on pre-defined sub6 antenna groups (AG). Sub6 Tx antennas in the device are grouped based on spatial variation of RF exposure distributions, where the RF exposure of one AG is mutually exclusive from other AG. This is accomplished by demonstrating below conditions for all exposure positions under each DSI for a given exposure category.

- 1) Case 1: Sum of SAR of one antenna from each of the sub6 AGs and the RF exposure from radios outside Smart Transmit is less than regulatory limits for each supported DSI. This condition must be demonstrated for all antenna combinations of sub6 AGs.
 - i. For a given DSI, obtain the highest *reported* SAR for each antenna out of all supported technologies and frequency bands. Obtain the maximum *reported* SAR for each AG by taking the maximum out of *reported* SAR for all antennas belonging to each AG.
 - ii. Demonstrate that the sum of maximum reported SAR (normalized to regulatory limit) from each of the sub6 AGs and the sum of reported SAR (normalized to regulatory limit) from all supported radios outside of Smart Transmit should be less than 1.0
- 2) Case 2: If the Case 1 is NOT met, then for a given antenna grouping scheme plus external radios/antennas (ERs) (referred to as 'configuration'), demonstrate all AG pairs, all ER pairs and all (AG, ER) pairs in the configuration meet SPLSR criteria (Section 4.3.2 (c) in FCC KDB 447498 D01 v06) for each exposure position under each supported DSI. For a given exposure position under a given DSI, prove all AG pairs, all ER pairs and all (AG, ER) pairs (if there are external radios outside Smart Transmit) in the configuration meet SPLSR.

This device supports two sub6 AG: AG0 and AG1, the detailed please refer to the below table:

Antenna Group 0 (AG0)	ANT0 & ANT1 & ANT11
Antenna Group 1 (AG1)	ANT2 & ANT4 & ANT 5 & ANT7

The conditions are verified through the following criterias:

- i) (SAR1 + SAR2 criteria): If SPLSR criteria is not used, then the highest reported SAR at *Plimit* for each antenna should be obtained out of all supported technologies and frequency bands for each DSI. Demonstrate that the sum of reported SAR of one antenna from each of the sub6 AGs and the sum of RF exposure from all supported radios outside of Smart Transmit should be less than the regulatory limit as given below for each DSI.
 1. Obtain the worst-case reported SAR for each antenna group (i.e., maximum *reported* SAR at *Plimit* out of all supported technologies, frequency bands and antennas in AG0 and AG1), denoted as max.SAR.AG0 and max.SAR.AG1, and obtain the worst-case RF exposure for each external radio, and demonstrate that the sum of these RF exposures meets: { [max.SAR.AG0+ max.SAR.AG1] + WIFI/BT worst-case reported SAR} ≤ 1.6 (for 1g, or 4.0 for 10g). (WIFI/BT worst-case reported SAR is the worst SAR in all combinations of WIFI and BT simultaneous transmission)
- ii) (SPLSR criteria): For each antenna, obtain the highest reported SAR value at *Plimit* out of all supported technologies for each frequency band. Using these values, demonstrate for a given DSI that every antenna from one sub6 AG meets SPLSR criteria with every antenna in another sub6 AG for all frequency bands. This criteria must be demonstrated for all antenna pair combinations irrespective of supported simultaneous transmission scenarios as given below for each DSI:
 - b. SPLSR criteria should be met for all antenna pair combinations of AG0 and AG1. As it can be seen, these include all combinations of antenna groups, antennas, and frequency bands.
 - c. Obtain combined SAR per AG: Obtain the worst-case conservative combined SAR and its peak location for each AG.
 - d. Use the 'closest' peak location out of all antennas of AGj to evaluate SPLSR with other AGs in the configuration. Note, by 'closest', select the peak location out of all antennas (ε AGj) that is closest to the peak location of other AG where SPLSR is evaluated.
- iii) (combination of SPLSR & SAR1+SAR2 criteria): If SPLSR criteria for all the combinations of sub6 antenna groups in (i) is demonstrated to show that each AG is mutually exclusive from other AGs, and if the WIFI/BT antennas supported outside of Smart Transmit do not meet SPLSR criteria, then the condition in (ii) reduces to: {max.SAR.AG0 + worst-case reported SAR} ≤ 1.6 and {max.SAR.AG1+ worst-case reported SAR } ≤ 1.6 for compliance demonstration (for 1g, or 4.0 for 10g).

For summed SAR results and SPLSR detailed analysis, please refer to section 17.3 / 17.4 / 17.5 / 17.6 /17.7 of this report. All of the combinations of sub6 antenna groups are sufficient to show that AG0 is mutually exclusive from AG1 and that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528- 2013 Section 6.3.4.1.

17.3 Head Exposure Conditions

General Note: The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN/BT:

<AG0 maximum report SAR>:

Test Position	Ant0	Ant1	Ant11	MAX
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Right Cheek	0.250	0.371	0.226	0.371
Right Tilted	0.129	0.169	0.091	0.169
Left Cheek	0.350	0.216	0.141	0.350
Left Tilted	0.248	0.152	0.139	0.248

<AG1 maximum report SAR>:

Test Position	Ant2	Ant4	Ant5	Ant7	MAX
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Right Cheek 0mm	0.900	0.905	0.651	0.256	0.905
Right Tilted 0mm	0.415	0.890	0.821	0.233	0.890
Left Cheek 0mm	0.241	0.626	0.694	0.874	0.874
Left Tilted 0mm	0.169	0.894	0.866	0.655	0.894

<WLAN/BT Worse-case SAR>:

Test Position	NO	1	2	3	Wlan/BT worst case
		WLAN2.4GHz Ant 6+8	WLAN5GHz Ant 5+8	Bluetooth Ant 6	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	Summed 1g SAR (W/kg)
Right Cheek 0mm		0.303	0.575	0.125	0.575
Right Tilted 0mm		0.308	0.694	0.111	0.694
Left Cheek 0mm		0.642	0.519	0.256	0.642
Left Tilted 0mm		0.469	0.650	0.199	0.650

<Simultaneous Transmission analysis of AG0 + AG1 + WLAN/BT Worse-case>:

Test Position	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case
	1g SAR (W/kg)	1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
Right Cheek 0mm	0.371	0.905	0.575	1.85
Right Tilted 0mm	0.169	0.890	0.694	1.75
Left Cheek 0mm	0.350	0.874	0.642	1.87
Left Tilted 0mm	0.248	0.894	0.650	1.79

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

Right Cheek					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	0.250	0.900	0.575	1.73	Case 1
Ant0-Ant4	0.250	0.905	0.575	1.73	Case 2
Ant0-Ant5	0.250	0.651	0.575	1.48	-
Ant0-Ant7	0.250	0.256	0.575	1.08	-
Ant1-Ant2	0.371	0.900	0.575	1.85	Case 3
Ant1-Ant4	0.371	0.905	0.575	1.85	Case 4
Ant1-Ant5	0.371	0.651	0.575	1.60	Case 5
Ant1-Ant7	0.371	0.256	0.575	1.20	-
Ant11-Ant2	0.226	0.900	0.575	1.70	Case 6
Ant11-Ant4	0.226	0.905	0.575	1.71	Case 7
Ant11-Ant5	0.226	0.651	0.575	1.45	-
Ant11-Ant7	0.226	0.256	0.575	1.06	-



Right Tilted					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	0.129	0.415	0.694	1.24	-
Ant0-Ant4	0.129	0.890	0.694	1.71	Case 8
Ant0-Ant5	0.129	0.821	0.694	1.64	Case 9
Ant0-Ant7	0.129	0.233	0.694	1.06	-
Ant1-Ant2	0.169	0.415	0.694	1.28	-
Ant1-Ant4	0.169	0.890	0.694	1.75	Case 10
Ant1-Ant5	0.169	0.821	0.694	1.68	Case 11
Ant1-Ant7	0.169	0.233	0.694	1.10	-
Ant11-Ant2	0.091	0.415	0.694	1.20	-
Ant11-Ant4	0.091	0.890	0.694	1.68	Case 12
Ant11-Ant5	0.091	0.821	0.694	1.61	Case 13
Ant11-Ant7	0.091	0.233	0.694	1.02	-

Left Cheek					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	0.350	0.241	0.642	1.23	-
Ant0-Ant4	0.350	0.626	0.642	1.62	Case 14
Ant0-Ant5	0.350	0.694	0.642	1.69	Case 15
Ant0-Ant7	0.350	0.874	0.642	1.87	Case 16
Ant1-Ant2	0.216	0.241	0.642	1.10	-
Ant1-Ant4	0.216	0.626	0.642	1.48	-
Ant1-Ant5	0.216	0.694	0.642	1.55	-
Ant1-Ant7	0.216	0.874	0.642	1.73	Case 17
Ant11-Ant2	0.141	0.241	0.642	1.02	-
Ant11-Ant4	0.141	0.626	0.642	1.41	-
Ant11-Ant5	0.141	0.694	0.642	1.48	-
Ant11-Ant7	0.141	0.874	0.642	1.66	Case 18

Left Tilted					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	0.248	0.169	0.650	1.07	-
Ant0-Ant4	0.248	0.894	0.650	1.79	Case 19
Ant0-Ant5	0.248	0.866	0.650	1.76	Case 20
Ant0-Ant7	0.248	0.655	0.650	1.55	-
Ant1-Ant2	0.152	0.169	0.650	0.97	-
Ant1-Ant4	0.152	0.894	0.650	1.70	Case 21
Ant1-Ant5	0.152	0.866	0.650	1.67	Case 22
Ant1-Ant7	0.152	0.655	0.650	1.46	-
Ant11-Ant2	0.139	0.169	0.650	0.96	-
Ant11-Ant4	0.139	0.894	0.650	1.68	Case 23
Ant11-Ant5	0.139	0.866	0.650	1.66	Case 24
Ant11-Ant7	0.139	0.655	0.650	1.44	-

17.4 Hotspot Exposure Conditions

General Note: The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN/BT:

<AG0 maximum report SAR>:

Test Position	Ant0	Ant1	Ant11	MAX
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Front	0.673	1.044	0.476	1.044
Back	1.291	1.241	0.813	1.291
Left Side	0.890	0.205	0.039	0.890
Right Side	0.134	0.371	1.240	1.240
Top Side				
Bottom Side	0.854	1.255	0.368	1.255

<AG1 maximum report SAR>:

Test Position	Ant2	Ant4	Ant5	Ant7	MAX
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Front	0.261	0.330	0.233	0.196	0.330
Back	0.624	0.646	0.567	0.412	0.646
Left Side	0.630	0.362	0.054	0.025	0.630
Right Side	0.017	0.133	0.109	0.614	0.614
Top Side	0.093	0.643	0.626	0.124	0.643
Bottom Side					

<WLAN/BT Worse-case SAR>:

NO	1	2	3	Wlan/BT worst case
	WLAN2.4GHz Ant 6+8	WLAN5GHz Ant 5+8	Bluetooth Ant 6	
Test Position	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	Summed 1g SAR (W/kg)
Front	0.503	0.359	0.117	0.503
Back	0.935	0.933	0.170	0.935
Left Side				
Right Side	0.878	0.725	0.078	0.878
Top Side	0.752	0.844	0.251	0.844
Bottom Side				

<Simultaneous Transmission analysis of AG0 + AG1 + WLAN/BT Worse-case>:

Test Position	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case
	1g SAR (W/kg)	1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
Front	1.044	0.330	0.503	1.88
Back	1.291	0.646	0.935	2.87
Left Side	0.890	0.630		1.52
Right Side	1.240	0.614	0.878	2.73
Top Side		0.643	0.000	0.64
Bottom Side	1.255			1.26

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.



Front					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	0.673	0.261	0.503	1.44	-
Ant0-Ant4	0.673	0.330	0.503	1.51	-
Ant0-Ant5	0.673	0.233	0.503	1.41	-
Ant0-Ant7	0.673	0.196	0.503	1.37	-
Ant1-Ant2	1.044	0.261	0.503	1.81	Case 41
Ant1-Ant4	1.044	0.330	0.503	1.88	Case 42
Ant1-Ant5	1.044	0.233	0.503	1.78	Case 43
Ant1-Ant7	1.044	0.196	0.503	1.74	Case 80
Ant11-Ant2	0.476	0.261	0.503	1.24	-
Ant11-Ant4	0.476	0.330	0.503	1.31	-
Ant11-Ant5	0.476	0.233	0.503	1.21	-
Ant11-Ant7	0.476	0.196	0.503	1.18	-

Back					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	1.291	0.624	0.935	2.85	Case 44
Ant0-Ant4	1.291	0.646	0.935	2.87	Case 45
Ant0-Ant5	1.291	0.567	0.935	2.79	Case 46
Ant0-Ant7	1.291	0.412	0.935	2.64	Case 47
Ant1-Ant2	1.241	0.624	0.935	2.80	Case 48
Ant1-Ant4	1.241	0.646	0.935	2.82	Case 49
Ant1-Ant5	1.241	0.567	0.935	2.74	Case 50
Ant1-Ant7	1.241	0.412	0.935	2.59	Case 51
Ant11-Ant2	0.813	0.624	0.935	2.37	Case 52
Ant11-Ant4	0.813	0.646	0.935	2.39	Case 53
Ant11-Ant5	0.813	0.567	0.935	2.32	Case 54
Ant11-Ant7	0.813	0.412	0.935	2.16	Case 55

Right Side					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	0.134	0.017	0.878	1.03	-
Ant0-Ant4	0.134	0.133	0.878	1.15	-
Ant0-Ant5	0.134	0.109	0.878	1.12	-
Ant0-Ant7	0.134	0.614	0.878	1.63	Case 57
Ant1-Ant2	0.371	0.017	0.878	1.27	-
Ant1-Ant4	0.371	0.133	0.878	1.38	-
Ant1-Ant5	0.371	0.109	0.878	1.36	-
Ant1-Ant7	0.371	0.614	0.878	1.86	Case 58
Ant11-Ant2	1.240	0.017	0.878	2.14	Case 59
Ant11-Ant4	1.240	0.133	0.878	2.25	Case 60
Ant11-Ant5	1.240	0.109	0.878	2.23	Case 61
Ant11-Ant7	1.240	0.614	0.878	2.73	Case 62

17.5 Body-Worn Accessory Exposure Conditions

General Note: The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN/BT:

<AG0 maximum report SAR>:

Test Position	Ant0	Ant1	Ant11	MAX
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Front	0.673	1.197	0.722	1.197
Back	1.291	1.304	1.232	1.304

<AG1 maximum report SAR>:

Test Position	Ant2	Ant4	Ant5	Ant7	MAX
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Front	0.429	0.425	0.339	0.379	0.429
Back	0.901	0.889	0.876	0.883	0.901

<WLAN/BT Worse-case SAR>:

NO	1	2	3	Wlan/BT worst case
	WLAN2.4GHz Ant 6+8	WLAN5GHz Ant 5+8	Bluetooth Ant 6	
Test Position	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	Summed 1g SAR (W/kg)
Front	0.328	0.314	0.117	0.328
Back	0.657	0.687	0.170	0.687

<Simultaneous Transmission analysis of AG0 + AG1 + WLAN/BT Worse-case>:

Test Position	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan/BT worst case
	1g SAR (W/kg)	1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
Front	1.197	0.429	0.328	1.95
Back	1.304	0.901	0.687	2.89

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

Front					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	0.673	0.429	0.328	1.43	-
Ant0-Ant4	0.673	0.425	0.328	1.43	-
Ant0-Ant5	0.673	0.339	0.328	1.34	-
Ant0-Ant7	0.673	0.379	0.328	1.38	-
Ant1-Ant2	1.197	0.429	0.328	1.95	Case 25
Ant1-Ant4	1.197	0.425	0.328	1.95	Case 26
Ant1-Ant5	1.197	0.339	0.328	1.86	Case 27
Ant1-Ant7	1.197	0.379	0.328	1.90	Case 28
Ant11-Ant2	0.722	0.429	0.328	1.48	-
Ant11-Ant4	0.722	0.425	0.328	1.48	-
Ant11-Ant5	0.722	0.339	0.328	1.39	-
Ant11-Ant7	0.722	0.379	0.328	1.43	-

Back					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	1.291	0.901	0.687	2.88	Case 29
Ant0-Ant4	1.291	0.889	0.687	2.87	Case 30
Ant0-Ant5	1.291	0.876	0.687	2.85	Case 31
Ant0-Ant7	1.291	0.883	0.687	2.86	Case 32
Ant1-Ant2	1.304	0.901	0.687	2.89	Case 33
Ant1-Ant4	1.304	0.889	0.687	2.88	Case 34
Ant1-Ant5	1.304	0.876	0.687	2.87	Case 35
Ant1-Ant7	1.304	0.883	0.687	2.87	Case 36
Ant11-Ant2	1.232	0.901	0.687	2.82	Case 37
Ant11-Ant4	1.232	0.889	0.687	2.81	Case 38
Ant11-Ant5	1.232	0.876	0.687	2.80	Case 39
Ant11-Ant7	1.232	0.883	0.687	2.80	Case 40

Sensor off

General Note: The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN/BT:

<AG0 maximum report SAR>:

Test Position	Ant0	Ant1	Ant11	MAX
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Front 13mm	0.221	0.771	0.199	0.771
Back 16mm	0.225	0.763	0.238	0.763

<AG1 maximum report SAR>:

Test Position	Ant2	Ant4	Ant5	Ant7	MAX
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Front 13mm	0.580	0.444	0.095	0.123	0.580
Back 16mm	0.759	0.504	0.158	0.170	0.759

<WLAN/BT Worse-case SAR>:

Test Position	NO	1	2	Wlan/BT worst case
		WLAN2.4GHz Ant 6+8	WLAN5GHz Ant 5+8	
		1g SAR (W/kg)	1g SAR (W/kg)	Summed 1g SAR (W/kg)
Front 13mm		0.393	0.483	0.483
Back 16mm		0.490	0.563	0.563

<Simultaneous Transmission analysis of AG0 + AG1 + WLAN+BT Worse-case>:

Test Position	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan/BT worst case
	1g SAR (W/kg)	1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
Front 13mm	0.771	0.580	0.483	1.83
Back 16mm	0.763	0.759	0.563	2.09

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.



Front					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	0.221	0.580	0.483	1.28	-
Ant0-Ant4	0.221	0.409	0.483	1.11	-
Ant0-Ant5	0.221	0.095	0.483	0.80	-
Ant0-Ant7	0.221	0.123	0.483	0.83	-
Ant1-Ant2	0.771	0.580	0.483	1.83	Case 76
Ant1-Ant4	0.771	0.409	0.483	1.66	Case 77
Ant1-Ant5	0.771	0.095	0.483	1.35	-
Ant1-Ant7	0.771	0.123	0.483	1.38	-
Ant11-Ant2	0.199	0.580	0.483	1.26	-
Ant11-Ant4	0.199	0.409	0.483	1.09	-
Ant11-Ant5	0.199	0.095	0.483	0.78	-
Ant11-Ant7	0.199	0.123	0.483	0.81	-

Back					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan /BT worst case	Note
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant2	0.225	0.759	0.563	1.55	-
Ant0-Ant4	0.225	0.504	0.563	1.29	-
Ant0-Ant5	0.225	0.158	0.563	0.95	-
Ant0-Ant7	0.225	0.170	0.563	0.96	-
Ant1-Ant2	0.763	0.759	0.563	2.09	Case 78
Ant1-Ant4	0.763	0.504	0.563	1.83	Case 79
Ant1-Ant5	0.763	0.158	0.563	1.48	-
Ant1-Ant7	0.763	0.170	0.563	1.50	-
Ant11-Ant2	0.238	0.759	0.563	1.56	-
Ant11-Ant4	0.238	0.504	0.563	1.31	-
Ant11-Ant5	0.238	0.158	0.563	0.96	-
Ant11-Ant7	0.238	0.170	0.563	0.97	-

17.6 Product specific 10g SAR Exposure Conditions

General Note:

1. For Bluetooth Product specific 10g stand-alone SAR is not required for a transmitter or antenna, due to 1g hotspot SAR is <1.2W/kg.
2. The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN/BT+NFC:

<AG0 maximum report SAR>:

Test Position	Ant0	Ant1	Ant11	MAX
	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
Front		2.940		2.940
Back	2.173	3.000	2.249	3.000
Left Side				0.000
Right Side			3.049	3.049
Top Side				
Bottom Side		3.265		3.265

<AG1 maximum report SAR>:

Test Position	Ant2	Ant4	Ant5	Ant7	MAX
	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
Front	0.999				0.999
Back	2.043	2.283	0.844	0.773	2.283
Left Side	2.026				2.026
Right Side				2.011	2.011
Top Side		2.497	2.305		2.497
Bottom Side					

<WLAN +NFC Worse-case SAR>:

NO	1	2	3	1+3	2+3	Wlan +NFC worst case
	WLAN2.4GHz Ant 6+8	WLAN5GHz Ant 5+8	NFC	WLAN 2.4G+NFC	WLAN 5G+NFC	
Test Position	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	Summed 10g SAR (W/kg)
Front		0.470	0.001	0.001	0.471	0.471
Back	0.370	0.738	0.044	0.414	0.782	0.782
Left Side			0.002	0.002	0.002	0.002
Right Side	0.735	0.947	0.001	0.736	0.948	0.948
Top Side	0.973	0.996	0.001	0.974	0.997	0.997
Bottom Side			0.001	0.001	0.001	0.001

<Simultaneous Transmission analysis ofAG0 + AG1 + WLAN +NFC Worse-case >:

Test Position	AG0	AG1	Wlan+NFC worst case	AG0+AG1+wlan+NFC worst case
	10g SAR (W/kg)	10g SAR (W/kg)	Summed 10g SAR (W/kg)	Summed 10g SAR (W/kg)
Front	2.940	0.999	0.471	4.41
Back	3.000	2.283	0.782	6.07
Left Side		2.026	0.002	2.03
Right Side	3.049	2.011	0.948	6.01
Top Side		2.497	0.997	3.49
Bottom Side	3.265		0.001	3.27

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.



Front					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan+NFC worst case	Note
	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	
Ant0-Ant2		0.999	0.471	1.47	-
Ant0-Ant4			0.471	0.47	-
Ant0-Ant5			0.471	0.47	-
Ant0-Ant7			0.471	0.47	-
Ant1-Ant2	2.940	0.999	0.471	4.41	Case 63
Ant1-Ant4	2.940		0.471	3.41	-
Ant1-Ant5	2.940		0.471	3.41	-
Ant1-Ant7	2.940		0.471	3.41	-
Ant11-Ant2		0.999	0.471	1.47	-
Ant11-Ant4			0.471	0.47	-
Ant11-Ant5			0.471	0.47	-
Ant11-Ant7			0.471	0.47	-

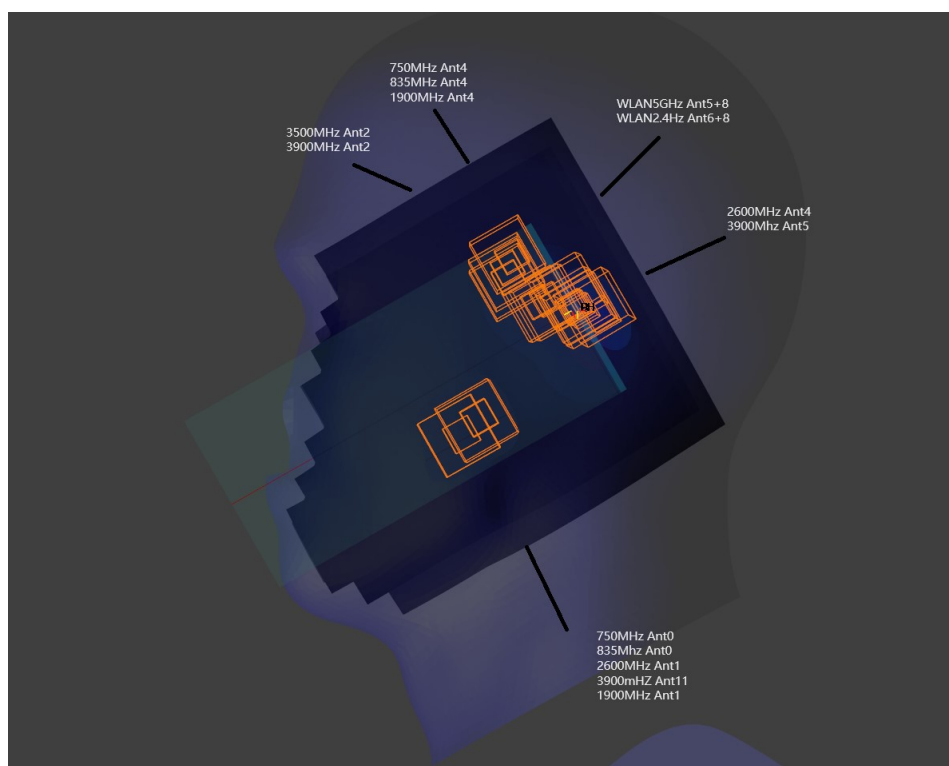
Back					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan+NFC worst case	Note
	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	
Ant0-Ant2	2.173	2.043	0.782	5.00	Case 64
Ant0-Ant4	2.173	2.283	0.782	5.24	Case 65
Ant0-Ant5	2.173	0.844	0.782	3.80	-
Ant0-Ant7	2.173	0.773	0.782	3.73	-
Ant1-Ant2	3.000	2.043	0.782	5.83	Case 66
Ant1-Ant4	3.000	2.283	0.782	6.07	Case 67
Ant1-Ant5	3.000	0.844	0.782	4.63	Case 68
Ant1-Ant7	3.000	0.773	0.782	4.56	Case 69
Ant11-Ant2	2.249	2.043	0.782	5.07	Case 70
Ant11-Ant4	2.249	2.283	0.782	5.31	Case 71
Ant11-Ant5	2.249	0.844	0.782	3.88	-
Ant11-Ant7	2.249	0.773	0.782	3.80	-

Right Side					
Ant combination	AG0	AG1	Wlan/BT worst case	AG0+AG1+wlan+NFC worst case	Note
	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	
Ant0-Ant2			0.948	0.95	-
Ant0-Ant4			0.948	0.95	-
Ant0-Ant5			0.948	0.95	-
Ant0-Ant7		2.011	0.948	3.21	-
Ant1-Ant2			0.948	0.95	-
Ant1-Ant4			0.948	0.95	-
Ant1-Ant5			0.948	0.95	-
Ant1-Ant7		2.011	0.948	3.21	-
Ant11-Ant2	3.049		0.948	4.00	Case 72
Ant11-Ant4	3.049		0.948	4.00	Case 73
Ant11-Ant5	3.049		0.948	4.00	Case 74
Ant11-Ant7	3.049	2.011	0.948	6.01	Case 75

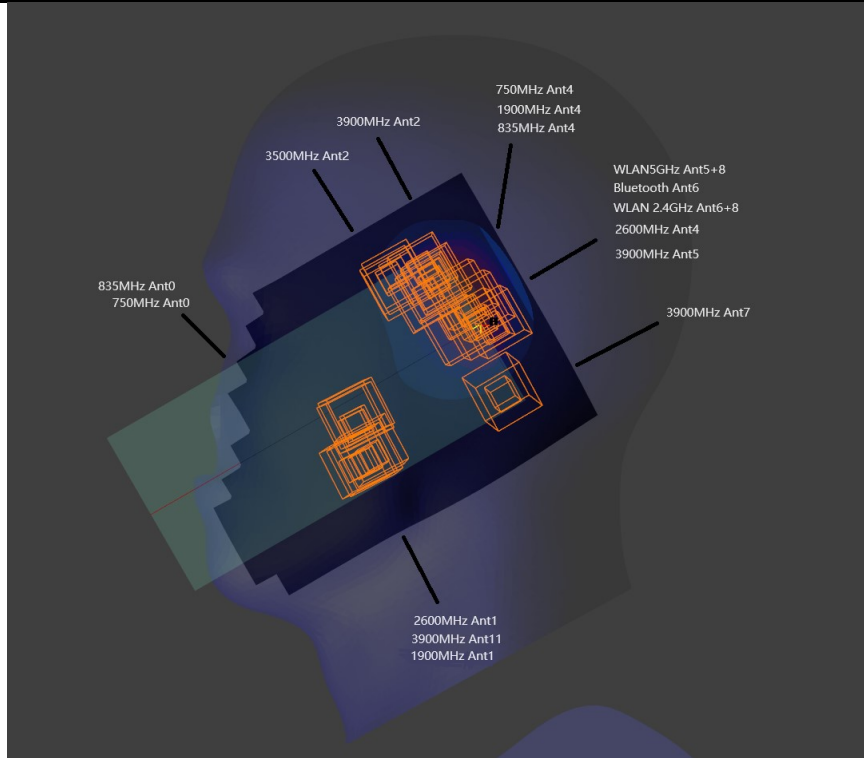
17.7 SPLSR Evaluation and Analysis

General Note:

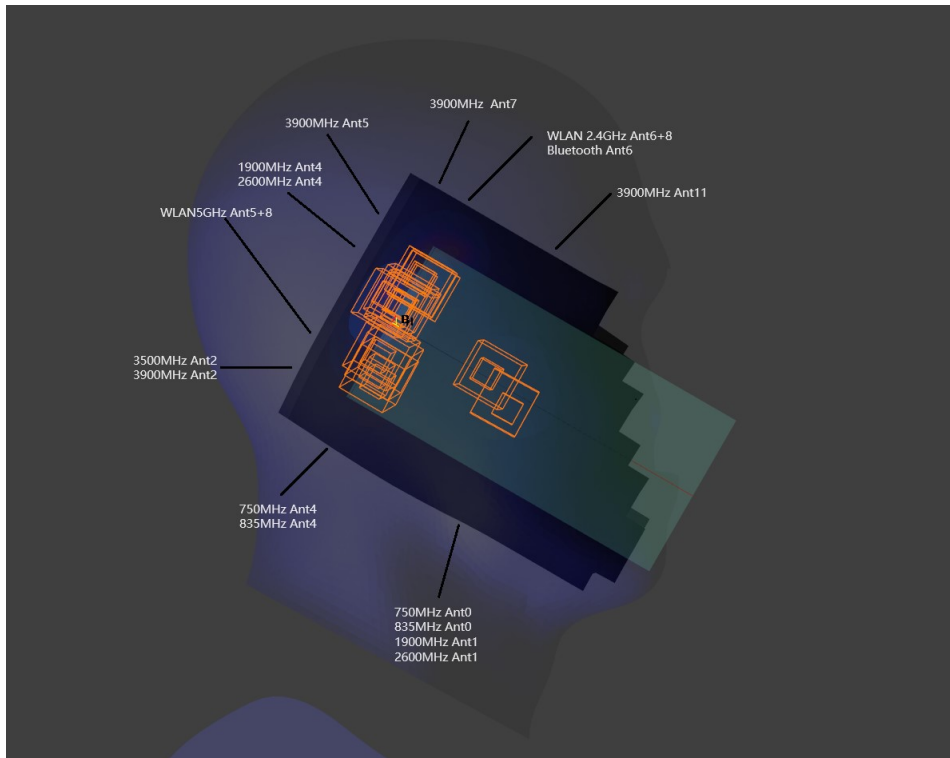
1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. $SPLSR = (SAR1 + SAR2)1.5 / (\text{min. separation distance, mm})$. If $SPLSR \leq 0.04$ for 1g SAR and $SPLSR \leq 0.10$ for 10g SAR, simultaneously transmission SAR measurement is not necessary.
3. Per April 2022 TCB Workshop Notes, AG1 was summed algebraically with the BT/WIFI Antenna 5/6/8 and NFC antenna for the purposes of hybrid SPLSR combination and they are located at the Top of the device.
4. Per April 2022 TCB Workshop, instead of doing a small volume scan over a co-located antenna pair, used summing the SAR values of the co-located pair and using that value in SPLSR calculation. In the calculation used the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.
5. The axis peak locations refer to Section 17.8.



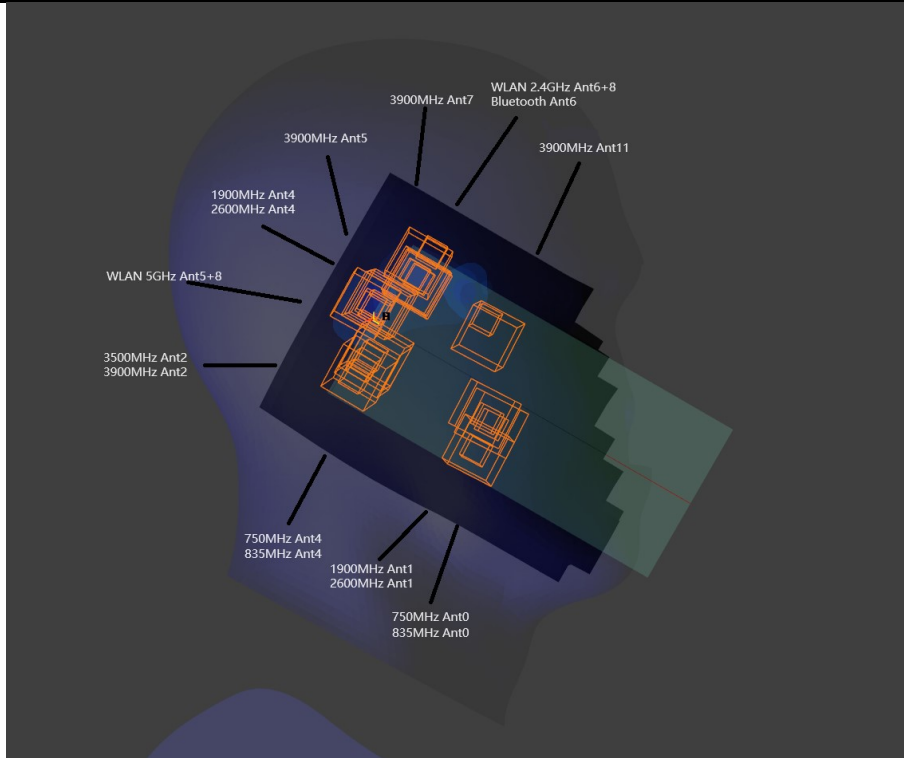
Head WWAN+WLAN+BT Right Tilted 0mm



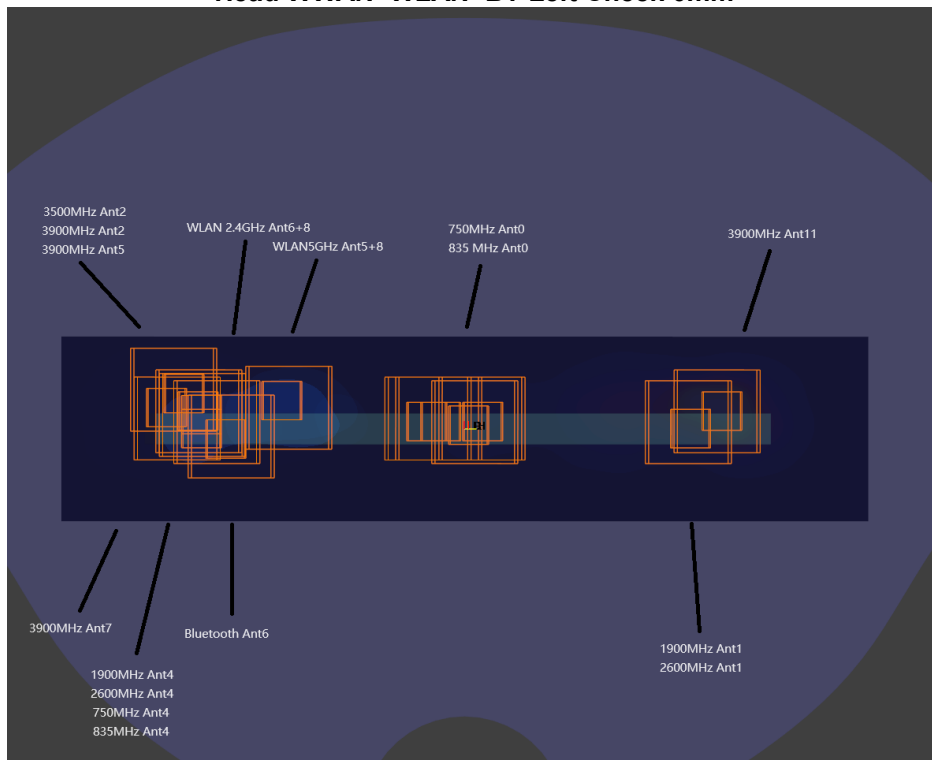
Head WWAN+WLAN+BT Right Cheek 0mm



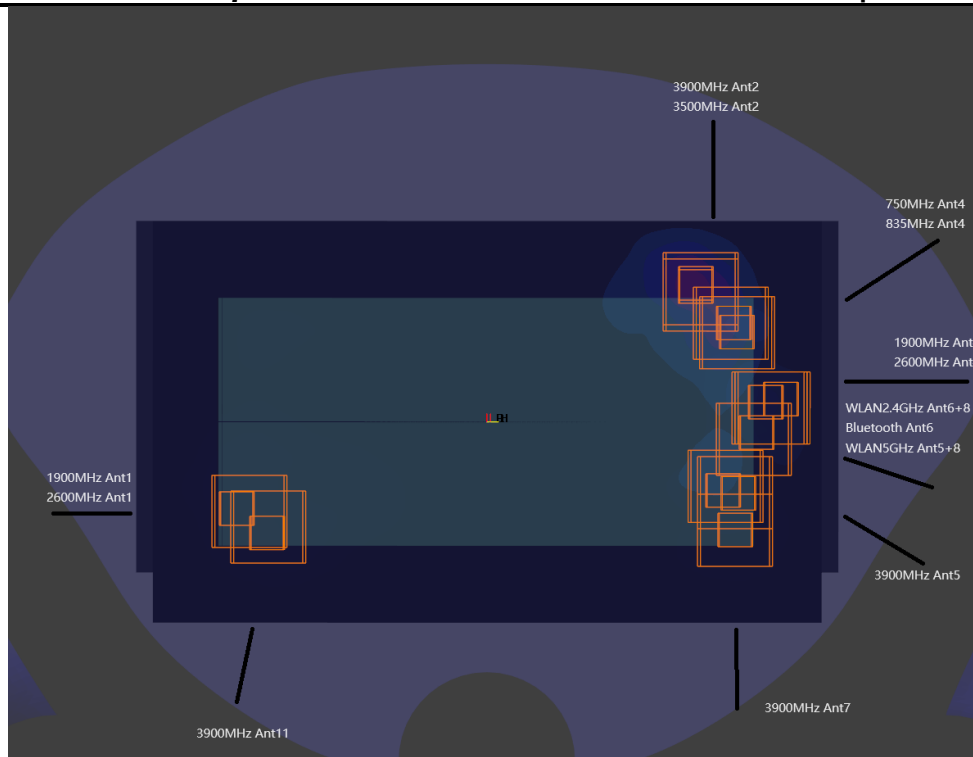
Head WWAN+WLAN+BT Left Tilted 0mm



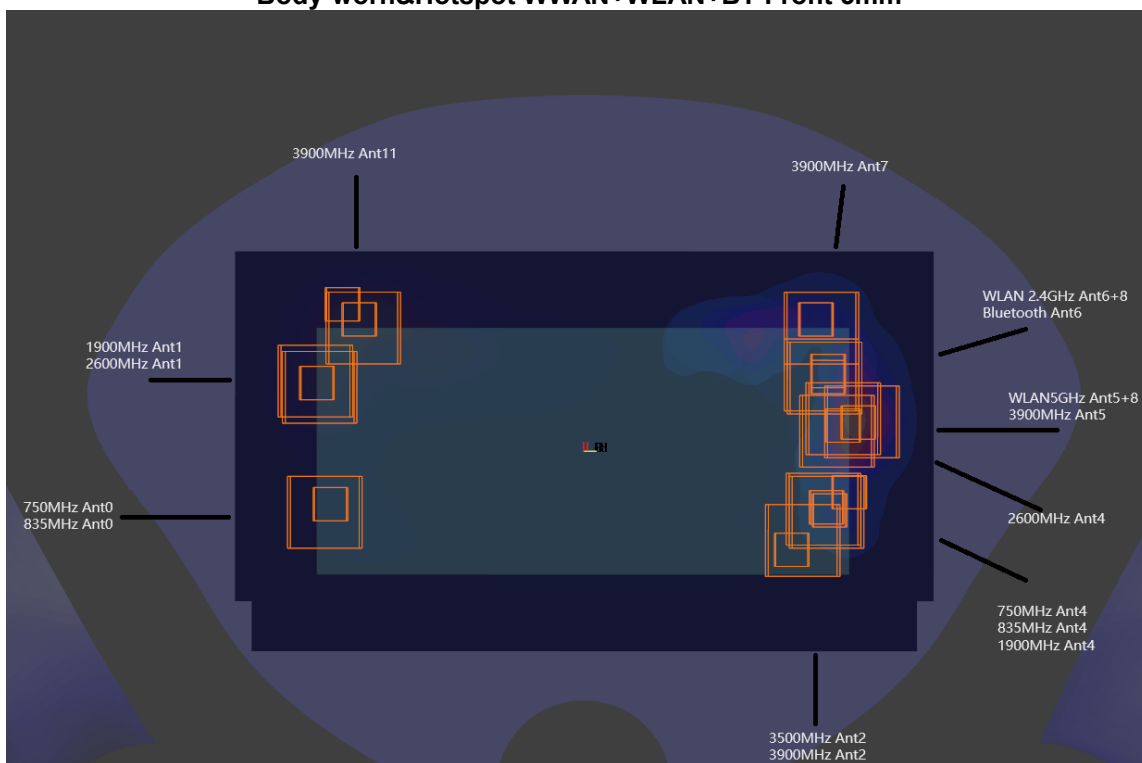
Head WWAN+WLAN+BT Left Cheek 0mm



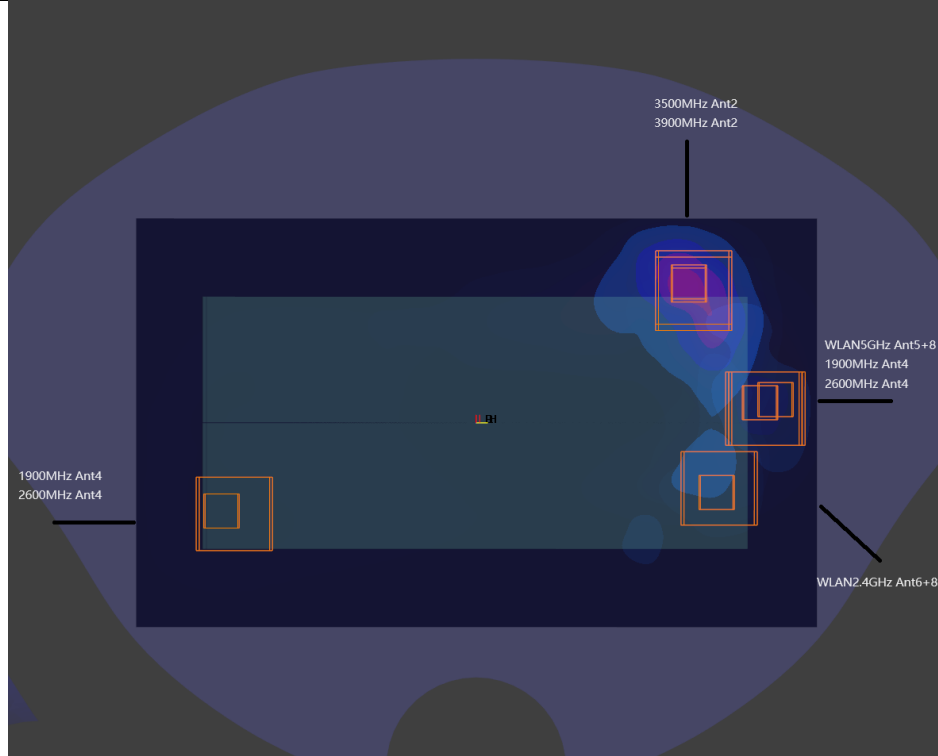
Hotspot WWAN+WLAN+BT Right Side 5mm



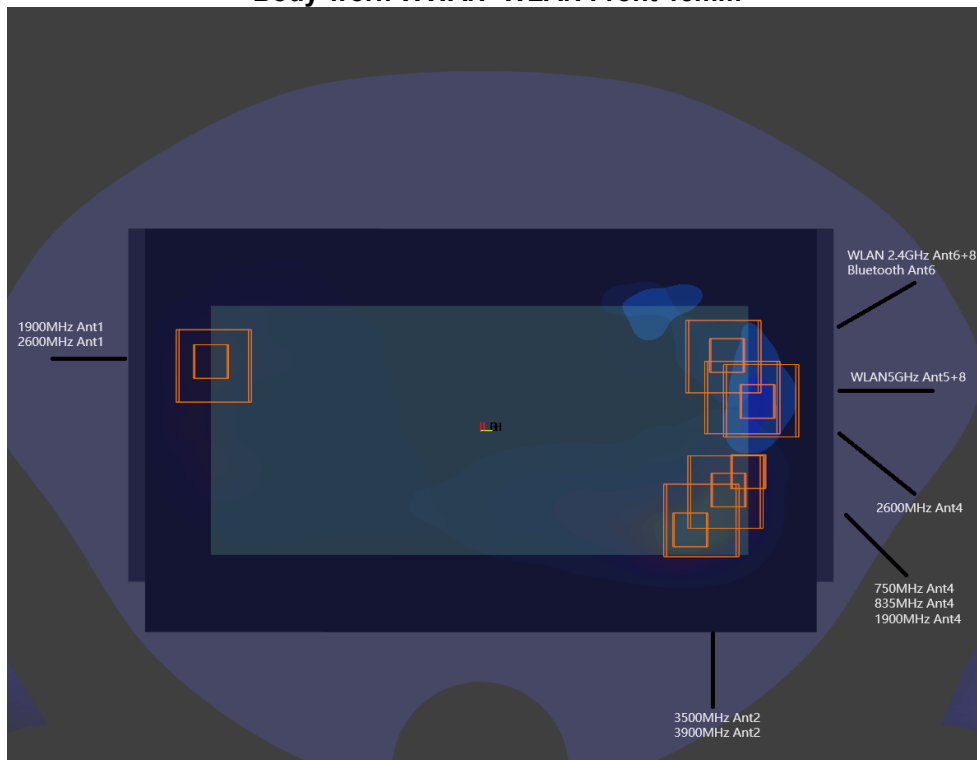
Body-worn&Hotspot WWAN+WLAN+BT Front 5mm



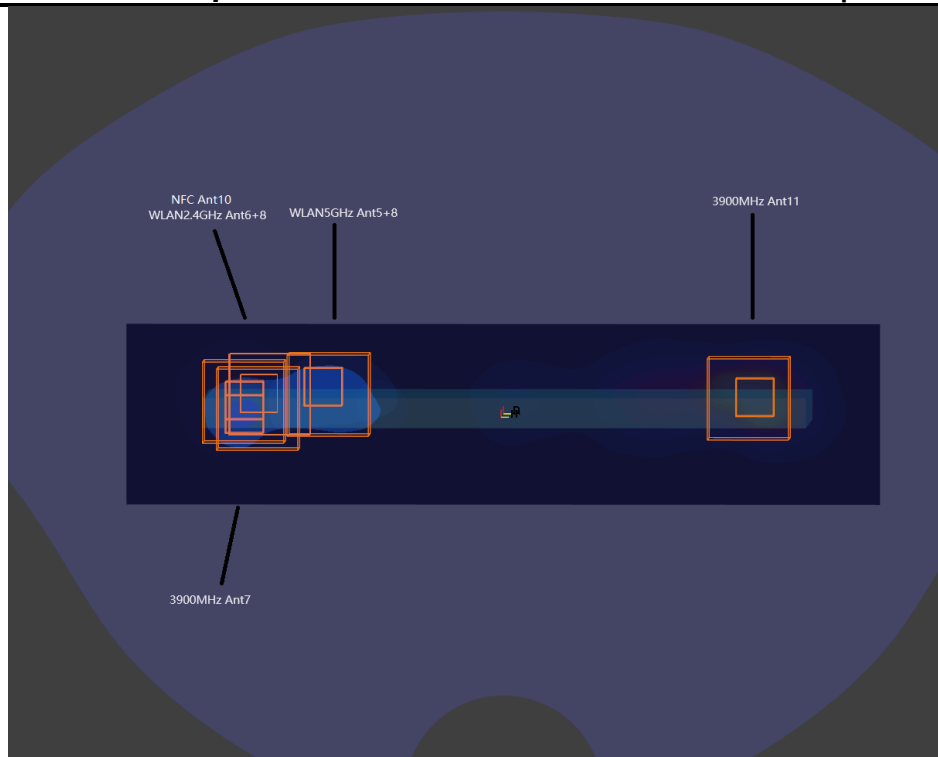
Body-worn&Hotspot WWAN+WLAN+BT Back 5mm



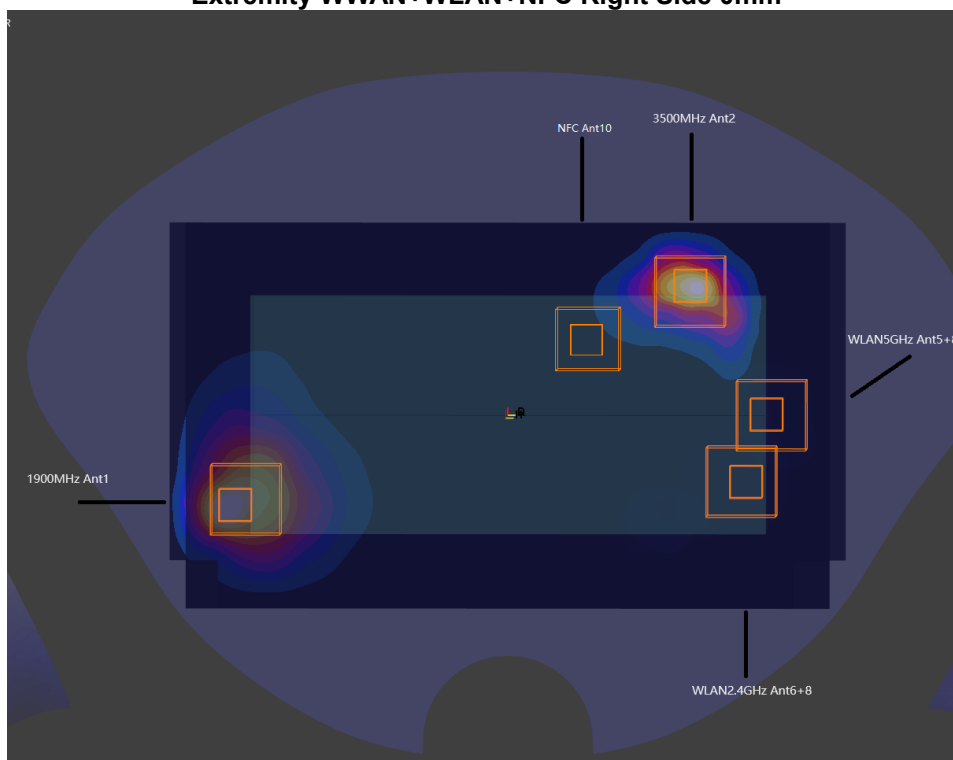
Body-worn WWAN+WLAN Front 13mm



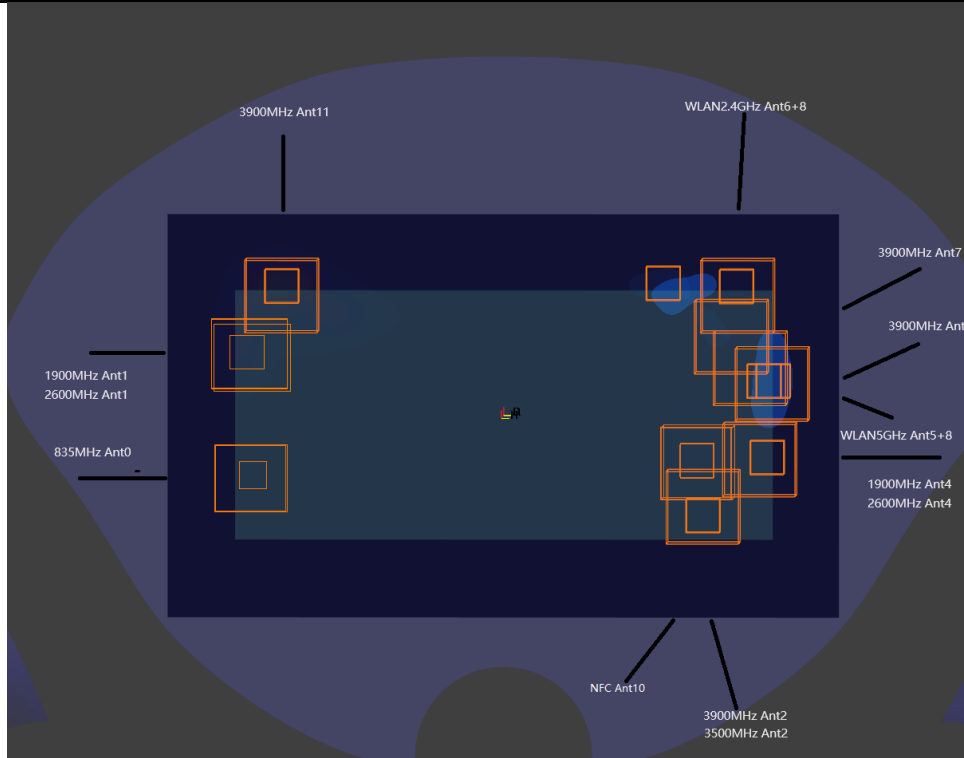
Body-worn WWAN+WLAN Back 16mm



Extremity WWAN+WLAN+NFC Right Side 0mm



Extremity WWAN+WLAN+NFC Front 0mm



Extremity WWAN+WLAN+NFC Back 0mm



<Head>

Case No	Band	Position	SAR (W/kg)		Gap (mm)	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
						X	Y	Z				
Case 1	AG0-Ant0	Right Cheek	0.250	0.25	0mm	57	-267.3	-172.2	65.8	1.73	0.03	Not required
	AG1-Ant2		0.900	1.48	0mm	42.1	-331.4	-171.4				
	WLAN		0.575		0mm							
Case 2	AG0-Ant0	Right Cheek	0.250	0.25	0mm	57	-267.3	-172.2	65.8	1.73	0.03	Not required
	AG1-Ant4		0.905	1.48	0mm	42.1	-331.4	-171.4				
	WLAN		0.575		0mm							
Case 3	AG0-Ant1	Right Cheek	0.371	0.37	0mm	53.6	-252.3	-171.3	77.1	1.85	0.03	Not required
	AG1-Ant2		0.900	1.48	0mm							
	WLAN		0.575		0mm	17.7	-320.5	-171.5				
Case 4	AG0-Ant1	Right Cheek	0.371	0.37	0mm	53.6	-252.3	-171.3	75.7	1.85	0.03	Not required
	AG1-Ant4		0.905	1.48	0mm	4.8	-310.1	-169.8				
	WLAN		0.575		0mm							
Case 5	AG0-Ant1	Right Cheek	0.371	0.37	0mm	53.6	-252.3	-171.3	74.7	1.60	0.03	Not required
	AG1-Ant5		0.651	1.23	0mm	5.7	-309.6	-169.9				
	WLAN		0.575		0mm							
Case 6	AG0-Ant11	Right Cheek	0.226	0.23	0mm	51.2	-251.9	-171.7	76.3	1.70	0.03	Not required
	AG1-Ant2		0.900	1.48	0mm							
	WLAN		0.575		0mm	17.7	-320.5	-171.5				
Case 7	AG0-Ant11	Right Cheek	0.226	0.23	0mm	51.2	-251.9	-171.7	74.5	1.71	0.03	Not required
	AG1-Ant4		0.905	1.48	0mm	4.8	-310.1	-169.8				
	WLAN		0.575		0mm							

Case No	Band	Position	SAR (W/kg)		Gap (mm)	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
						X	Y	Z				
Case 8	AG0-Ant0	Right Tilted	0.129	0.13	0mm	39.8	-264.2	-173.3	65.6	1.71	0.03	Not required
	AG1-Ant4		0.890	1.58	0mm	9.6	-322.4	-170.4				
	WLAN		0.694		0mm							
Case 9	AG0-Ant0	Right Tilted	0.129	0.13	0mm	39.8	-264.2	-173.3	69.4	1.64	0.03	Not required
	AG1-Ant5		0.821	1.52	0mm	3	-322.9	-169.4				
	WLAN		0.694		0mm							
Case 10	AG0-Ant1	Right Tilted	0.169	0.17	0mm	27.4	-257.4	-172	67.3	1.75	0.03	Not required
	AG1-Ant4		0.890	1.58	0mm	5.3	-320.9	-169.9				
	WLAN		0.694		0mm							
Case 11	AG0-Ant1	Right Tilted	0.169	0.17	0mm	27.4	-257.4	-172	69.9	1.68	0.03	Not required
	AG1-Ant5		0.821	1.52	0mm	3	-322.9	-169.4				
	WLAN		0.694		0mm							
Case 12	AG0-Ant11	Right Tilted	0.091	0.09	0mm	2.5	-253.9	-167.5	67.1	1.68	0.03	Not required
	AG1-Ant4		0.890	1.58	0mm	5.3	-320.9	-169.9				
	WLAN		0.694		0mm							
Case 13	AG0-Ant11	Right Tilted	0.091	0.09	0mm	2.5	-253.9	-167.5	69.0	1.61	0.03	Not required
	AG1-Ant5		0.821	1.52	0mm	3	-322.9	-169.4				
	WLAN		0.694		0mm							



Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 14	AG0-Ant0	Left Cheek	0.350	0.35	0mm	55.1	267.5	-172.6	61.2	1.62	0.03	Not required
	AG1-Ant4		0.626	1.27	0mm	5.3	302.8	-168.5				
	WLAN		0.642		0mm							
Case 15	AG0-Ant0	Left Cheek	0.350	0.35	0mm	55.1	267.5	-172.6	66.5	1.69	0.03	Not required
	AG1-Ant5		0.694	1.34	0mm	6.3	312.6	-170.1				
	WLAN		0.642		0mm							
Case 16	AG0-Ant0	Left Cheek	0.350	0.35	0mm	55.1	267.5	-172.6	73.8	1.87	0.03	Not required
	AG1-Ant7		0.874	1.52	0mm							
	WLAN		0.642		0mm	36.4	338.9	-172.4				
Case 17	AG0-Ant1	Left Cheek	0.216	0.22	0mm	70.6	280.9	-169	67.4	1.73	0.03	Not required
	AG1-Ant7		0.874	1.52	0mm							
	WLAN		0.642		0mm	36.4	338.9	-172.4				
Case 18	AG0-Ant11	Left Cheek	0.141	0.14	0mm	55.4	271	-172.1	70.5	1.66	0.03	Not required
	AG1-Ant7		0.874	1.52	0mm							
	WLAN		0.642		0mm	36.4	338.9	-172.4				

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 19	AG0-Ant0	Left Tilted	0.248	0.25	0mm	38.4	261.5	-173.2	70.7	1.79	0.03	Not required
	AG1-Ant4		0.894	1.54	0mm	7.8	325.2	-170.4				
	WLAN		0.650		0mm							
Case 20	AG0-Ant0	Left Tilted	0.248	0.25	0mm	38.4	261.5	-173.2	68.2	1.76	0.03	Not required
	AG1-Ant5		0.866	1.52	0mm	7.2	322.1	-170.2				
	WLAN		0.650		0mm							
Case 21	AG0-Ant1	Left Tilted	0.152	0.15	0mm	13.3	260.8	-170.9	64.6	1.70	0.03	Not required
	AG1-Ant4		0.894	1.54	0mm	7.8	325.2	-170.4				
	WLAN		0.650		0mm							
Case 22	AG0-Ant1	Left Tilted	0.152	0.15	0mm	13.3	260.8	-170.9	66.2	1.67	0.03	Not required
	AG1-Ant5		0.866	1.52	0mm							
	WLAN		0.650		0mm	3.2	326.2	-170				
Case 23	AG0-Ant11	Left Tilted	0.139	0.14	0mm	27	261.7	-173.2	66.4	1.68	0.03	Not required
	AG1-Ant4		0.894	1.54	0mm	7.8	325.2	-170.4				
	WLAN		0.650		0mm							
Case 24	AG0-Ant11	Left Tilted	0.139	0.14	0mm	27	261.7	-173.2	63.6	1.66	0.03	Not required
	AG1-Ant5		0.866	1.52	0mm	7.2	322.1	-170.2				
	WLAN		0.650		0mm							

<Hotspot>

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 41	AG0-Ant1	Front	1.044	1.04	5mm	2	-74.9	-204	145.1	1.81	0.02	Not required
	AG1-Ant2		0.261	0.76	5mm							
	WLAN		0.503		5mm	-6	70	-204				
Case 42	AG0-Ant1	Front	1.044	1.04	5mm	2	-74.9	-204	145.1	1.88	0.02	Not required
	AG1-Ant4		0.330	0.83	5mm							
	WLAN		0.503		5mm	-6	70	-204				
Case 43	AG0-Ant1	Front	1.044	1.04	5mm	2	-74.9	-204	145.1	1.78	0.02	Not required
	AG1-Ant5		0.233	0.74	5mm							
	WLAN		0.503		5mm	-6	70	-204				
Case 80	AG0-Ant1	Front	1.044	0.87	5mm	2	-74.9	-204	145.1	1.74	0.02	Not required
	AG1-Ant7		0.196	0.70	5mm							
	WLAN		0.503		5mm	-6	70	-204				

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 44	AG0-Ant0	Back	1.291	1.29	5mm	-8.5	-73.5	-204	144.0	2.85	0.03	Not required
	AG1-Ant2		0.624	1.56	5mm	4	70	-204				
	WLAN		0.935		5mm							
Case 45	AG0-Ant0	Back	1.291	1.29	5mm	-8.5	-73.5	-204	144.6	2.87	0.03	Not required
	AG1-Ant4		0.646	1.58	5mm							
	WLAN		0.935		5mm	-64	60	-204				
Case 46	AG0-Ant0	Back	1.291	1.29	5mm	-8.5	-73.5	-204	144.6	2.79	0.03	Not required
	AG1-Ant5		0.567	1.50	5mm							
	WLAN		0.935		5mm	-64	60	-204				
Case 47	AG0-Ant0	Back	1.291	1.29	5mm	-8.5	-73.5	-204	144.6	2.64	0.03	Not required
	AG1-Ant7		0.412	1.35	5mm							
	WLAN		0.935		5mm	-64	60	-204				
Case 48	AG0-Ant1	Back	1.241	1.24	5mm	-45	-80	-204	141.3	2.80	0.03	Not required
	AG1-Ant2		0.624	1.56	5mm							
	WLAN		0.935		5mm	-64	60	-204				
Case 49	AG0-Ant1	Back	1.241	1.24	5mm	-45	-80	-204	141.3	2.82	0.03	Not required
	AG1-Ant4		0.646	1.58	5mm							
	WLAN		0.935		5mm	-64	60	-204				
Case 50	AG0-Ant1	Back	1.241	1.24	5mm	-45	-80	-204	141.3	2.74	0.03	Not required
	AG1-Ant5		0.567	1.50	5mm							
	WLAN		0.935		5mm	-64	60	-204				
Case 51	AG0-Ant1	Back	1.241	1.24	5mm	-45	-80	-204	141.3	2.59	0.03	Not required
	AG1-Ant7		0.412	1.35	5mm							
	WLAN		0.935		5mm	-64	60	-204				
Case 52	AG0-Ant11	Back	0.813	0.81	5mm	-64	-79	-204	139.0	2.37	0.03	Not required
	AG1-Ant2		0.624	1.56	5mm							
	WLAN		0.935		5mm	-64	60	-204				
Case 53	AG0-Ant11	Back	0.813	0.81	5mm	-64	-79	-204	139.0	2.39	0.03	Not required
	AG1-Ant4		0.646	1.58	5mm							
	WLAN		0.935		5mm	-64	60	-204				



Case 54	AG0-Ant11	Back	0.813	0.81	5mm	-64	-79	-204	139.0	2.32	0.03	Not required
	AG1-Ant5		0.567	1.50	5mm							
	WLAN		0.935		5mm	-64	60	-204				
Case 55	AG0-Ant11	Back	0.813	0.81	5mm	-64	-79	-204	139.0	2.16	0.02	Not required
	AG1-Ant7		0.412	1.35	5mm							
	WLAN		0.935		5mm	-64	60	-204				

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 57	AG0-Ant0	Right Side	0.134	0.13	5mm	-26.6	0.6	-204	66.5	1.63	0.03	Not required
	AG1-Ant7		0.614	1.49	5mm	-29.8	67	-204				
	WLAN		0.878		5mm							
Case 58	AG0-Ant1	Right Side	0.371	0.37	5mm	-25	64.2	-204	133.3	1.86	0.02	Not required
	AG1-Ant7		0.614	1.49	5mm	-29.8	-69	-204				
	WLAN		0.878		5mm							
Case 59	AG0-Ant11	Right Side	1.240	1.24	5mm	-29.8	67	-204	138.1	2.14	0.02	Not required
	AG1-Ant2		0.017	0.90	5mm	-33.8	-71	-204				
	WLAN		0.878		5mm							
Case 60	AG0-Ant11	Right Side	1.240	1.24	5mm	-29.8	67	-204	101.5	2.25	0.03	Not required
	AG1-Ant4		0.133	1.01	5mm	-32.2	-34.5	-204				
	WLAN		0.878		5mm							
Case 61	AG0-Ant11	Right Side	1.240	1.24	5mm	-29.8	67	-204	136.0	2.23	0.02	Not required
	AG1-Ant5		0.109	0.99	5mm	-29	-69	-204				
	WLAN		0.878		5mm							
Case 62	AG0-Ant11	Right Side	1.240	1.24	5mm	-29.8	67	-204	136.0	2.73	0.03	Not required
	AG1-Ant7		0.614	1.49	5mm	-29.8	-69	-204				
	WLAN		0.878		5mm							



<Body-worn>

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 25	AG0-Ant1	Front	1.197	1.20	5mm	2	-74.9	-204	145.1	1.95	0.02	Not required
	AG1-Ant2		0.429	0.76	5mm							
	WLAN		0.328		5mm	-6	70	-204				
Case 26	AG0-Ant1	Front	1.197	1.20	5mm	2	-74.9	-204	145.1	1.95	0.02	Not required
	AG1-Ant4		0.425	0.75	5mm							
	WLAN		0.328		5mm	-6	70	-204				
Case 27	AG0-Ant1	Front	1.197	1.20	5mm	2	-74.9	-204	145.1	1.86	0.02	Not required
	AG1-Ant5		0.339	0.67	5mm							
	WLAN		0.328		5mm	-6	70	-204				
Case 28	AG0-Ant1	Front	1.197	1.20	5mm	2	-74.9	-204	145.1	1.90	0.02	Not required
	AG1-Ant7		0.379	0.71	5mm							
	WLAN		0.328		5mm	-6	70	-204				

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 29	AG0-Ant0	Back	1.291	1.29	5mm	-8.5	-73.5	-204	144.0	2.88	0.03	Not required
	AG1-Ant2		0.901	1.59	5mm	4	70	-204				
	WLAN		0.687		5mm							
Case 30	AG0-Ant0	Back	1.291	1.29	5mm	-8.5	-73.5	-204	144.6	2.87	0.03	Not required
	AG1-Ant4		0.889	1.58	5mm							
	WLAN		0.687		5mm	-64	60	-204				
Case 31	AG0-Ant0	Back	1.291	1.29	5mm	-8.5	-73.5	-204	144.6	2.85	0.03	Not required
	AG1-Ant5		0.876	1.56	5mm							
	WLAN		0.687		5mm	-64	60	-204				
Case 32	AG0-Ant0	Back	1.291	1.29	5mm	-8.5	-73.5	-204	144.6	2.86	0.03	Not required
	AG1-Ant7		0.883	1.57	5mm							
	WLAN		0.687		5mm	-64	60	-204				
Case 33	AG0-Ant1	Back	1.304	1.30	5mm	-45	-80	-204	141.3	2.89	0.03	Not required
	AG1-Ant2		0.901	1.59	5mm							
	WLAN		0.687		5mm	-64	60	-204				
Case 34	AG0-Ant1	Back	1.304	1.30	5mm	-45	-80	-204	141.3	2.88	0.03	Not required
	AG1-Ant4		0.889	1.58	5mm							
	WLAN		0.687		5mm	-64	60	-204				
Case 35	AG0-Ant1	Back	1.304	1.30	5mm	-45	-80	-204	141.3	2.87	0.03	Not required
	AG1-Ant5		0.876	1.56	5mm							
	WLAN		0.687		5mm	-64	60	-204				
Case 36	AG0-Ant1	Back	1.304	1.30	5mm	-45	-80	-204	141.3	2.87	0.03	Not required
	AG1-Ant7		0.883	1.57	5mm							
	WLAN		0.687		5mm	-64	60	-204				
Case 37	AG0-Ant11	Back	1.232	1.23	5mm	-64	-79	-204	139.0	2.82	0.03	Not required
	AG1-Ant2		0.901	1.59	5mm							
	WLAN		0.687		5mm	-64	60	-204				
Case 38	AG0-Ant11	Back	1.232	1.23	5mm	-64	-79	-204	139.0	2.81	0.03	Not required
	AG1-Ant4		0.889	1.58	5mm							
	WLAN		0.687		5mm	-64	60	-204				



Case 39	AG0-Ant11	Back	1.232	1.23	5mm	-64	-79	-204	139.0	2.80	0.03	Not required
	AG1-Ant5		0.876	1.56	5mm							
	WLAN		0.687		5mm	-64	60	-204				
Case 40	AG0-Ant11	Back	1.232	1.23	5mm	-64	-79	-204	139.0	2.80	0.03	Not required
	AG1-Ant7		0.883	1.57	5mm							
	WLAN		0.687		5mm	-64	60	-204				

Sensor off

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 76	AG0-Ant1	Front	0.771	0.77	13mm	2	-74.9	-204	145.1	1.83	0.02	Not required
	AG1-Ant2		0.580	1.06	13mm							
	WLAN		0.483		13mm	-6	70	-204				
Case 77	AG0-Ant1	Front	0.771	0.77	13mm	2	-74.9	-204	145.1	1.66	0.01	Not required
	AG1-Ant4		0.409	0.89	13mm							
	WLAN		0.483		13mm	-6	70	-204				

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 78	AG0-Ant1	Back	0.763	0.76	16mm	-45	-80	-204	141.3	2.09	0.02	Not required
	AG1-Ant2		0.759	1.32	16mm							
	WLAN		0.563		16mm	-64	60	-204				
Case 79	AG0-Ant1	Back	0.763	0.76	16mm	-45	-80	-204	141.3	1.83	0.02	Not required
	AG1-Ant4		0.504	1.07	16mm							
	WLAN		0.563		16mm	-64	60	-204				



<Extremity>

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 63	AG0-Ant1	Front	2.940	2.94	0mm	3.5	-87	-204	161.3	4.41	0.06	Not required
	AG1-Ant2		0.999	1.47	0mm	-65	59	-204				
	WLAN		0.471		0mm							

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 64	AG0-Ant0	Back	2.173	2.17	0mm	-8.9	-73	-204	141.6	5.00	0.08	Not required
	AG1-Ant2		2.043	2.83	0mm	4	68	-204				
	WLAN		0.782		0mm							
Case 65	AG0-Ant0	Back	2.173	2.17	0mm	-8.9	-73	-204	142.0	5.24	0.08	Not required
	AG1-Ant4		2.283	3.07	0mm							
	WLAN		0.782		0mm	23.4	65.3	-204				
Case 66	AG0-Ant1	Back	3.000	3.00	0mm	-44	-81	-204	156.5	5.83	0.09	Not required
	AG1-Ant2		2.043	2.83	0mm	4	68	-204				
	WLAN		0.782		0mm							
Case 67	AG0-Ant1	Back	3.000	3.00	0mm	-44	-81	-204	158.2	6.07	0.09	Not required
	AG1-Ant4		2.283	3.07	0mm							
	WLAN		0.782		0mm	-10	73.5	-204				
Case 68	AG0-Ant1	Back	3.000	3.00	0mm	-44	-81	-204	158.2	4.63	0.06	Not required
	AG1-Ant5		0.844	1.63	0mm							
	WLAN		0.782		0mm	-10	73.5	-204				
Case 69	AG0-Ant1	Back	3.000	3.00	0mm	-44	-81	-204	152.3	4.56	0.06	Not required
	AG1-Ant7		0.773	1.56	0mm	-64	70	-204				
	WLAN		0.782		0mm							
Case 70	AG0-Ant11	Back	2.249	2.25	0mm	-64	-69	-204	145.0	5.07	0.08	Not required
	AG1-Ant2		2.043	2.83	0mm							
	WLAN		0.782		0mm	-64	76	-204				
Case 71	AG0-Ant11	Back	2.249	2.25	0mm	-64	-69	-204	145.0	5.31	0.08	Not required
	AG1-Ant4		2.283	3.07	0mm							
	WLAN		0.782		0mm	-64	76	-204				

Case No	Band	Position	SAR (W/kg)		Gap	SAR (W/kg) peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					(mm)	X	Y	Z				
Case 72	AG0-Ant11	Right Side	3.049	3.05	0mm	-29	78	-204	156.0	4.00	0.05	Not required
	AG1-Ant2			0.95	0mm							
	WLAN		0.948		0mm	-32.2	-78	-204				
Case 73	AG0-Ant11	Right Side	3.049	3.05	0mm	-29	78	-204	156.0	4.00	0.05	Not required
	AG1-Ant4			0.95	0mm							
	WLAN		0.948		0mm	-32.2	-78	-204				
Case 74	AG0-Ant11	Right Side	3.049	3.05	0mm	-29	78	-204	156.0	4.00	0.05	Not required
	AG1-Ant5			0.95	0mm							
	WLAN		0.948		0mm	-32.2	-78	-204				
Case 75	AG0-Ant11	Right Side	3.049	3.05	0mm	-29	78	-204	156.0	6.01	0.09	Not required
	AG1-Ant7		2.011	2.96	0mm							
	WLAN		0.948		0mm	-32.2	-78	-204				

17.8 Maximum Report SAR And SAR Peak Locations

General Note:

1. The maximum report SAR and SAR Peak Locations corresponding to each position of each frequency band of each antenna in the below tables are as follows.
2. The unit of SAR evaluation is W/kg. The unit of x, y, z with Axis evaluation is mm.

<Head>

Right Cheek								
BT Ant6	SAR (W/kg)	0.125	WLAN2.4G MIMO	SAR (W/kg)	0.303	WLAN5G MIMO	SAR (W/kg)	0.575
	Axis	X18.2 Y-321.4 Z-171.6		Axis	X17.7 Y-320.5 Z-171.5		Axis	X0.2 Y-314 Z-168.7

Right Cheek								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)	0.25						
	Axis	X57 Y-266.5 Z-172.2						
GSM1900	SAR (W/kg)		0.242					
	Axis		X57.2 Y-251.1 Z-170.4					
WCDMA II	SAR (W/kg)		0.367					
	Axis		X57.2 Y-252.3 Z-170.4					
WCDMA V	SAR (W/kg)	0.211						
	Axis	X57 Y-264.9 Z-172.2						
LTE Band 2	SAR (W/kg)		0.371		0.754			
	Axis		X57.2 Y-250.0 Z-170.4		X24.4 Y-329.3 Z-171.6			
LTE Band 7	SAR (W/kg)		0.321		0.605			
	Axis		X53.6 Y-251.2 Z-171.3		X4.8 Y-311.9 Z-169.8			
LTE Band 26	SAR (W/kg)	0.179			0.879			
	Axis	X57 Y-265.2 Z-172.2			X25 Y-329.1 Z-171.7			
LTE Band 71	SAR (W/kg)	0.001			0.727			
	Axis	X 58.3Y -267.2 Z-171.9			X25.7 Y-331.2 Z-171.6			
LTE Band 41	SAR (W/kg)		0.214		0.457			
	Axis		X53.6 Y-251.1 Z-171.3		X4.8 Y-312.3 Z-169.8			
LTE Band 42 Part 27Q	SAR (W/kg)			0.892				
	Axis			X44.2 Y-335.0 Z-171.5				
FR1 n5	SAR (W/kg)	0.074			0.905			
	Axis	X57 Y-267.3 Z-172.2			X25 Y-327.3 Z-171.7			
FR1 n7	SAR (W/kg)		0.205		0.709			
	Axis		X53.6 Y-250.4 Z-171.3		X4.8 Y-310.1 Z-169.8			
FR1 n26	SAR (W/kg)	0.094			0.827			
	Axis	X57 Y-266.1 Z-172.2			X25 Y-327.6 Z-171.7			
FR1 n71	SAR (W/kg)	0.001			0.603			
	Axis	X 58.3Y -266.5 Z-171.9			X25.7 Y-328.5 Z-171.6			
FR1 n41	SAR (W/kg)		0.143					
	Axis		X53.6 Y-252.3 Z-171.3					
FR1 n77	SAR (W/kg)			0.9		0.651	0.256	0.226
	Axis			X42.1 Y-331.4 Z-171.4		X5.7 Y-309.6 Z-169.9	X-4.6 Y-279.4 Z-163.8	X51.2 Y-251.9 Z-171.7



Right Tilted								
BT Ant6	SAR (W/kg)	0.111	WLAN2.4G MIMO	SAR (W/kg)	0.308	WLAN5G MIMO	SAR (W/kg)	0.694
	Axis	X18.7 Y-332.2 Z-171.6		Axis	X14.8 Y-333.4 Z-171.2		Axis	X-4.6 Y-327.6 Z-168

Right Tilted								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)	0.12						
	Axis	X39.8 Y-263.6 Z-173.3						
GSM1900	SAR (W/kg)		0.109					
	Axis		X27.4 Y-253.3 Z-172					
WCDMA II	SAR (W/kg)		0.153					
	Axis		X27.4 Y-252.8 Z-172					
WCDMA V	SAR (W/kg)	0.129						
	Axis	X39.8 Y-263.4 Z-173.3						
LTE Band 2	SAR (W/kg)		0.169		0.704			
	Axis		X27.4 Y-252.5 Z-172		X9.6 Y-322.4 Z-170.4			
LTE Band 7	SAR (W/kg)		0.144		0.866			
	Axis		X30.5 Y-257.4 Z-172		X5.3 Y-321.2 Z-169.9			
LTE Band 26	SAR (W/kg)	0.113			0.853			
	Axis	X39.8 Y-263.9 Z-173.3			X21.7 Y-338.5 Z-171.5			
LTE Band 71	SAR (W/kg)	0.001			0.831			
	Axis	X43.5 Y-261.3 Z-173.4			X23.1 Y-340.5 Z-171.5			
LTE Band 41	SAR (W/kg)		0.043		0.874			
	Axis		X30.5 Y-257.5 Z-172		X5.3 Y-321.7 Z-169.9			
LTE Band 42 Part 27Q	SAR (W/kg)			0.278				
	Axis			X29.0 Y-332.3 Z-171.6				
FR1 n5	SAR (W/kg)	0.049			0.588			
	Axis	X39.8 Y-263.1 Z-173.3			X21.7 Y-337.5 Z-171.5			
FR1 n7	SAR (W/kg)		0.119		0.89			
	Axis		X30.5 Y-256.9 Z-172		X5.3 Y-320.9 Z-169.9			
FR1 n26	SAR (W/kg)	0.062			0.573			
	Axis	X39.8 Y-264.2 Z-173.3			X21.7 Y-339.2 Z-171.5			
FR1 n71	SAR (W/kg)	0.001			0.615			
	Axis	X43.5 Y-260.8 Z-173.4			X23.1 Y-340 Z-171.5			
FR1 n41	SAR (W/kg)		0.075					
	Axis		X30.5 Y-257.2 Z-172					
FR1 n77	SAR (W/kg)			0.415		0.821	0.233	0.091
	Axis			X28.9 Y-330.1 Z-171.8		X3.0 Y-322.9 Z-169.4	X4.8 Y-310.1 Z-169.8	X2.5 Y-253.9 Z-167.5



Left Cheek											
BT Ant6	SAR (W/kg)	0.256		WLAN2.4G MIMO	SAR (W/kg)	0.642		WLAN5G MIMO	SAR (W/kg)	0.519	
	Axis	X23.2 Y335.1 Z-171.5			Axis	X26.6 Y338.1 Z-171.8			Axis	X36.4 Y338.9 Z-172.4	

Left Cheek									
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11	
GSM850	SAR (W/kg)	0.35							
	Axis	X55.1 Y266.9 Z-172.6							
GSM1900	SAR (W/kg)		0.144						
	Axis		X70.6 Y280.6 Z-169						
WCDMA II	SAR (W/kg)		0.216						
	Axis		X70.6 Y280.9 Z-169						
WCDMA V	SAR (W/kg)	0.26							
	Axis	X55.1 Y267.2 Z-172.6							
LTE Band 2	SAR (W/kg)		0.208			0.626			
	Axis		X70.6 Y280.3 Z-169			X11.3 Y316.3 Z-170.6			
LTE Band 7	SAR (W/kg)		0.186			0.577			
	Axis		X52.0 Y251.6 Z-171.7			X6.8 Y323.9 Z-170.2			
LTE Band 26	SAR (W/kg)	0.297				0.276			
	Axis	X55.1 Y267.4 Z-172.6				X11.3 Y317.4 Z-170.6			
LTE Band 71	SAR (W/kg)	0.082				0.319			
	Axis	X58.1 Y264.1 Z-171.7				X0.5 Y298.1 Z-166.5			
LTE Band 41	SAR (W/kg)		0.112			0.37			
	Axis		X52.0 Y251.9 Z-171.7			X6.8 Y323.8 Z-170.2			
LTE Band 42 Part 27Q	SAR (W/kg)			0.241					
	Axis			X0.4 Y280 Z-165.4					
FR1 n5	SAR (W/kg)	0.112				0.288			
	Axis	X55.1 Y266.7 Z-172.6				X5.3 Y302.8 Z-168.5			
FR1 n7	SAR (W/kg)		0.151			0.608			
	Axis		X52.0 Y251.4 Z-171.7			X6.8 Y323.5 Z-170.2			
FR1 n26	SAR (W/kg)	0.143				0.293			
	Axis	X55.1 Y267.5 Z-172.6				X11.3 Y316.8 Z-170.6			
FR1 n71	SAR (W/kg)	0.071				0.206			
	Axis	X58.1 Y263.2 Z-171.7				X0.5 Y297.2 Z-166.5			
FR1 n41	SAR (W/kg)		0.119						
	Axis		X52.0 Y252.1 Z-171.7						
FR1 n77	SAR (W/kg)			0.198			0.694	0.874	0.141
	Axis			X-1.6 Y284.5 Z-165.6			X6.3 Y312.6 Z-170.1	X32.4 Y338.2 Z-171.2	X55.4 Y271 Z-172.1



Left Tilted											
BT Ant6	SAR (W/kg)	0.199		WLAN2.4G MIMO	SAR (W/kg)	0.469		WLAN5G MIMO	SAR (W/kg)	0.65	
	Axis	X18.3 Y332.5 Z-171.2			Axis	X19 Y332.8 Z-171.4			Axis	X3.2 Y326.2 Z-170	

Left Tilted								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)	0.134						
	Axis	X38.4 Y261.1 Z-173.2						
GSM1900	SAR (W/kg)	0.084						
	Axis	X18.5 Y255.9 Z-171.6						
WCDMA II	SAR (W/kg)	0.136						
	Axis	X18.5 Y256.4 Z-171.6						
WCDMA V	SAR (W/kg)	0.248						
	Axis	X38.4 Y261.2 Z-173.2						
LTE Band 2	SAR (W/kg)	0.152			0.894			
	Axis	X18.5 Y255.8 Z-171.6			X11.7 Y332.9 Z-170.7			
LTE Band 7	SAR (W/kg)	0.132			0.653			
	Axis	X13.3 Y251.4 Z-170.9			X7.8 Y335.7 Z-170.4			
LTE Band 26	SAR (W/kg)	0.148			0.534			
	Axis	X38.4 Y261.5 Z-173.2			X-0.5 Y334.7 Z-167.4			
LTE Band 71	SAR (W/kg)	0.001			0.409			
	Axis	X47.3 Y256.8 Z-173.3			X-1.5 Y326.9 Z-165.9			
LTE Band 41	SAR (W/kg)	0.064			0.457			
	Axis	X13.3 Y251.6 Z-170.9			X7.8 Y325.9 Z-170.4			
LTE Band 42 Part 27Q	SAR (W/kg)			0.162				
	Axis			X0.5 Y282.2 Z-165.8				
FR1 n5	SAR (W/kg)	0.067			0.28			
	Axis	X38.4 Y260.5 Z-173.2			X-0.5 Y324.6 Z-167.4			
FR1 n7	SAR (W/kg)	0.075			0.692			
	Axis	X13.3 Y260.8 Z-170.9			X7.8 Y325.2 Z-170.4			
FR1 n26	SAR (W/kg)	0.085			0.27			
	Axis	X38.4 Y261.3 Z-173.2			X-0.5 Y324.6 Z-167.4			
FR1 n71	SAR (W/kg)	0.001			0.252			
	Axis	X47.3 Y256.5 Z-173.3			X-1.5 Y326.7 Z-165.9			
FR1 n41	SAR (W/kg)	0.061						
	Axis	X13.3 Y251.7 Z-170.9						
FR1 n77	SAR (W/kg)			0.169		0.866	0.655	0.139
	Axis			X-0.8 Y284 Z-165.8		X7.2 Y322.1 Z-170.2	X6.8 Y313.5 Z-170.2	X27 Y261.7 Z-171.9



<Hotspot>

Front								
BT Ant6	SAR (W/kg)	0.117	WLAN2.4G MIMO	SAR (W/kg)	0.503	WLAN5G MIMO	SAR (W/kg)	0.359
	Axis	X-3 Y75 Z-204		Axis	X-6 Y70 Z-204		Axis	X-31 Y83 Z-204

Front								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)	0.569						
	Axis	X-68.5 Y-74.5 Z-204						
GSM1900	SAR (W/kg)		1.044					
	Axis		X-1 Y-83.2 Z-204					
WCDMA II	SAR (W/kg)		0.848					
	Axis		X-1 Y-83.1 Z-204					
WCDMA V	SAR (W/kg)	0.673						
	Axis	X-68.5 Y-74.8 Z-204						
LTE Band 2	SAR (W/kg)		0.767		0.2			
	Axis		X-1 Y-82.5 Z-204		X-26.5 Y72 Z-204			
LTE Band 7	SAR (W/kg)		0.869		0.254			
	Axis		X2 Y-75.8 Z-204		X-34 Y89.5 Z-204			
LTE Band 26	SAR (W/kg)	0.38			0.33			
	Axis	X-68.5 Y-74.9 Z-204			X-52 Y73.9 Z-204			
LTE Band 71	SAR (W/kg)	0.289			0.253			
	Axis	X-70 Y-76.2 Z-204			X-53.5 Y73.7 Z-204			
LTE Band 41	SAR (W/kg)		0.806		0.329			
	Axis		X2 Y-75.5 Z-204		X-34 Y89.9 Z-204			
LTE Band 42 Part 27Q	SAR (W/kg)			0.261				
	Axis			X-65 Y61 Z-204				
FR1 n5	SAR (W/kg)	0.423			0.28			
	Axis	X-68.5 Y-75 Z-204			X-52 Y73.5 Z-204			
FR1 n7	SAR (W/kg)		0.8		0.288			
	Axis		X2 Y-76 Z-204		X-34 Y89 Z-204			
FR1 n26	SAR (W/kg)	0.45			0.289			
	Axis	X-68.5 Y-75.2 Z-204			X-52 Y74.2 Z-204			
FR1 n71	SAR (W/kg)	0.311			0.173			
	Axis	X-70 Y-75 Z-204			X-53.5 Y73.5 Z-204			
FR1 n41	SAR (W/kg)		0.783					
	Axis		X2 Y-74.9 Z-204					
FR1 n77	SAR (W/kg)			0.207		0.233	0.196	0.476
	Axis			X-65 Y61 Z-204		X-24 Y80 Z-204	X7 Y75 Z-204	X6 Y-68 Z-204



Back								
BT Ant6	SAR (W/kg)	0.17	WLAN2.4G MIMO	SAR (W/kg)	0.935	WLAN5G MIMO	SAR (W/kg)	0.933
	Axis	X-52 Y76 Z-204		Axis	X-64 Y60 Z-204		Axis	X-34 Y81 Z-204

Back								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)	1.179						
	Axis	X-8.5 Y-74 Z-204						
GSM1900	SAR (W/kg)		1.241					
	Axis		X-38.5 Y-84.1 Z-204					
WCDMA II	SAR (W/kg)		0.984					
	Axis		X-38.5 Y-83.5 Z-204					
WCDMA V	SAR (W/kg)	1.291						
	Axis	X-8.5 Y-73.5 Z-204						
LTE Band 2	SAR (W/kg)		0.899		0.616			
	Axis		X-38.5 Y-82.5 Z-204		X-10 Y73.5 Z-204			
LTE Band 7	SAR (W/kg)		0.93		0.466			
	Axis		X-45 Y-80.5 Z-204		X-15 Y80.5 Z-204			
LTE Band 26	SAR (W/kg)	1.273			0.516			
	Axis	X-8.5 Y-74.2 Z-204			X-10 Y73.8 Z-204			
LTE Band 71	SAR (W/kg)	0.498			0.646			
	Axis	X-8.5 Y-76.2 Z-204			X-8.5 Y74.1 Z-204			
LTE Band 41	SAR (W/kg)		1.12		0.486			
	Axis		X-45 Y-81.1 Z-204		X-15 Y81.1 Z-204			
LTE Band 42 Part 27Q	SAR (W/kg)			0.624				
	Axis			X4 Y70 Z-204				
FR1 n5	SAR (W/kg)	0.771			0.592			
	Axis	X-8.5 Y-75 Z-204			X-10 Y73.5 Z-204			
FR1 n7	SAR (W/kg)		0.812		0.555			
	Axis		X-45 Y-80 Z-204		X-15 Y80 Z-204			
FR1 n26	SAR (W/kg)	0.819			0.591			
	Axis	X-8.5 Y-75.5 Z-204			X-10 Y73.6 Z-204			
FR1 n71	SAR (W/kg)	0.56			0.538			
	Axis	X-8.5 Y-75 Z-204			X-8.5 Y73.5 Z-204			
FR1 n41	SAR (W/kg)		1.008					
	Axis		X-45 Y-80.9 Z-204					
FR1 n77	SAR (W/kg)			0.421		0.567	0.412	0.813
	Axis			X5 Y71 Z-204		X-34 Y78 Z-204	X-65 Y70 Z-204	X-64 Y-69 Z-204



Right Side								
BT Ant6	SAR (W/kg)	0.078	WLAN2.4G MIMO	SAR (W/kg)	0.878	WLAN5G MIMO	SAR (W/kg)	0.725
	Axis	X-22.6 Y-78 Z-204		Axis	X-32.2 Y-76 Z-204		Axis	X-25 Y-79 Z-204

Right Side								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)	0.116						
	Axis	X-27.4 Y-3.5 Z-204						
GSM1900	SAR (W/kg)		0.371					
	Axis		X-38.6 Y73.6 Z-204					
WCDMA II	SAR (W/kg)		0.371					
	Axis		X-38.6 Y74.1 Z-204					
WCDMA V	SAR (W/kg)	0.134						
	Axis	X-27.4 Y-3.1 Z-204						
LTE Band 2	SAR (W/kg)		0.311		0.042			
	Axis		X-38.6 Y72.5 Z-204		X-32.2 Y-34.5 Z-204			
LTE Band 7	SAR (W/kg)		0.294		0.034			
	Axis		X-25 Y65 Z-204		X-31.4 Y-81 Z-204			
LTE Band 26	SAR (W/kg)	0.126			0.099			
	Axis	X-27.4 Y-3.3 Z-204			X-27.4 Y-38.5 Z-204			
LTE Band 71	SAR (W/kg)	0.065			0.133			
	Axis	X-26.6 Y0.6 Z-204			X-26.6 Y-36.5 Z-204			
LTE Band 41	SAR (W/kg)		0.241		0.04			
	Axis		X-25 Y64.5 Z-204		X-31.4 Y-80.5 Z-204			
LTE Band 42 Part 27Q	SAR (W/kg)			0.017				
	Axis			X-33.8 Y-71 Z-204				
FR1 n5	SAR (W/kg)	0.076			0.002			
	Axis	X-27.4 Y-6 Z-204			X-27.4 Y-37.5 Z-204			
FR1 n7	SAR (W/kg)		0.314		0.035			
	Axis		X-25 Y66.1 Z-204		X-31.4 Y-78 Z-204			
FR1 n26	SAR (W/kg)	0.081			0.001			
	Axis	X-27.4 Y-6.3 Z-204			X-27.4 Y-38.6 Z-204			
FR1 n71	SAR (W/kg)	0.066			0.092			
	Axis	X-26.6 Y0.2 Z-204			X-26.6 Y-36 Z-204			
FR1 n41	SAR (W/kg)		0.283					
	Axis		X-25 Y64.2 Z-204					
FR1 n77	SAR (W/kg)			0.01		0.109	0.614	1.24
	Axis			X-33.8 Y-72 Z-204		X-29 Y-69 Z-204	X-29.8 Y-69 Z-204	X-29.8 Y67 Z-204

<Body-worn>

Front								
BT Ant6	SAR (W/kg)	0.117	WLAN2.4G MIMO	SAR (W/kg)	0.328	WLAN5G MIMO	SAR (W/kg)	0.314
	Axis	X-3 Y75 Z-204		Axis	X-6 Y70 Z-204		Axis	X-31 Y83 Z-204
Front								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)							
	Axis							
GSM1900	SAR (W/kg)		1.044					
	Axis		X-1 Y-83.2 Z-204					
WCDMA II	SAR (W/kg)		1.084					
	Axis		X-1 Y-83.1 Z-204					
WCDMA V	SAR (W/kg)							
	Axis							
LTE Band 2	SAR (W/kg)		1.131		0.273			
	Axis		X-1 Y-82.5 Z-204		X-26.5 Y72 Z-204			
LTE Band 7	SAR (W/kg)		1.197		0.41			
	Axis		X2 Y-75.8 Z-204		X-34 Y89.5 Z-204			
LTE Band 26	SAR (W/kg)				0.425			
	Axis				X-52 Y73.9 Z-204			
LTE Band 71	SAR (W/kg)				0.253			
	Axis				X-53.5 Y73.7 Z-204			
LTE Band 41	SAR (W/kg)		0.913		0.425			
	Axis		X2 Y-75.5 Z-204		X-34 Y89.9 Z-204			
LTE Band 42 Part 27Q	SAR (W/kg)			0.386				
	Axis			X-65 Y61 Z-204				
FR1 n5	SAR (W/kg)				0.28			
	Axis				X-52 Y73.5 Z-204			
FR1 n7	SAR (W/kg)		1.101		0.416			
	Axis		X2 Y-76 Z-204		X-34 Y89 Z-204			
FR1 n26	SAR (W/kg)				0.289			
	Axis				X-52 Y74.2 Z-204			
FR1 n71	SAR (W/kg)				0.173			
	Axis				X-53.5 Y73.5 Z-204			
FR1 n41	SAR (W/kg)		0.983					
	Axis		X2 Y-74.9 Z-204					
FR1 n77	SAR (W/kg)			0.429		0.339	0.379	0.722
	Axis			X-65 Y61 Z-204		X-24 Y80 Z-204	X7 Y75 Z-204	X6 Y-68 Z-204



Back								
BT Ant6	SAR (W/kg)	0.17	WLAN2.4G MIMO	SAR (W/kg)	0.657	WLAN5G MIMO	SAR (W/kg)	0.687
	Axis	X-52 Y76 Z-204		Axis	X-64 Y60 Z-204		Axis	X-34 Y81 Z-204

Back								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)	1.179						
	Axis	X-8.5 Y-74 Z-204						
GSM1900	SAR (W/kg)		1.241					
	Axis		X-38.5 Y-84.1 Z-204					
WCDMA II	SAR (W/kg)		1.257					
	Axis		X-38.5 Y-83.5 Z-204					
WCDMA V	SAR (W/kg)	1.291						
	Axis	X-8.5 Y-73.5 Z-204						
LTE Band 2	SAR (W/kg)		1.248		0.874			
	Axis		X-38.5 Y-82.5 Z-204		X-10 Y73.5 Z-204			
LTE Band 7	SAR (W/kg)		1.304		0.882			
	Axis		X-45 Y-80.5 Z-204		X-15 Y80.5 Z-204			
LTE Band 26	SAR (W/kg)	1.273			0.665			
	Axis	X-8.5 Y-74.2 Z-204			X-10 Y73.8 Z-204			
LTE Band 71	SAR (W/kg)	0.498			0.646			
	Axis	X-8.5 Y-76.2 Z-204			X-8.5 Y74.1 Z-204			
LTE Band 41	SAR (W/kg)		1.267		0.889			
	Axis		X-45 Y-81.1 Z-204		X-15 Y81.1 Z-204			
LTE Band 42 Part 27Q	SAR (W/kg)			0.901				
	Axis			X4 Y70 Z-204				
FR1 n5	SAR (W/kg)	0.771			0.592			
	Axis	X-8.5 Y-75 Z-204			X-10 Y73.5 Z-204			
FR1 n7	SAR (W/kg)		1.126		0.802			
	Axis		X-45 Y-80 Z-204		X-15 Y80 Z-204			
FR1 n26	SAR (W/kg)	0.819			0.591			
	Axis	X-8.5 Y-75.5 Z-204			X-10 Y73.6 Z-204			
FR1 n71	SAR (W/kg)	0.56			0.538			
	Axis	X-8.5 Y-75 Z-204			X-8.5 Y73.5 Z-204			
FR1 n41	SAR (W/kg)		1.264					
	Axis		X-45 Y-80.9 Z-204					
FR1 n77	SAR (W/kg)			0.876		0.876	0.883	1.232
	Axis			X5 Y71 Z-204		X-34 Y78 Z-204	X-65 Y70 Z-204	X-64 Y-79 Z-204



Sensor off

Front						
WLAN2.4G MIMO	SAR (W/kg)	0.483		WLAN5G MIMO	SAR (W/kg)	0.563
	Axis	X-6 Y70 Z-204			Axis	X-31 Y83 Z-204

Front								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)							
	Axis							
GSM1900	SAR (W/kg)		0.455					
	Axis		X-1 Y-83.2 Z-204					
WCDMA II	SAR (W/kg)		0.771					
	Axis		X-1 Y-83.1 Z-204					
WCDMA V	SAR (W/kg)							
	Axis							
LTE Band 2	SAR (W/kg)		0.694		0.398			
	Axis		X-1 Y-82.5 Z-204		X-26.5 Y72 Z-204			
LTE Band 7	SAR (W/kg)		0.549		0.35			
	Axis		X2 Y-75.8 Z-204		X-34 Y89.5 Z-204			
LTE Band 26	SAR (W/kg)				N/A			
	Axis				N/A			
LTE Band 71	SAR (W/kg)				N/A			
	Axis				N/A			
LTE Band 41	SAR (W/kg)		0.446		0.444			
	Axis		X2 Y-75.5 Z-204		X-34 Y89.9 Z-204			
LTE Band 42 Part 27Q	SAR (W/kg)			0.386				
	Axis			X-65 Y61 Z-204				
FR1 n5	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n7	SAR (W/kg)		0.29		0.364			
	Axis		X2 Y-76 Z-204		X-34 Y89 Z-204			
FR1 n26	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n71	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n41	SAR (W/kg)		0.362					
	Axis		X2 Y-74.9 Z-204					
FR1 n77	SAR (W/kg)			0.58				
	Axis			X-65 Y61 Z-204				



Back							
WLAN2.4G MIMO	SAR (W/kg)	0.49		WLAN5G MIMO	SAR (W/kg)	0.563	
	Axis	X-64 Y60 Z-204			Axis	X-34 Y81 Z-204	

Back								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)							
	Axis							
GSM1900	SAR (W/kg)		0.419					
	Axis		X-38.5 Y-84.1 Z-204					
WCDMA II	SAR (W/kg)		0.763					
	Axis		X-38.5 Y-83.5 Z-204					
WCDMA V	SAR (W/kg)							
	Axis							
LTE Band 2	SAR (W/kg)		0.643		0.504			
	Axis		X-38.5 Y-82.5 Z-204		X-10 Y73.5 Z-204			
LTE Band 7	SAR (W/kg)		0.342		0.421			
	Axis		X-45 Y-80.5 Z-204		X-15 Y80.5 Z-204			
LTE Band 26	SAR (W/kg)				N/A			
	Axis				N/A			
LTE Band 71	SAR (W/kg)				N/A			
	Axis				N/A			
LTE Band 41	SAR (W/kg)		0.305		0.444			
	Axis		X-45 Y-81.1 Z-204		X-15 Y81.1 Z-204			
LTE Band 42 Part 27Q	SAR (W/kg)			0.528				
	Axis			X4 Y70 Z-204				
FR1 n5	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n7	SAR (W/kg)		0.216		0.387			
	Axis		X-45 Y-80 Z-204		X-15 Y80 Z-204			
FR1 n26	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n71	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n41	SAR (W/kg)		0.263					
	Axis		X-45 Y-80.9 Z-204					
FR1 n77	SAR (W/kg)			0.759				
	Axis			X5 Y71 Z-204				



<Extremity>

Front								
WLAN2.4G MIMO	SAR (W/kg)	0	WLAN5G MIMO	SAR (W/kg)	0.47	NFC	SAR (W/kg)	0.001
	Axis	X-5 Y75 Z-204		Axis	X-25 Y81 Z-204		Axis	X 7 Y 81.2 Z -204

Front								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)							
	Axis							
GSM1900	SAR (W/kg)		N/A					
	Axis		N/A					
WCDMA II	SAR (W/kg)		2.94					
	Axis		X3.5 Y-88.2 Z-204					
WCDMA V	SAR (W/kg)							
	Axis							
LTE Band 2	SAR (W/kg)		2.865					
	Axis		X3.5 Y-87 Z-204					
LTE Band 7	SAR (W/kg)		N/A					
	Axis		N/A					
LTE Band 26	SAR (W/kg)							
	Axis							
LTE Band 71	SAR (W/kg)							
	Axis							
LTE Band 41	SAR (W/kg)		N/A					
	Axis		N/A					
LTE Band 42 Part 27Q	SAR (W/kg)			0.999				
	Axis			X-65 Y59 Z-204				
FR1 n5	SAR (W/kg)							
	Axis							
FR1 n7	SAR (W/kg)		N/A					
	Axis		N/A					
FR1 n26	SAR (W/kg)							
	Axis							
FR1 n71	SAR (W/kg)							
	Axis							
FR1 n41	SAR (W/kg)		N/A					
	Axis		N/A					
FR1 n77	SAR (W/kg)			N/A				
	Axis			N/A				



Back								
WLAN2.4G MIMO	SAR (W/kg)	0.355	WLAN5G MIMO	SAR (W/kg)	0.738	NFC	SAR (W/kg)	0.044
	Axis	X-64 Y76 Z-204		Axis	X-35 Y80 Z-204		Axis	X 23.4 Y 65.3 Z -204

Back								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)	N/A						
	Axis	N/A						
GSM1900	SAR (W/kg)		2.934					
	Axis		X-38.5 Y-84.5 Z-204					
WCDMA II	SAR (W/kg)		3					
	Axis		X-38.5 Y-84.2 Z-204					
WCDMA V	SAR (W/kg)	2.173						
	Axis	X-8.9 Y-74.1 Z-204						
LTE Band 2	SAR (W/kg)		2.967		2.283			
	Axis		X-38.5 Y-83.5 Z-204		X-10 Y73.5 Z-204			
LTE Band 7	SAR (W/kg)		N/A		N/A			
	Axis		N/A		N/A			
LTE Band 26	SAR (W/kg)	1.974			N/A			
	Axis	X-8.9 Y-73 Z-204			N/A			
LTE Band 71	SAR (W/kg)	N/A			N/A			
	Axis	N/A			N/A			
LTE Band 41	SAR (W/kg)		1.974		N/A			
	Axis		X-44 Y-82.2 Z-204		N/A			
LTE Band 42 Part 27Q	SAR (W/kg)			2.031				
	Axis			X4 Y68 Z-204				
FR1 n5	SAR (W/kg)	N/A			N/A			
	Axis	N/A			N/A			
FR1 n7	SAR (W/kg)		N/A		1.704			
	Axis		N/A		X-15 Y79 Z-204			
FR1 n26	SAR (W/kg)	N/A			N/A			
	Axis	N/A			N/A			
FR1 n71	SAR (W/kg)	N/A			N/A			
	Axis	N/A			N/A			
FR1 n41	SAR (W/kg)		2.549					
	Axis		X-44 Y-81 Z-204					
FR1 n77	SAR (W/kg)			2.043		0.844	0.773	2.249
	Axis			X4 Y68 Z-204		X-35 Y79 Z-204	X-64 Y70 Z-204	X-64 Y-69 Z-204



Right Side								
WLAN2.4G MIMO	SAR (W/kg)	0.735	WLAN5G MIMO	SAR (W/kg)	0.947	NFC	SAR (W/kg)	0.001
	Axis	X-32.2 Y-78 Z-204		Axis	X-25 Y-79 Z-204		Axis	X -28.6 Y -81.5 Z -204

Right Side								
Band		Ant0	Ant1	Ant2	Ant4	Ant5	Ant7	Ant11
GSM850	SAR (W/kg)							
	Axis							
GSM1900	SAR (W/kg)							
	Axis							
WCDMA II	SAR (W/kg)							
	Axis							
WCDMA V	SAR (W/kg)							
	Axis							
LTE Band 2	SAR (W/kg)				N/A			
	Axis				N/A			
LTE Band 7	SAR (W/kg)				N/A			
	Axis				N/A			
LTE Band 26	SAR (W/kg)				N/A			
	Axis				N/A			
LTE Band 71	SAR (W/kg)				N/A			
	Axis				N/A			
LTE Band 41	SAR (W/kg)				N/A			
	Axis				N/A			
LTE Band 42 Part 27Q	SAR (W/kg)			N/A				
	Axis			N/A				
FR1 n5	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n7	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n26	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n71	SAR (W/kg)				N/A			
	Axis				N/A			
FR1 n41	SAR (W/kg)							
	Axis							
FR1 n77	SAR (W/kg)			N/A		N/A	2.011	3.049
	Axis			N/A		N/A	X-28.2 Y-78 Z-204	X-29 Y78 Z-204

18. Supplemental Tuner Tests Results

General Note:

1. This device implements impedance tuner (384 states) antenna tuning techniques in the LTE Band 5/71 and 5GNR n5/71 for ANTO.
2. Per 2019, April TCBC Workshop titled "RF Exposure Procedures", the following test procedure was followed to demonstrate that the SAR results in this report represent the appropriate SAR test conditions.
 - 1) SAR is measured according to required procedures with dynamic tuner active allowing device to automatically tune. Auto-tune state determined by device during normal SAR measurement verified and listed alongside the reported SAR results.
 - 2) Total number tuner states divided evenly among each supported band / air interface and exposure condition combination.
 - 3) The tuner state was established remotely through Wi-Fi so that the device is not moved for the entire series of single point SAR for the tuner states in each combination (band, mode, exposure conditions).
 - 4) Single point measurements performed at the peak SAR location of the highest measured SAR configuration for each combination. SAR probe remains stationary throughout the entire series of single point measurements for each combination.
 - 5) If any single point SAR measurement result is > 1.2 W/kg for 1gSAR (or > 3.0 W/kg for 10gSAR) for a band/exposure condition combination set, all supported tuner states are evaluated with single point SAR measurements for the combination.
3. The above test procedures were followed to demonstrate that the SAR results in Section 16 represented the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR will be measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements will be evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values.
4. To evaluate all of the tuner states, the 384 tuner states for ANTO is divided evenly among band, mode and exposure combinations so that at least one single point SAR measurement is measured in each configuration. Single point time-sweep measurements will be performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state will be established remotely so that the device is not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe will remain stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg or 10g SAR was > 3.0 W/kg for a particular band / mode / exposure condition, point SAR measurements were made for all 384 tuner states.
5. According to KDB 648474 D04 v01r03, in order to reduce the number of SAR tests required to demonstrate compliance for the numerous tuning states, certain SAR screening procedures were considered to identify the higher SAR between body-worn and hotspot scenarios that need normally required SAR measurements and allow SAR test reduction for the lower SAR conditions.
6. According to KDB 648474 D04 v01r03, this design will provide the highest power at different user scenarios and would not influence to the antenna characteristics other than impedance matching. The additional tuner hardware has no influence to the antenna characteristics, other than impedance matching.
7. The operational decryption contains more information about the design and implementation of the dynamic antenna tuning.

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19. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

20. References

- [1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”
- [2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992
- [3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [6] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.
- [7] FCC KDB 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.
- [8] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.
- [9] FCC KDB 616217 D04 v01r02, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, Oct 2015
- [10] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015
- [11] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015
- [12] FCC KDB 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015
- [13] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.
- [14] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

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