APPENDIX D: MULTI-TX AND ANTENNA SAR CONSIDERATIONS

D.1 Introduction

The following procedures adopted from FCC KDB Publication 447498 D01v06 are applicable to devices with built-in unlicensed transmitters such as 802.11 and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

D.2 Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D01v06 4.3.2 and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6 W/kg. The different test positions in an exposure condition may be considered collectively to determine SAR test exclusion according to the sum of 1g or 10g SAR.

Per FCC KDB Publication 941225 D06v02r01, the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR ("-").

This device is enabled with Qualcomm® Smart Transmit Gen2 with pre-defined sub6 antenna groups (AG0 and AG1). Simultaneous transmission analysis is performed per antenna groups. Appendix D contains analysis to demonstrate the AG0 and AG1 are operate mutually exclusive. Additional analysis is provided below to show compliance between AG0 and BT/WLAN/NFC/UWB and AG1 BT/WLAN/NFC/UWB.

When operating in the same antenna group, Qualcomm Smart Transmit algorithm in WWAN directly adds the time-averaged RF exposure from 4G 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 operations within an antenna group is demonstrated in the Part 2 Report during algorithm validation.

D.3 Sub6 Antenna Groups

The 2nd generation of Smart Transmit (GEN2) operates based on pre-defined sub6 antenna groups (AG) and mmW module groups (MG). 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 either of below conditions for all exposure scenarios:

a) 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. This condition must be demonstrated for all antenna combinations of sub6 AGs.

(or)

b) Every antenna from each sub6 AG meets SPLSR criteria (Section 4.3.2(c) in FCC KDB 447498 D01) with every antenna from another sub6 AG. This criteria must be demonstrated for all antenna combinations for each pair of AGs.

This device supports two sub6 AG: AG0 and AG1, with AG0 having 4 antennas (A, B, C, D) and AG1 having 4 antennas (E, F, G), and two WIFI/BT antennas outside of Smart Transmit. The conditions are verified through the following criterias:

i) (SAR1 + SAR2 criteria): If SPLSR criteria is not used, then the highest reported SAR at P_{limit} (or P_{max} when $P_{limit} > P_{max}$) 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 P_{limit} (or P_{max} when $P_{limit} > P_{max}$) 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 Ant 1 + WIFI/BT Ant 2} ≤ 1.6 (for 1g, or 4.0 for 10g).

ii) (SPLSR criteria): For each antenna, obtain the highest reported SAR value at P_{limit} 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:

SPLSR criteria should be met for all antenna pair combinations of AG0 and AG1: {antenna (A, B, C, D) in AG0; antenna (E, F, G) in AG1. As it can be seen, these include all combinations of antenna groups, antennas, and frequency bands.

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 + WIFI/BT Ant 1 + WIFI/BT Ant 2} ≤ 1.6 and {max.SAR.AG1 + WIFI/BT Ant 1 + WIFI/BT Ant 2} ≤ 1.6 for compliance demonstration (for 1g, or 4.0 for 10g).

If SPLSR criteria evaluation and analysis is needed to determine compliance for a certain DSI configuration, SPLSR is performed by taking the highest reported SAR for each of the supported technologies and bands per antenna, along with the peak SAR locations. Per Qualcomm guidance, only Y-axis coordinates are recorded in the analysis for calculation simplicity (assumes all 0mm of separation on the x-axis). Peak locations are documented in Section D.13 below for each DSI configuration.

For this device, AG0 is located at the bottom of the device along with the BT/WIFI Antenna #2. Per April 2022 TCB Workshop Notes, AG0 was summed algebraically with the BT/WIFI Antenna #2 for the purposes of hybrid SPLSR combination, identified in this report as the “bottom set”. Similarly, AG1 and the BT/WIFI Antenna #1 are located at the top of the device and were summed algebraically together as the “top set” for hybrid SPLSR calculation. The minimum distance when considering all transmissions between the top set and bottom set groups was considered when calculating the SPLSR. The sum of the transmissions within set are less than the SAR limit (for ex: AG0+BT/WIFI Ant 2 < 1.6 W/kg (1g) for bottom set, and AG1+BT/WIFI Ant 1 < 1.6 W/kg (1g) for top set).

For bottom set (AG0+BT/WIFI Ant 2), Y_max coordinate represents the worst case hotspot location that is closest to the top set (AG1+BT/WIFI Ant 1). Similarly, for top set (AG1+BT/WIFI Ant 1), Y_min coordinate represents the worst case hotspot location that is closest to the bottom set (AG0+BT/WIFI Ant 2).

The following formula is used to calculate the SPLSR between the bottom and top sets for each exposure configuration:

$$SPLSR = \frac{(Max\ SAR\ bottom\ set + Max\ SAR\ top\ set)^{1.5}}{|Y_{max} - Y_{min}|}$$

D.4 Head (DSI = 5) SAR Antenna Group Analysis

Table D-1
DSI=5 Held-to-ear AG0 Highest Reported SAR

AG0 SAR (W/kg)							
	Configuration	A	A+B	B	C	D	Max
Head SAR	Right Cheek	0.181	0.224	0.141	0.000	0.004	0.224
	Right Tilt	0.098	0.111	0.114	0.003	0.004	0.114
	Left Cheek	0.149	0.168	0.114	0.000	0.000	0.168
	Left Tilt	0.076	0.098	0.060	0.005	0.000	0.098

Table D-2
DSI=5 Held-to-ear AG1 Highest Reported SAR

AG1 SAR (W/kg)					
	Configuration	E	F	G	Max
Head SAR	Right Cheek	0.370	0.635	0.037	0.635
	Right Tilt	0.370	0.770	0.049	0.770
	Left Cheek	0.959	0.502	0.056	0.959
	Left Tilt	0.893	0.794	0.070	0.893

Table D-3
Simultaneous Transmission Scenarios of WLAN/BT (Held to Ear)

Configuration	2.4 GHz WLAN Ant 2 at 12 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 15 dBm SAR (W/kg)	5 GHz WLAN MIMO at 14 dBm SAR (W/kg)	6 GHz WLAN MIMO at 13 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 10.5 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 8.5 dBm SAR (W/kg)
	1	2	3	4	5	6
Right Cheek	0.003	0.365	0.235	0.368	0.305	0.000
Right Tilt	0.001	0.325	0.314	0.348	0.277	0.000
Left Cheek	0.003	0.174	0.133	0.167	0.150	0.000
Left Tilt	0.000	0.238	0.180	0.169	0.205	0.000

Configuration	2.4 GHz WLAN Ant 2 at 12 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 15 dBm SAR (W/kg)	5 GHz WLAN MIMO at 14 dBm SAR (W/kg)	6 GHz WLAN MIMO at 13 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 10.5 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 8.5 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 12 dBm + 2.4 GHz Bluetooth Ant 1 at 10.5 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 15 dBm + 5 GHz WLAN MIMO at 14 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 15 dBm + 6 GHz WLAN MIMO at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 14 dBm + 2.4 GHz Bluetooth Ant 1 at 10.5 dBm SAR (W/kg)	5 GHz WLAN MIMO at 14 dBm + 2.4 GHz Bluetooth Ant 2 at 8.5 dBm SAR (W/kg)	6 GHz WLAN MIMO at 13 dBm + 2.4 GHz Bluetooth Ant 1 at 10.5 dBm SAR (W/kg)	6 GHz WLAN MIMO at 13 dBm + 2.4 GHz Bluetooth Ant 2 at 8.5 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 12 dBm + 5 GHz WLAN MIMO at 14 dBm + 2.4 GHz Bluetooth Ant 1 at 10.5 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 12 dBm + 6 GHz WLAN MIMO at 13 dBm + 2.4 GHz Bluetooth Ant 1 at 10.5 dBm SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)
	1	2	3	4	5	6	1+5	2+3	2+4	3+5	3+6	4+5	4+6	1+3+5	1+4+5	
Right Cheek	0.003	0.365	0.235	0.368	0.305	0.000	0.308	0.600	0.733	0.540	0.235	0.673	0.368	0.543	0.676	0.733
Right Tilt	0.001	0.325	0.314	0.348	0.277	0.000	0.278	0.639	0.673	0.591	0.314	0.625	0.348	0.592	0.626	0.673
Left Cheek	0.003	0.174	0.133	0.167	0.150	0.000	0.153	0.307	0.341	0.283	0.133	0.317	0.167	0.286	0.320	0.341
Left Tilt	0.000	0.238	0.180	0.169	0.205	0.000	0.205	0.418	0.407	0.385	0.180	0.374	0.169	0.385	0.374	0.418

Table D-4
DSI=5 Held-to-ear AG Verification

Head SAR	Configuration	AG0 SAR (W/kg)	AG1 SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 + WLAN/BT SAR (W/kg)
	Right Cheek	0.224	0.635	0.733	**1.592**
	Right Tilt	0.114	0.770	0.673	1.557
	Left Cheek	0.168	0.959	0.341	1.468
	Left Tilt	0.098	0.893	0.418	1.409

D.5 Body-worn (DSI = 1) SAR Antenna Group Analysis

Table D-5
DSI=1 Body-worn AG0 Highest Reported SAR

AG0 SAR (W/kg)							
Bodyworn SAR	Configuration	A	A+B	B	C	D	Max
	Back	0.200	0.268	0.629	0.003	0.055	0.629

Table D-6
DSI=1 Body-worn AG1 Highest Reported SAR

AG1 SAR (W/kg)					
Bodyworn SAR	Configuration	E	F	G	Max
	Back	0.085	0.164	0.081	0.164

Table D-7
Simultaneous Transmission Scenarios of WLAN/BT (Body-worn)

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)
	1	2	3	4	5	6
Back	0.015	0.032	0.022	0.012	0.037	0.007

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN MIMO + 5 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO + 6 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 + 5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 + 6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)
	1	2	3	4	5	6	1+5	2+3	2+4	3+5	3+6	4+5	4+6	1+3+5	1+4+5	
Back	0.015	0.032	0.022	0.012	0.037	0.007	0.052	0.054	0.044	0.059	0.029	0.049	0.019	0.074	0.064	0.074

Table D-8
DSI=1 Body-worn AG Verification

Bodyworn SAR	Configuration	AG0 SAR (W/kg)	AG1 SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 + WLAN/BT SAR (W/kg)
	Back	0.629	0.164	0.074	0.867

D.6 Hotspot (DSI = 7) SAR Antenna Group Analysis

Table D-9
DSI=7 Hotspot AG0 Highest Reported SAR

AG0 SAR (W/kg)							
	Configuration	A	A+B	B	C	D	Max
Hotspot SAR	Back	0.380	0.404	0.273	0.016	0.104	0.404
	Front	0.141	0.202	0.161	0.003	0.007	0.202
	Top	-	-	-	-	-	-
	Bottom	0.226	0.135	0.647	0.014	0.129	0.647
	Right	0.500	0.410	0.116	-	-	0.500
	Left	-	0.231	0.057	-	0.010	0.231

Table D-10
DSI=7 Hotspot AG1 Highest Reported SAR

AG1 SAR (W/kg)					
	Configuration	E	F	G	Max
Hotspot SAR	Back	0.180	0.354	0.155	0.354
	Front	0.107	0.121	0.006	0.121
	Top	0.614	0.842	0.276	0.842
	Bottom	-	-	-	-
	Right	0.230	-	0.069	0.230
	Left	-	0.113	0.002	0.113

Table D-11
Simultaneous Transmission Scenarios of WLAN/BT (Hotspot)

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)
	1	2	3	4	5
Back	0.026	0.052	0.047	0.059	0.008
Front	0.086	0.286	0.105	0.245	0.033
Top	-	0.348	0.162	0.284	-
Bottom	0.139	0.118	0.078	-	0.072
Right	-	-	-	-	-
Left	0.045	0.118	0.035	0.089	0.015

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN MIMO + 5 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 + 5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)
	1	2	3	4	5	1+4	2+3	3+4	3+5	1+3+4	
Back	0.026	0.052	0.047	0.059	0.008	0.085	0.099	0.106	0.055	0.132	0.132
Front	0.086	0.286	0.105	0.245	0.033	0.331	0.391	0.350	0.138	0.436	0.436
Top	-	0.348	0.162	0.284	-	0.284	0.510	0.446	0.162	0.446	0.510
Bottom	0.139	0.118	0.078	-	0.072	0.139	0.196	0.078	0.150	0.217	0.217
Right	-	-	-	-	-	-	-	-	-	-	-
Left	0.045	0.118	0.035	0.089	0.015	0.134	0.153	0.124	0.050	0.169	0.169

Table D-12
DSI=7 Hotspot AG Verification

	Configuration	AG0 SAR (W/kg)	AG1 SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 + WLAN/BT SAR (W/kg)
Hotspot SAR	Back	0.404	0.354	0.132	0.890
	Front	0.202	0.121	0.436	0.759
	Top	-	0.842	0.510	1.352
	Bottom	0.647	-	0.217	0.864
	Right	0.500	0.230	-	0.730
	Left	0.231	0.113	0.169	0.513

D.7 Max Phablet (DSI = 1) SAR Antenna Group Analysis

Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required if wireless router 1g SAR (scaled to the maximum output power, including tolerance) < 1.2 W/kg. Therefore no further analysis beyond the tables included in this section was required to determine that possible simultaneous transmission scenarios would not exceed the SAR limit.

Table D-13
DSI=1 Max Phablet AG0 Highest Reported SAR

AG0 SAR (W/kg)							
	Configuration	A	A+B	B	C	D	Max
Phablet SAR	Back	-	-	0.570	-	-	0.570
	Front	-	-	1.656	-	-	1.656
	Top	-	-	-	-	-	-
	Bottom	-	-	0.710	-	-	0.710
	Right	-	-	0.977	-	-	0.977
	Left	-	-	0.334	-	-	0.334

Table D-14
DSI=1 Max Phablet AG1 Highest Reported SAR

AG1 SAR (W/kg)					
	Configuration	E	F	G	Max
Phablet SAR	Back	-	0.944	0.355	0.944
	Front	-	-	-	-
	Top	1.820	2.450	1.378	2.450
	Bottom	-	-	-	-
	Right	-	-	-	-
	Left	-	-	-	-

Table D-15
Simultaneous Transmission Scenarios of WLAN/BT (Phablet)

Configuration	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)
	1	2
Back	0.083	0.021
Front	0.925	0.267
Top	1.539	0.309
Bottom	1.275	0.247
Right	-	-
Left	0.095	0.033

Configuration	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)
	1	2	
Back	0.083	0.021	0.083
Front	0.925	0.267	0.925
Top	1.539	0.309	1.539
Bottom	1.275	0.247	1.275
Right	-	-	-
Left	0.095	0.033	0.095

Table D-16
Simultaneous Transmission Scenarios of NFC/UWB (Phablet)

	Configuration	NFC SAR (W/kg)	UWB Ant 0 SAR (W/kg)	UWB Ant 1 SAR (W/kg)	NFC + UWB Ant 0 SAR (W/kg)	NFC + UWB Ant 1 SAR (W/kg)	NFC/UWB Worst-case Combination SAR (W/kg)
Phablet SAR	Back	0.009	0.000	0.000	0.009	0.009	0.009
	Front	0.000	0.002	0.000	0.002	0.000	0.002
	Top	-	0.000	0.000	0.000	0.000	0.000
	Bottom	-	-	-	-	-	-
	Right	0.000	0.000	-	0.000	0.000	0.000
	Left	0.000	0.000	0.000	0.000	0.000	0.000

Table D-17
DSI=1 Max Phablet AG Verification

	Configuration	AG0 SAR (W/kg)	AG1 SAR (W/kg)	NFC/UWB Worst-case Combination SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 + NFC/UWB Worst-case Combination + WLAN/BT SAR (W/kg)
Phablet SAR	Back	0.570	0.944	0.009	0.083	1.606
	Front	1.656	-	0.002	0.925	2.583
	Top	-	2.450	0.000	1.539	**3.989**
	Bottom	0.710	-	-	1.275	1.985
	Right	0.977	-	0.000	-	0.977
	Left	0.334	-	0.000	0.095	0.429

D.8 Reduced Phablet (DSI = 3) SAR Antenna Group Analysis

Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required if wireless router 1g SAR (scaled to the maximum output power, including tolerance) < 1.2 W/kg. Therefore no further analysis beyond the tables included in this section was required to determine that possible simultaneous transmission scenarios would not exceed the SAR limit.

Table D-18
DSI=3 Reduced Phablet AG0 Highest Reported SAR

AG0 SAR (W/kg)							
	Configuration	A	A+B	B	C	D	Max
Phablet SAR	Back	-	-	1.445	-	-	1.445
	Front	-	-	1.656	-	-	1.656
	Top	-	-	-	-	-	-
	Bottom	-	-	2.511	-	-	2.511
	Right	-	-	0.977	-	-	0.977
	Left	-	-	0.334	-	-	0.334

Table D-19
DSI=3 Reduced Phablet AG1 Highest Reported SAR

AG1 SAR (W/kg)					
	Configuration	E	F	G	Max
Phablet SAR	Back	-	0.944	0.355	0.944
	Front	-	-	-	-
	Top	1.820	2.450	1.378	2.450
	Bottom	-	-	-	-
	Right	-	-	-	-
	Left	-	-	-	-

Please refer to section D.7 for highest reported simultaneous phablet SAR of WLAN/BT/NFC/UWB antennas.

Table D-20
DSI=3 Reduced Phablet AG Verification

	Configuration	AG0 SAR (W/kg)	AG1 SAR (W/kg)	NFC/UWB Worst-case Combination SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 + NFC/UWB Worst-case Combination + WLAN/BT SAR (W/kg)
Phablet SAR	Back	1.445	0.944	0.009	0.083	2.481
	Front	1.656	-	0.002	0.925	2.583
	Top	-	2.450	0.000	1.539	**3.989**
	Bottom	2.511	-	-	1.275	3.786
	Right	0.977	-	0.000	-	0.977
	Left	0.334	-	0.000	0.095	0.429

D.9 Max UMPC Body (DSI = 0) SAR Antenna Group Analysis

Table D-21
DSI=0 Max UMPC Body AG0 Highest Reported SAR

AG0 SAR (W/kg)						
	Configuration	A+B	B	C	D	Max
UMPC Body SAR	Back	0.536	0.919	0.010	0.106	0.919
	Front	0.510	0.920	0.024	0.072	0.920
	Top	-	-	-	-	-
	Bottom	0.344	0.801	0.016	0.166	0.801
	Right	0.343	0.469	-	-	0.469
	Left	-	-	-	-	-

Table D-22
DSI=0 Max UMPC Body AG1 Highest Reported SAR

AG1 SAR (W/kg)					
	Configuration	E	F	G	Max
UMPC Body SAR	Back	0.237	0.455	0.193	0.455
	Front	0.258	0.283	0.099	0.283
	Top	0.581	0.753	0.474	0.753
	Bottom	-	-	-	-
	Right	0.312	-	0.064	0.312
	Left	-	-	-	-

Table D-23
Simultaneous Transmission Scenarios of WLAN/BT (UMPC Body)

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)
	1	2	3	4	5	6	7	8	9
Back	0.145	0.066	0.255	0.082	0.132	0.029	0.233	0.091	0.194
Front	0.182	0.075	0.241	0.068	0.145	0.043	0.196	0.098	0.058
Top	-	-	0.351	0.121	0.263	0.063	0.361	0.112	-
Bottom	0.275	0.087	0.278	0.115	0.223	0.029	-	-	0.117
Right	-	-	-	-	-	-	-	-	-
Left	-	-	-	-	-	-	-	-	-

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 5 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN Ant 2 + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)
	1	3	5	6	7	9	4+5	4+6	1+7	5+8	5+9	6+8	6+9	2+5+8	2+6+8	
Back	0.145	0.255	0.132	0.029	0.233	0.194	0.214	0.111	0.378	0.223	0.326	0.120	0.223	0.289	0.186	0.378
Front	0.182	0.241	0.145	0.043	0.196	0.058	0.213	0.111	0.378	0.243	0.203	0.141	0.101	0.318	0.216	0.378
Top	-	0.351	0.263	0.063	0.361	-	0.384	0.184	0.361	0.375	0.263	0.175	0.063	0.375	0.175	0.384
Bottom	0.275	0.278	0.223	0.029	-	0.117	0.338	0.144	0.275	0.223	0.340	0.029	0.146	0.310	0.116	0.340
Right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Left	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D-24
Simultaneous Transmission Scenarios of Bottom Set WLAN/BT (UMPC Body)

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)
	1	2	3	4	5	6	9	10	11
Back	0.145	0.066	0.195	0.047	0.132	0.029	-	-	0.194

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 5 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN Ant 2 + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	Bottom Set WLAN/BT Worst-case Combination SAR (W/kg)
	1	3	5	6	9	11	4+5	4+6	1+9	5+10	5+11	6+10	6+11	2+5+10	2+6+10	
Back	0.145	0.195	0.132	0.029	-	0.194	0.179	0.076	0.145	0.132	0.326	0.029	0.223	0.198	0.095	0.326

Table D-25
Simultaneous Transmission Scenarios of Top Set WLAN/BT (UMPC Body)

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)
	1	2	3	4	5	6	7	8	9
Back	-	-	0.255	0.082	0.098	0.023	0.233	0.091	-

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 5 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN Ant 2 + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 + 5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 + 6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	Top Set WLAN/BT Worst-case Combination SAR (W/kg)
	1	3	5	6	7	9	4+5	4+6	1+7	5+8	5+9	6+8	6+9	1+5+8	1+6+8	
Back	-	0.255	0.098	0.023	0.233	-	0.180	0.105	0.233	0.189	0.098	0.114	0.023	0.189	0.114	0.255

Table D-26
DSI=0 Max UMPC Body AG Verification

	Configuration	AG0 SAR (W/kg)	AG1 SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 + WLAN/BT SAR (W/kg)
UMPC Body SAR	Back	0.919	0.455	0.378	See Note 2
	Front	0.920	0.283	0.378	1.581
	Top	-	0.753	0.384	1.137
	Bottom	0.801	-	0.340	1.141
	Right	0.469	0.312	-	0.781

Table D-27
DSI=0 Max UMPC Body AG Verification

	Configuration	AG0 SAR (W/kg)	Bottom Set WLAN/BT Worst-case Combination SAR (W/kg)	Bottom Set Overall Sum SAR (W/kg)
UMPC Body SAR	Back	0.919	0.326	1.245

	Configuration	AG1 SAR (W/kg)	Top Set WLAN/BT Worst-case Combination SAR (W/kg)	Top Set Overall Sum SAR (W/kg)
UMPC Body SAR	Back	0.455	0.255	0.710

Table D-28
DSI=0 Max UMPC Body AG Verification

	Back										
	Bottom Set						Top Set				
	Ant A+B	Ant B	Ant C	Ant D	BT/WIFI Ant 2	BT/WIFI MIMO (2)	Ant E	Ant F	Ant G	BT/WIFI Ant 1	BT/WIFI MIMO (1)
Distance	10 mm	14 mm	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm
Max Y Axis (mm)	-58.100	-71.400	-71.000	-72.000	-75.000	-71.400					
Min Y Axis (mm)							52.000	68.700	69.500	83.500	67.900

*WIFI MIMO (1)/(2): WIFI hotspot in MIMO operation from WIFI Ant 1/2 respectively.

Back					
	Bottom Set		Top Set		Bottom Set + Top Set SPLSR
Ant Combination	SAR	Position	SAR	Position	
Bottom Set + Top Set	1.245	-58.100	0.710	52.000	0.02

Notes:

1. For all combinations where the sum of AG0+AG1+WLAN/BT is less than 1.6W/kg, there's no further analysis required for compliance demonstration.
2. No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 D01v06. Please see Section D.13 for Y-axis peak locations.

D.10 Reduced UMPC Body (DSI = 2) SAR Antenna Group Analysis

Table D-29
DSI=2 Reduced UMPC Body AG0 Highest Reported SAR

AG0 SAR (W/kg)						
	Configuration	A+B	B	C	D	Max
UMPC Body SAR	Back	0.536	0.498	0.010	0.106	0.536
	Front	0.510	0.310	0.024	0.072	0.510
	Top	-	-	-	-	-
	Bottom	0.344	0.690	0.016	0.166	0.690
	Right	0.343	0.469	-	-	0.469
	Left	-	-	-	-	-

Table D-30
DSI=2 Reduced UMPC Body AG1 Highest Reported SAR

AG1 SAR (W/kg)					
	Configuration	E	F	G	Max
UMPC Body SAR	Back	0.237	0.455	0.193	0.455
	Front	0.258	0.283	0.099	0.283
	Top	0.581	0.753	0.474	0.753
	Bottom	-	-	-	-
	Right	0.312	-	0.064	0.312
	Left	-	-	-	-

Please refer to section D.11 for highest reported simultaneous UMPC Body SAR of WLAN/BT/NFC/UWB antennas.

Table D-31
DSI=2 Reduced UMPC Body AG Verification

	Configuration	AG0 SAR (W/kg)	AG1 SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 + WLAN/BT SAR (W/kg)
UMPC Body SAR	Back	0.536	0.455	0.378	1.369
	Front	0.510	0.283	0.378	1.171
	Top	-	0.753	0.384	1.137
	Bottom	0.690	-	0.340	1.030
	Right	0.469	0.312	-	0.781

D.11 Max UMPC Extremity (DSI = 0) SAR Antenna Group Analysis

Table D-32
DSI=0 Max UMPC Extremity AG0 Highest Reported SAR

AG0 SAR (W/kg)						
	Configuration	A+B	B	C	D	Max
UMPC Extremity SAR	Back	1.645	1.289	0.099	0.787	1.645
	Front	1.416	0.964	0.027	0.301	1.416
	Top	-	-	-	-	-
	Bottom	1.538	2.338	0.070	0.365	2.338
	Right	1.808	1.353	-	-	1.808
	Left	-	-	-	-	-

Table D-33
DSI=0 Max UMPC Extremity AG1 Highest Reported SAR

AG1 SAR (W/kg)					
	Configuration	E	F	G	Max
UMPC Extremity SAR	Back	0.588	1.273	0.253	1.273
	Front	0.993	1.287	0.306	1.287
	Top	1.638	2.717	1.080	2.717
	Bottom	-	-	-	-
	Right	1.170	-	0.154	1.170
	Left	-	-	-	-
AG1 LTE SAR (W/kg)					
	Configuration	E	F	G	Max
UMPC Extremity SAR	Back	-	0.871	-	0.871
	Front	-	1.160	-	1.160
	Top	-	2.295	-	2.295
AG1 NR SAR (W/kg)					
	Configuration	E	F	G	Max
UMPC Extremity SAR	Back	0.588	1.273	0.253	1.273
	Front	0.993	1.287	0.306	1.287
	Top	1.638	2.717	1.080	2.717

element

Table D-34
Simultaneous Transmission Scenarios of WLAN/BT (UMPC Extremity)

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)
	1	2	3	4	5	6	7	8	9	10	11
Back	0.878	0.216	0.928	0.401	1.195	0.366	0.220	0.916	0.278	0.337	0.113
Front	0.546	0.208	1.004	0.326	0.973	0.381	0.211	0.869	0.285	0.255	0.107
Top	-	-	1.264	0.428	1.246	0.624	0.315	1.401	0.382	-	-
Bottom	1.036	0.214	0.914	0.398	1.007	0.534	0.235	-	-	0.406	0.114
Right	-	-	-	-	-	-	-	-	-	-	-
Left	-	-	-	-	-	-	-	-	-	-	-

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN Ant 2 + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 5 GHz WLAN MIMO at 17 dBm + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)
	1	3	5	7	8	10	4+6	4+7	1+8	5+9	5+11	7+9	7+11	2+6+9	2+7+9	
Back	0.878	0.928	1.195	0.220	0.916	0.337	0.767	0.621	1.794	1.473	1.308	0.498	0.333	0.860	0.714	1.794
Front	0.546	1.004	0.973	0.211	0.869	0.255	0.707	0.537	1.415	1.258	1.080	0.496	0.318	0.874	0.704	1.415
Top	-	1.264	1.246	0.315	1.401	-	1.052	0.743	1.401	1.628	1.246	0.697	0.315	1.006	0.697	1.628
Bottom	1.036	0.914	1.007	0.235	-	0.406	0.932	0.633	1.036	1.007	1.121	0.235	0.349	0.748	0.449	1.121

Table D-35
Simultaneous Transmission Scenarios of WLAN/BT with NR Active (UMPC Extremity)

Configuration	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm + 2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 5 GHz WLAN MIMO at 17 dBm + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	WLAN/BT Worst-case Combination SAR with NR Active (W/kg)
	2	4	6	7	9	11	4+6	4+7	2+9	6+9	6+11	7+9	7+11	2+6+9	2+7+9	
Back	0.216	0.401	0.366	0.220	0.278	0.113	0.767	0.621	0.494	0.644	0.479	0.498	0.333	0.860	0.714	0.860
Front	0.208	0.326	0.381	0.211	0.285	0.107	0.707	0.537	0.493	0.666	0.488	0.496	0.318	0.874	0.704	0.874
Top	-	0.428	0.624	0.315	0.382	-	1.052	0.743	0.382	1.006	0.624	0.697	0.315	1.006	0.697	1.052

Table D-36
Simultaneous Transmission Scenarios of Bottom Set WLAN/BT (UMPC Extremity)

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)
	1	2	3	4	5	6	7	8	9	10	11
Back	0.878	0.216	0.869	0.362	1.195	0.366	0.220	-	-	0.337	0.113

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN Ant 2 + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 5 GHz WLAN MIMO at 17 dBm + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	Bottom Set WLAN/BT Worst-case Combination SAR (W/kg)
	1	3	5	7	8	10	4+6	4+7	1+8	5+9	5+11	7+9	7+11	2+6+9	2+7+9	
Back	0.878	0.869	1.195	0.220	-	0.337	0.728	0.582	0.878	1.195	1.308	0.220	0.333	0.582	0.436	1.308

Table D-37
Simultaneous Transmission Scenarios of Top Set WLAN/BT (UMPC Extremity)

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)
	1	2	3	4	5	6	7	8	9	10	11
Back	-	-	0.928	0.401	0.433	0.232	0.113	0.916	0.278	-	-

Configuration	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm + 6 GHz WLAN MIMO SAR (W/kg)	2.4 GHz WLAN Ant 2 + 2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 2 at 12 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 5 GHz WLAN MIMO at 17 dBm + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm + 6 GHz WLAN MIMO + 2.4 GHz Bluetooth Ant 1 at 14 dBm SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)
	1	3	5	7	8	10	4+6	4+7	1+8	5+9	5+11	7+9	7+11	2+6+9	2+7+9	
Back	-	0.928	0.433	0.113	0.916	-	0.633	0.514	0.916	0.711	0.433	0.391	0.113	0.510	0.391	0.928

Table D-38
Simultaneous Transmission Scenarios of NFC/UWB (UMPC Extremity)

	Configuration	NFC SAR (W/kg)	UWB Ant 0 SAR (W/kg)	UWB Ant 1 SAR (W/kg)	NFC + UWB Ant 0 SAR (W/kg)	NFC + UWB Ant 1 SAR (W/kg)	NFC/UWB Worst-case Combination SAR (W/kg)
UMPC Extremity SAR	Back	0.010	0.000	0.000	0.010	0.010	0.010
	Front	0.000	0.000	0.000	0.000	0.000	0.000
	Top	-	0.000	0.000	0.000	0.000	0.000
	Bottom	-	-	-	-	-	-
	Right	0.000	0.000	-	0.000	0.000	0.000
	Left	-	-	-	-	-	-

Table D-39
DSI=0 Max UMPC Extremity AG Verification

UMPC Extremity SAR	Configuration	AG0 SAR (W/kg)	AG1 SAR (W/kg)	NFC/UWB Worst-case Combination SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 + NFC/UWB Worst-case Combination + WLAN/BT SAR (W/kg)
	Back	1.645	1.273	0.010	1.794	See Table Below
	Front	1.416	1.287	0.000	1.415	See Table Below
	Top	-	2.717	0.000	1.628	See Table Below
	Bottom	2.338	-	-	1.121	3.459
	Right	1.808	1.170	0.000	-	2.978

Table D-40
DSI=0 Max UMPC Extremity AG Verification

UMPC Extremity SAR	Configuration	AG0 SAR (W/kg)	AG1 NR SAR (W/kg)	AG1 LTE SAR (W/kg)	NFC/UWB Worst-case Combination SAR (W/kg)	WLAN/BT Worst-case Combination with NR active SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 NR+ NFC + Worst Case UWB + WLAN/BT with NR Active SAR (W/kg)	AG0 + AG1 LTE+ NFC + Worst Case UWB + WLAN/BT SAR (W/kg)
	Back	1.645	1.273	0.871	0.010	0.860	1.794	3.788	See Note 2
	Front	1.416	1.287	1.160	0.000	0.874	1.415	3.577	**3.991**
	Top	-	2.717	2.295	0.000	1.052	1.628	3.769	3.923

Table D-41
DSI=0 Max UMPC Extremity AG Verification

UMPC Extremity SAR	Configuration	AG0 SAR (W/kg)	NFC SAR (W/kg)	Bottom Set WLAN/BT Worst-case Combination SAR (W/kg)	Bottom Set Overall Sum Legacy SAR (W/kg)
	Back	1.645	0.010	1.308	2.963
UMPC Extremity SAR	Configuration	AG1 LTE SAR (W/kg)	Worst Case UWB SAR (W/kg)	Top Set WLAN/BT Worst-case Combination SAR (W/kg)	Top Set Overall Sum Legacy SAR (W/kg)
	Back	0.871	0.000	0.928	1.799

Table D-42
DSI=0 Max UMPC Extremity AG Verification

	Back													
	Bottom Set							Top Set						
	Ant A+B	Ant B	Ant C	Ant D	BT/WIFI Ant 2	BT/WIFI MIMO (2)	Ant NFC	Ant E	Ant F	Ant G	Ant 1	Ant MIMO (1)	Ant UWB 0	Ant UWB 1
Distance (mm)	0 mm	14/0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm
Max Y Axis (mm)	-59.400	-71.400	-67.800	-74.400	-72.800	-71.500	-32.900							
Min Y Axis (mm)								-	78.500	-	76.700	73.400	83.300	74.000

WIFI MIMO (1)/(2): WIFI hotspot in MIMO operation from WIFI Ant 1/2 respectively

Back					
	Bottom Set		Top Set		Bottom Set + Top Set SPLSR
Ant Combination	SAR	Position	SAR	Position	
Bottom Set + Top Set	2.963	-32.900	1.799	73.400	0.10

Notes:

1. For all combinations where the sum of AG0+AG1+WLAN/BT is less than 4W/kg, there's no further analysis required for compliance demonstration.
2. No evaluation was performed to determine the aggregate 10g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.10 per FCC KDB 447498 D01v06. Please see Section D.13 for Y-axis peak locations.
3. For back side position, we additionally did a hybrid analysis with NFC summed algebraically with bottom set and UWB summed algebraically with top set due to their antenna or hotspot location. The worst case distance including Bottom Set+NFC and Top Set+UWB was used.

D.12 Reduced UMPC Extremity (DSI = 2) SAR Antenna Group Analysis

Table D-43
DSI=2 Reduced UMPC Extremity AG0 Highest Reported SAR

AG0 SAR (W/kg)						
	Configuration	A+B	B	C	D	Max
UMPC Extremity SAR	Back	1.645	1.502	0.099	0.787	1.645
	Front	1.416	1.134	0.027	0.301	1.416
	Top	-	-	-	-	-
	Bottom	1.538	2.823	0.070	0.365	2.823
	Right	1.808	1.353	-	-	1.808
	Left	-	-	-	-	-

Table D-44
DSI=2 Reduced UMPC Extremity AG1 Highest Reported SAR

AG1 SAR (W/kg)					
	Configuration	E	F	G	Max
UMPC Extremity SAR	Back	0.588	1.273	0.253	1.273
	Front	0.993	1.287	0.306	1.287
	Top	1.638	2.717	1.080	2.717
	Bottom	-	-	-	-
	Right	1.170	-	0.154	1.170
	Left	-	-	-	-
AG1 LTE SAR (W/kg)					
	Configuration	E	F	G	Max
UMPC Extremity SAR	Back	-	0.871	-	0.871
	Front	-	1.160	-	1.160
	Top	-	2.295	-	2.295
AG1 NR SAR (W/kg)					
	Configuration	E	F	G	Max
UMPC Extremity SAR	Back	0.588	1.273	0.253	1.273
	Front	0.993	1.287	0.306	1.287
	Top	1.638	2.717	1.080	2.717

Please refer to section D.13 for highest reported simultaneous UMPC Extremity SAR of WLAN/BT/NFC/UWB antennas.

Table D-45
DSI=2 Reduced UMPC Extremity AG Verification

UMPC Extremity SAR	Configuration	AG0 SAR (W/kg)	AG1 SAR (W/kg)	NFC/UWB Worst-case Combination SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 + NFC/UWB Worst-case Combination + WLAN/BT SAR (W/kg)
	Back	1.645	1.273	0.010	1.794	See Table Below
	Front	1.416	1.287	0.000	1.415	See Table Below
	Top	-	2.717	0.000	1.628	See Table Below
	Bottom	2.823	-	-	1.121	3.944
	Right	1.808	1.170	0.000	-	2.978

Table D-46
DSI=2 Reduced UMPC Extremity AG Verification

UMPC Extremity SAR	Configuration	AG0 SAR (W/kg)	AG1 NR SAR (W/kg)	AG1 LTE SAR (W/kg)	NFC/UWB Worst-case Combination SAR (W/kg)	WLAN/BT Worst-case Combination with NR active SAR (W/kg)	WLAN/BT Worst-case Combination SAR (W/kg)	AG0 + AG1 NR+ NFC + Worst Case UWB + WLAN/BT with NR Active SAR (W/kg)	AG0 + AG1 LTE+ NFC + Worst Case UWB + WLAN/BT SAR (W/kg)
	Back	1.645	1.273	0.871	0.010	0.860	1.794	3.788	See Note 2
	Front	1.416	1.287	1.160	0.000	0.874	1.415	3.577	**3.991**
	Top	-	2.717	2.295	0.000	1.052	1.628	3.769	3.923

Table D-47
DSI=2 Reduced UMPC Extremity AG Verification

UMPC Extremity SAR	Configuration	AG0 SAR (W/kg)	NFC SAR (W/kg)	Bottom Set WLAN/BT Worst-case Combination SAR (W/kg)	Bottom Set Overall Sum Legacy SAR (W/kg)
	Back	1.645	0.010	1.308	2.963

UMPC Extremity SAR	Configuration	AG1 LTE SAR (W/kg)	Worst Case UWB SAR (W/kg)	Top Set WLAN/BT Worst-case Combination SAR (W/kg)	Top Set Overall Sum Legacy SAR (W/kg)
	Back	0.871	0.000	0.928	1.799

Table D-48
DSI=2 Reduced UMPC Extremity AG Verification

	Back													
	Bottom Set							Top Set						
	Ant A+B	Ant B	Ant C	Ant D	BT/WIFI Ant 2	BT/WIFI MIMO (2)	Ant NFC	Ant E	Ant F	Ant G	BT/WIFI Ant 1	BT/WIFI MIMO (1)	Ant UWB 0	Ant UWB 0
Distance (mm)	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm
Max Y Axis (mm)	-59.400	-73.300	-67.800	-74.400	-72.800	-71.500	-32.900							
Min Y Axis (mm)								-	78.500	-	77.900	73.400	83.300	74.000

WIFI MIMO (1)/(2): WIFI hotspot in MIMO operation from WIFI Ant 1/2 respectively

Back					
	Bottom Set		Top Set		Bottom Set + Top Set SPLSR
Ant Combination	SAR	Position	SAR	Position	
Bottom Set + Top Set	2.963	-32.900	1.799	73.400	0.10

Notes:

1. For all combinations where the sum of AG0+AG1+WLAN/BT is less than 4W/kg, there's no further analysis required for compliance demonstration.
2. No evaluation was performed to determine the aggregate 10g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.10 per FCC KDB 447498 D01v06. Please see Section D.13 for Y-axis peak locations.
3. For back side position, we additionally did a hybrid analysis with NFC summed algebraically with bottom set and UWB summed algebraically with top set due to their antenna or hotspot location. The worst case distance including Bottom Set+NFC and Top Set+UWB was used.

D.13 Highest Report SAR and SAR Hotspot Locations

As a conservative assessment, the distances between AG0 and AG1 were determined using the y-axis coordinates of the peak locations only (assumes 0 mm separation on x/z axis)

Table D-49
DSI=0 UMPC Body Back Side Peak Y Coordinates

Back												
		Bottom Set						Top Set				
Mode/Band	Distance	AG0				WLAN/BT Bottom		AG1			WLAN/BT Top	
		A+B	B	C	D	2	MIMO (2)	E	F	G	1	MIMO (1)
		10 mm	14 mm	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm
GSM 850	SAR	0.438										
	Y-Axis	-58.100										
GSM 1900	SAR		0.370									
	Y-Axis		-75.900									
UMTS 850	SAR	0.362										
	Y-Axis	-62.600										
UMTS 1750	SAR		0.552									
	Y-Axis		-77.700									
UMTS 1900	SAR		0.548									
	Y-Axis		-71.400									
LTE Band 71	SAR	0.525										
	Y-Axis	-72.100										
LTE Band 12	SAR	0.448										
	Y-Axis	-75.600										
LTE Band 13	SAR	0.491										
	Y-Axis	-68.100										
LTE Band 14	SAR	0.451										
	Y-Axis	-69.900										
LTE Band 26 (Cell)	SAR	0.536										
	Y-Axis	-59.600										
LTE Band 5 (Cell)	SAR	0.471										
	Y-Axis	-60.600										
LTE Band 66 (AWS)	SAR		0.395						0.326			
	Y-Axis		-81.600						75.600			
LTE Band 25 (PCS)	SAR		0.487									
	Y-Axis		-73.600									
LTE Band 30	SAR		0.548									
	Y-Axis		-80.000									
LTE Band 7	SAR		0.717									
	Y-Axis		-77.000									
LTE Band 41	SAR		0.393									
	Y-Axis		-85.000									
LTE Band 48	SAR								0.288			
	Y-Axis								78.500			
NR Band n71	SAR	0.411										
	Y-Axis	-71.600										
NR Band n12	SAR	0.458										
	Y-Axis	-67.100										
NR Band n5 (Cell)	SAR	0.531										
	Y-Axis	-66.600										
NR Band n66 (AWS)	SAR		0.460						0.455			
	Y-Axis		-78.600						75.300			
NR Band n25 (PCS)	SAR		0.748						0.150			
	Y-Axis		-78.400						72.100			
NR Band n30	SAR		0.497						0.199			
	Y-Axis		-78.900						68.700			
NR Band n7	SAR		0.919									
	Y-Axis		-79.500									
NR Band n41	SAR		0.299	0.010				0.041	0.243			
	Y-Axis		-83.300	-71.000				60.000	75.000			
NR Band n48	SAR				0.079			0.070	0.317	0.121		
	Y-Axis				-72.000			52.000	72.100	72.000		
NR Band n77 DoD	SAR				0.085			0.181	0.300	0.115		
	Y-Axis				-74.000			79.000	73.000	76.000		
NR Band n77	SAR				0.106			0.237	0.318	0.193		
	Y-Axis				-75.000			76.000	71.000	69.500		
2.4 GHz WLAN	SAR					0.145	0.195					0.255
	Y-Axis					-81.000	-76.000					83.000
2.4 GHz WLAN at 14 dBm	SAR					0.066						
	Y-Axis					-82.000						
2.4 GHz WLAN at 17 dBm	SAR						0.047					0.082
	Y-Axis						-79.000					86.000
5 GHz WLAN	SAR						0.132					0.098
	Y-Axis						-71.400					75.700
6 GHz WLAN	SAR						0.029					0.023
	Y-Axis						-84.300					67.900
Bluetooth	SAR					0.194					0.233	
	Y-Axis					-75.000					83.500	
Bluetooth at 14 dBm	SAR										0.091	
	Y-Axis										84.500	

Table D-50
DSI=0 UMPC Extremity Back Side Peak Y Coordinates

Back																
		Bottom Set							Top Set							
Mode/Band	Distance	AG0				WLAN/BT Bottom		NFC	AG1			WLAN/BT/UWB Top				
		A+B	B	C	D	2	MIMO (2)	NFC	E	F	G	1	MIMO (1)	UWB 0	UWB 1	
		0 mm	14/0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	
GSM 850	SAR	1.430														
	Y-Axis	-64.600														
GSM 1900	SAR		0.209													
	Y-Axis		-75.900													
UMTS 850	SAR	1.083														
	Y-Axis	-59.900														
UMTS 1750	SAR		0.332													
	Y-Axis		-77.700													
UMTS 1900	SAR		0.314													
	Y-Axis		-71.400													
LTE Band 71	SAR	1.110														
	Y-Axis	-74.500														
LTE Band 12	SAR	1.115														
	Y-Axis	-79.600														
LTE Band 13	SAR	0.926														
	Y-Axis	-74.800														
LTE Band 14	SAR	0.893														
	Y-Axis	-75.800														
LTE Band 26 (Cell)	SAR	1.645														
	Y-Axis	-67.500														
LTE Band 5 (Cell)	SAR	1.258														
	Y-Axis	-63.100														
LTE Band 66 (AWS)	SAR		0.233							0.871						
	Y-Axis		-81.600							80.000						
LTE Band 25 (PCS)	SAR		0.279													
	Y-Axis		-73.600													
LTE Band 30	SAR		0.290													
	Y-Axis		-80.000													
LTE Band 7	SAR		0.357													
	Y-Axis		-77.000													
LTE Band 41	SAR		0.191													
	Y-Axis		-85.000													
LTE Band 48	SAR									0.524						
	Y-Axis									78.500						
NR Band n71	SAR	1.051														
	Y-Axis	-79.600														
NR Band n12	SAR	1.107														
	Y-Axis	-59.400														
NR Band n5 (Cell)	SAR	1.284														
	Y-Axis	-73.000														
NR Band n66 (AWS)	SAR		0.278													
	Y-Axis		-78.600													
NR Band n25 (PCS)	SAR		0.422													
	Y-Axis		-78.400													
NR Band n30	SAR		0.265													
	Y-Axis		-78.900													
NR Band n7	SAR		0.453													
	Y-Axis		-79.500													
NR Band n41	SAR		1.289	0.099												
	Y-Axis		-78.300	-67.800												
NR Band n48	SAR				0.355											
	Y-Axis				-74.400											
NR Band n77 DoD	SAR				0.153											
	Y-Axis				-77.700											
NR Band n77	SAR				0.787											
	Y-Axis				-78.400											
2.4 GHz WLAN	SAR					0.878	0.869						0.928			
	Y-Axis					-74.800	-74.700						81.700			
2.4 GHz WLAN at 14 dBm	SAR					0.216										
	Y-Axis					-73.000										
2.4 GHz WLAN at 17 dBm	SAR						0.362						0.401			
	Y-Axis						-71.500						84.000			
5 GHz WLAN	SAR						1.195						0.433			
	Y-Axis						-75.200						73.400			
5 GHz WLAN at 17 dBm	SAR						0.366						0.232			
	Y-Axis						-75.900						75.100			
6 GHz WLAN	SAR						0.220						0.113			
	Y-Axis						-76.900						73.900			
Bluetooth	SAR					0.337						0.916				
	Y-Axis					-72.800						81.800				
Bluetooth at 12 dBm	SAR					0.113										
	Y-Axis					-76.200										
Bluetooth at 14 dBm	SAR											0.278				
	Y-Axis											77.900				
UWB	SAR													0.000	0.000	
	Y-Axis													83.300	74.000	
NFC	SAR							0.010								
	Y-Axis							-32.900								

Table D-51
DSI=2 UMPC Extremity Back Side Peak Y Coordinates

		Bottom Set							Top Set						
Mode/Band	Distance	AG0				WLAN/BT Bottom		NFC	AG1			WLAN/BT/UWB Top			
		A+B	B	C	D	2	MIMO (2)	NFC	E	F	G	1	MIMO (1)	UWB 0	UWB 1
		0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm
GSM 850	SAR	1.430													
	Y-Axis	-64.600													
GSM 1900	SAR		0.715												
	Y-Axis		-73.500												
UMTS 850	SAR	1.083													
	Y-Axis	-59.900													
UMTS 1750	SAR		1.130												
	Y-Axis		-78.300												
UMTS 1900	SAR		0.985												
	Y-Axis		-75.200												
LTE Band 71	SAR	1.110													
	Y-Axis	-74.500													
LTE Band 12	SAR	1.115													
	Y-Axis	-79.600													
LTE Band 13	SAR	0.926													
	Y-Axis	-74.800													
LTE Band 14	SAR	0.893													
	Y-Axis	-75.800													
LTE Band 26 (Cell)	SAR	1.645													
	Y-Axis	-67.500													
LTE Band 5 (Cell)	SAR	1.258													
	Y-Axis	-63.100													
LTE Band 66 (AWS)	SAR		1.502							0.871					
	Y-Axis		-75.700							80.000					
LTE Band 25 (PCS)	SAR		1.207												
	Y-Axis		-73.300												
LTE Band 30	SAR		0.906												
	Y-Axis		-76.700												
LTE Band 7	SAR		1.283												
	Y-Axis		-77.000												
LTE Band 41	SAR		0.962												
	Y-Axis		-80.000												
LTE Band 48	SAR									0.524					
	Y-Axis									78.500					
NR Band n71	SAR	1.051													
	Y-Axis	-79.600													
NR Band n12	SAR	1.107													
	Y-Axis	-59.400													
NR Band n5 (Cell)	SAR	1.284													
	Y-Axis	-73.000													
NR Band n66 (AWS)	SAR		1.083												
	Y-Axis		-78.800												
NR Band n25 (PCS)	SAR		1.253												
	Y-Axis		-73.700												
NR Band n30	SAR		0.777												
	Y-Axis		-77.200												
NR Band n7	SAR		1.413												
	Y-Axis		-77.500												
NR Band n41	SAR		1.289	0.099											
	Y-Axis		-78.300	-67.800											
NR Band n48	SAR				0.355										
	Y-Axis				-74.400										
NR Band n77 DoD	SAR				0.153										
	Y-Axis				-77.700										
NR Band n77	SAR				0.787										
	Y-Axis				-78.400										
2.4 GHz WLAN	SAR					0.878	0.869						0.928		
	Y-Axis					-74.800	-74.700						81.700		
2.4 GHz WLAN at 14 dBm	SAR					0.216									
	Y-Axis					-73.000									
2.4 GHz WLAN at 17 dBm	SAR						0.362						0.401		
	Y-Axis						-71.500						84.000		
5 GHz WLAN	SAR						1.195						0.433		
	Y-Axis						-75.200						73.400		
5 GHz WLAN at 17 dBm	SAR						0.366						0.232		
	Y-Axis						-75.900						75.100		
6 GHz WLAN	SAR						0.220						0.113		
	Y-Axis						-76.900						73.900		
Bluetooth	SAR					0.337						0.916			
	Y-Axis					-72.800						81.800			
Bluetooth at 12 dBm	SAR					0.113									
	Y-Axis					-76.200									
Bluetooth at 14 dBm	SAR											0.278			
	Y-Axis											77.900			
UWB	SAR													0.000	0.000
	Y-Axis													83.300	74.000
NFC	SAR							0.010							
	Y-Axis							-32.900							

D.14 Conclusion

The above numerical summed SAR results and SPLSR for 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.