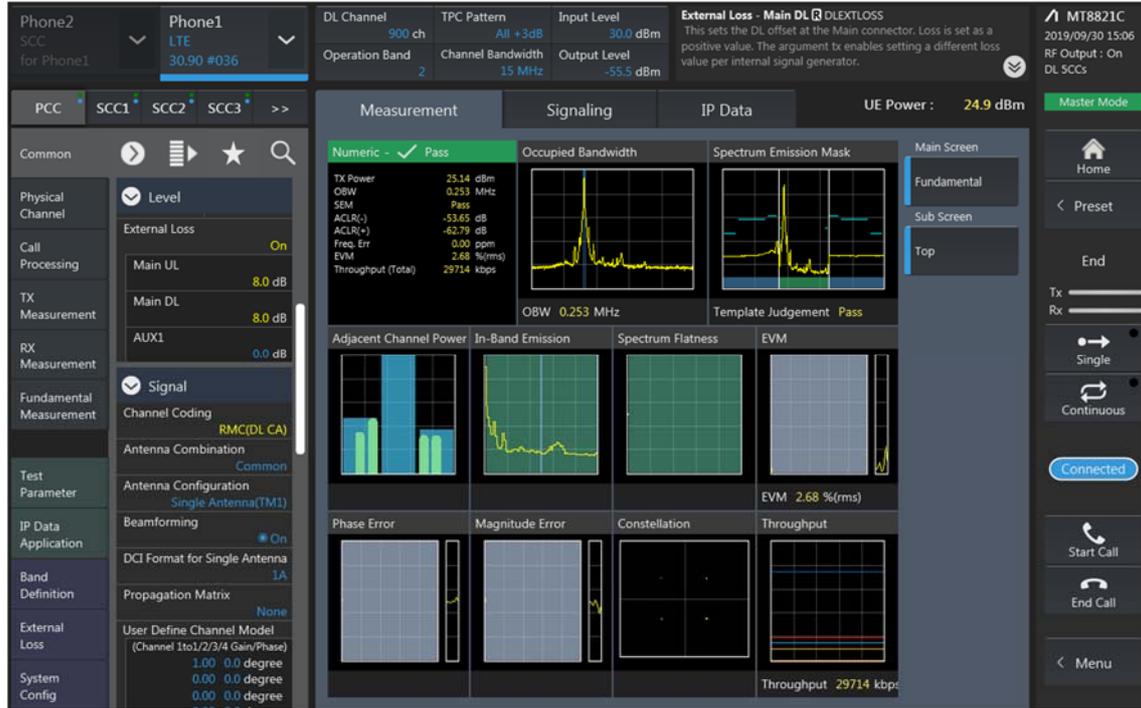
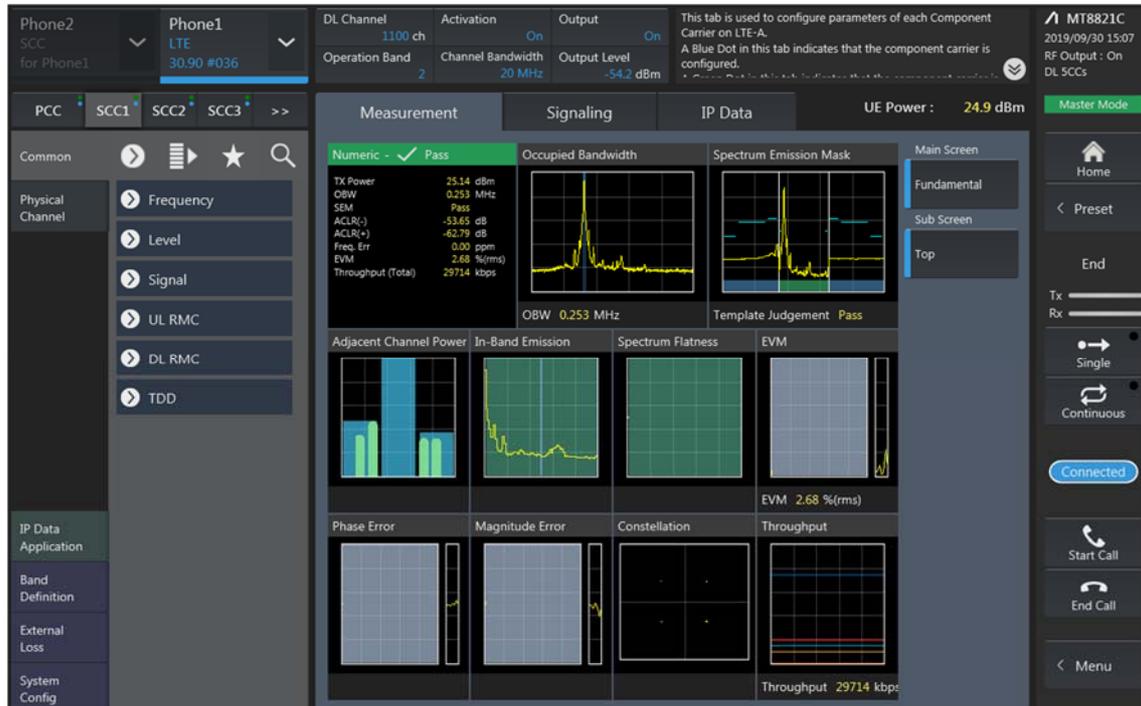


LTE Down Link 5CA Call Setup

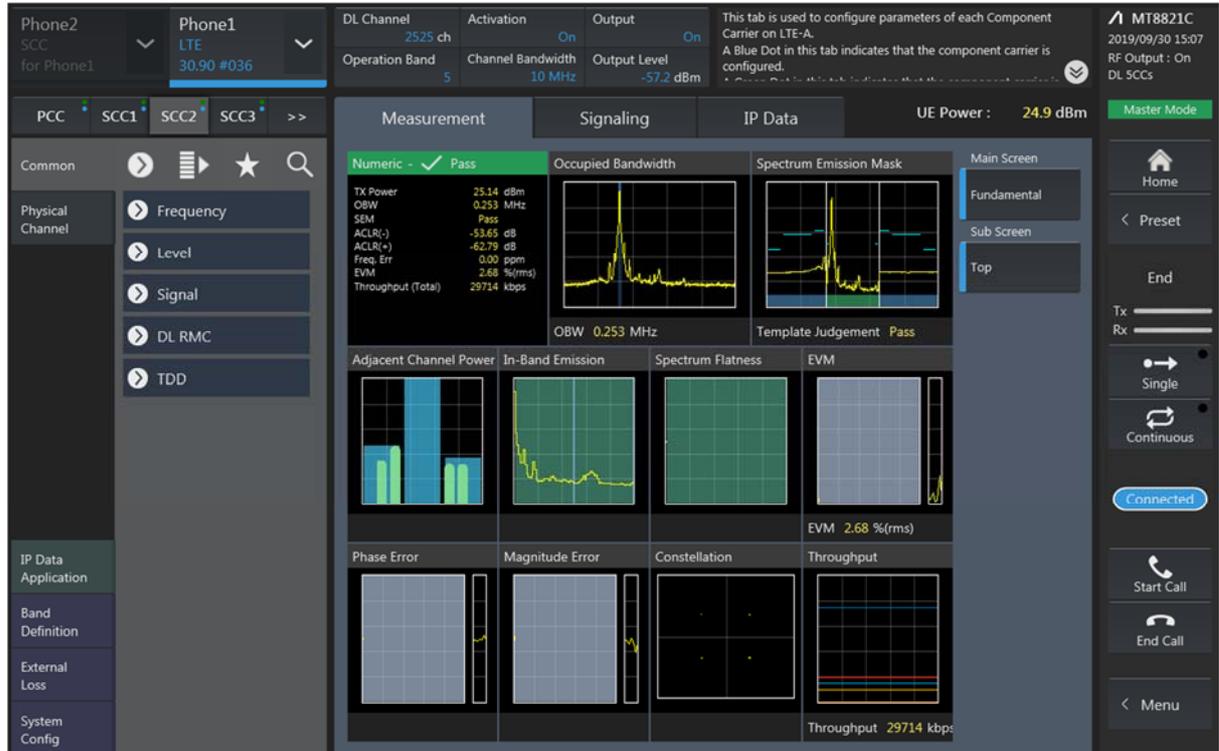
1)PCC Setting: Channel /RB/BW/Modulation



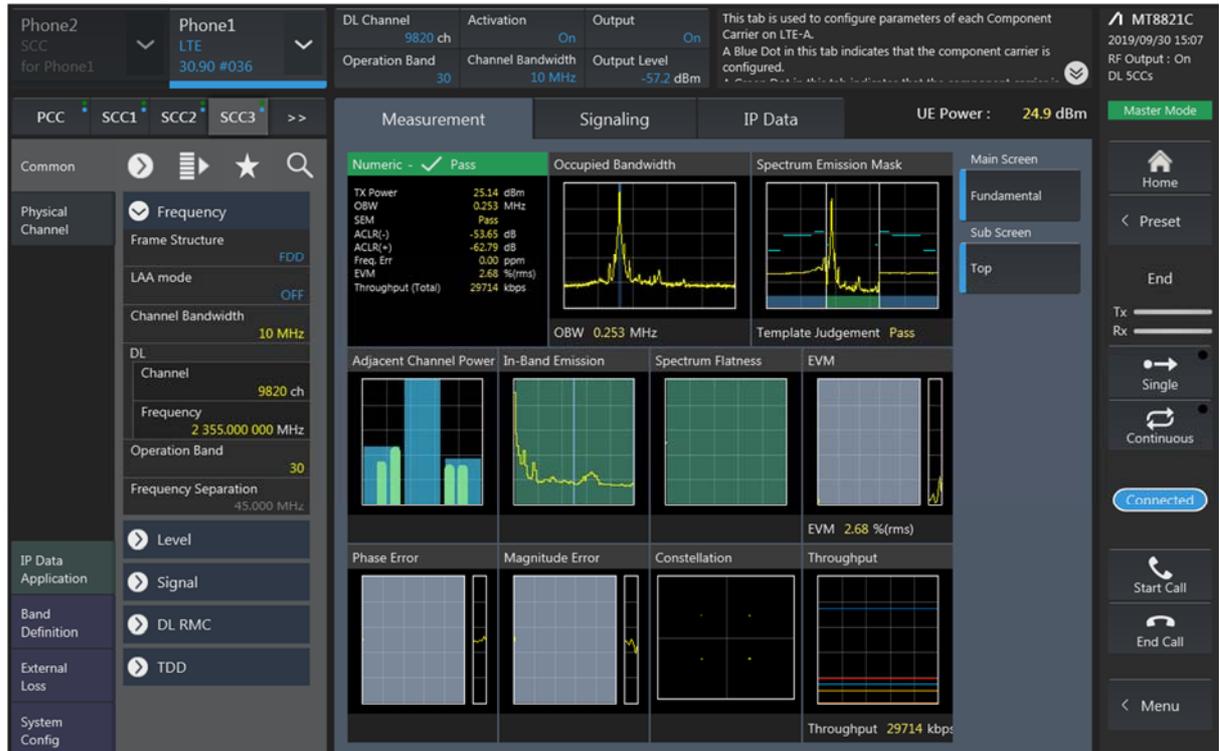
2) SCC1 Setting : Channel /RB/BW/Modulation



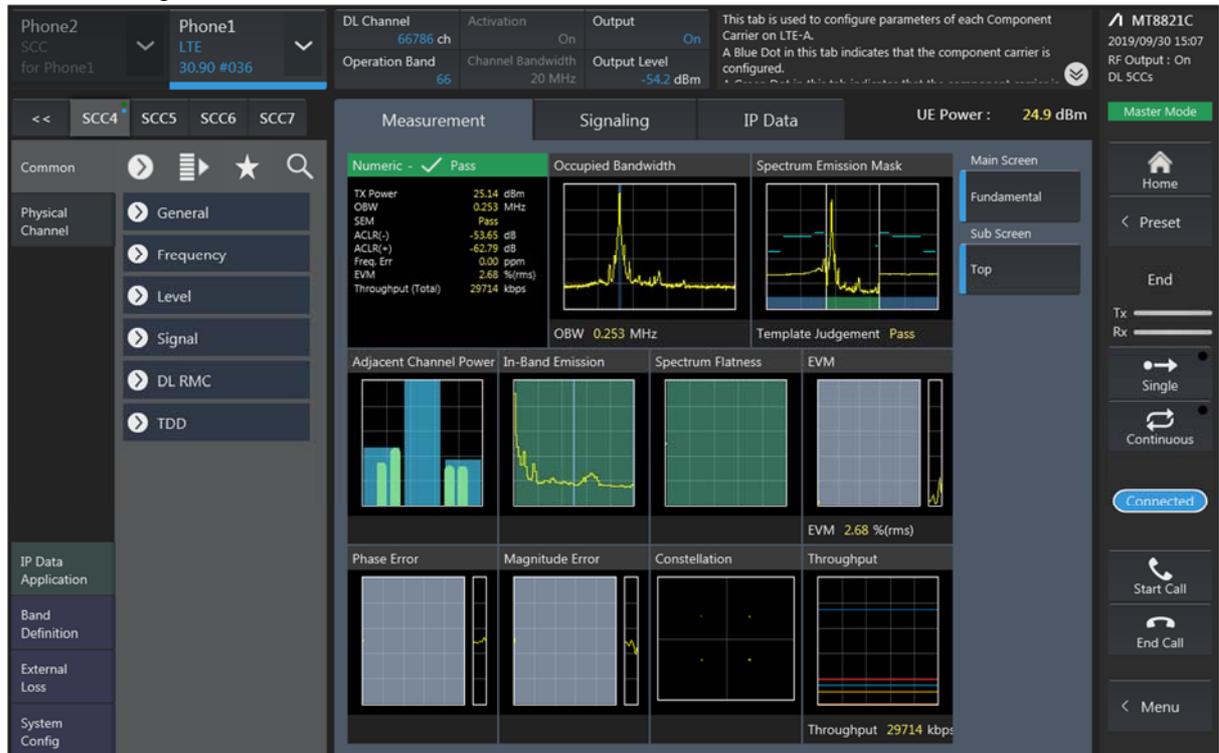
3) SCC2 Setting : Channel /RB/BW/Modulation



4) SCC3 Setting : Channel /RB/BW/Modulation



5) SCC4 Setting : Channel /RB/BW/Modulation



6) Throughput



5CA Downlink Carrier aggregation Maximum Conducted Powers

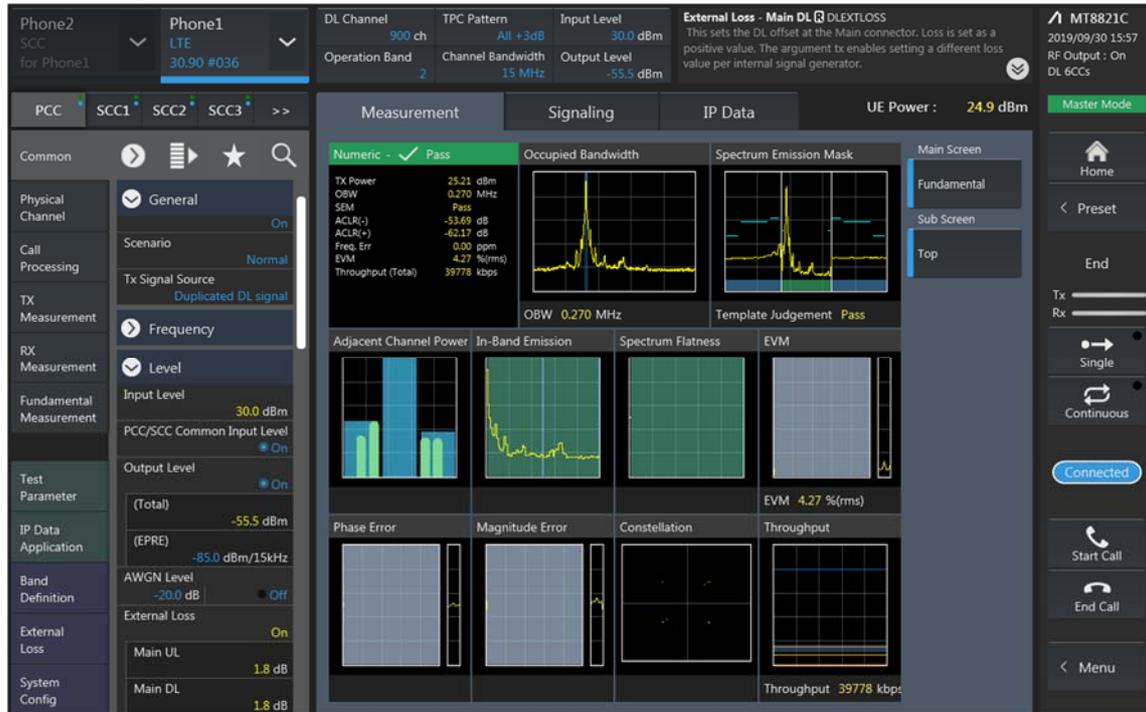
Combination	PCC								SCG				SCG				SCG				SCG				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm)	5G NR Power with DL CA Enabled (dBm)
2A-2A-5A-30A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	2	20	1100	1980	5	10	2525	881.5	30	10	9820	2355	66	20	66786	2145	25.18	25.14
2A-2A-5A-66A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	2	20	1100	1980	5	10	2525	881.5	66	20	66786	2145	66	20	67236	2190	25.18	25.09
2A-2A-12A-30A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	2	20	1100	1980	12	10	5095	737.5	30	10	9820	2355	66	20	67236	2190	25.18	25.15
2A-2A-12A-66A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	2	20	1100	1980	12	10	5095	737.5	66	20	66786	2145	66	20	67236	2190	25.18	25.17
2A-2A-14A-30A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	2	20	1100	1980	14	10	5330	763	30	10	9820	2355	66	20	67236	2190	25.18	25.15
2A-2A-14A-66A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	2	20	1100	1980	14	10	5330	763	66	20	66786	2145	66	20	67236	2190	25.18	25.2
2A-5A-30A-66A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	5	10	2525	881.5	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	25.18	25.21
2A-12A-30A-66A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	12	10	5095	737.5	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	25.18	25.23
2A-14A-30A-66A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	14	10	5330	763	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	25.18	25.22
2A-2A-5A-66B	2	15	18675	1857.5	675	1937.5	QPSK	1	74	2	20	1100	1980	5	10	2525	881.5	66	10	6987	2165.1	66	10	67086	2175	25.18	25.25
2A-2A-5A-66C	2	15	18675	1857.5	675	1937.5	QPSK	1	74	2	20	1100	1980	5	10	2525	881.5	66	20	66536	2120	66	20	66734	2139.8	25.18	25.27
2A-5B-30A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	5	5	2625	871.5	5	10	2553	884.3	30	10	9820	2355	66	20	67236	2190	25.18	25.21
2A-5B-66A-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	5	5	2625	871.5	5	10	2553	884.3	66	20	66786	2145	66	20	67236	2190	25.18	25.17
2A-5B-66B	2	15	18675	1857.5	675	1937.5	QPSK	1	74	5	5	2625	871.5	5	10	2553	884.3	66	10	6987	2165.1	66	10	67086	2175	25.18	25.18
2A-5B-66C	2	15	18675	1857.5	675	1937.5	QPSK	1	74	5	5	2625	871.5	5	10	2553	884.3	66	20	66536	2120	66	20	66734	2139.8	25.18	25.17
5A-2A-2A-30A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	24.18	24.2
5A-2A-2A-66A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	24.18	24.17
5A-2A-30A-66A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	24.18	24.18
5A-2A-2A-66B	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	66	10	6987	2165.1	66	10	67086	2175	24.18	24.14
5A-2A-2A-66C	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	66	20	66536	2120	66	20	66734	2139.8	24.18	24.19
5B-2A-30A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	5	10	2553	884.3	2	20	900	1960	30	10	9820	2355	66	20	67236	2190	24.18	24.15
5B-2A-66A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	5	10	2553	884.3	2	20	900	1960	66	20	66786	2145	66	20	67236	2190	24.18	24.21
5B-30A-66A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	5	10	2553	884.3	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	24.18	24.19
5B-2A-66B	5	5	20625	846.5	2625	891.5	QPSK	1	12	5	10	2553	884.3	2	20	900	1960	66	10	6987	2165.1	66	10	67086	2175	24.18	24.14
5B-2A-66C	5	5	20625	846.5	2625	891.5	QPSK	1	12	5	10	2553	884.3	2	20	900	1960	66	20	66536	2120	66	20	66734	2139.8	24.18	24.16
12A-2A-2A-30A-66A	12	10	23095	707.5	5095	737.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	24.65	24.61
12A-2A-2A-66A-66A	12	10	23095	707.5	5095	737.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	24.65	24.67
12A-2A-30A-66A-66A	12	10	23095	707.5	5095	737.5	QPSK	1	0	2	20	900	1960	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	24.65	24.65
14A-2A-2A-30A-66A	14	10	23330	793	5330	763	QPSK	1	24	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	24.65	24.66
14A-2A-2A-66A-66A	14	10	23330	793	5330	763	QPSK	1	24	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	24.65	24.69
14A-2A-30A-66A-66A	14	10	23330	793	5330	763	QPSK	1	24	2	20	900	1960	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	24.65	24.67
30A-2A-2A-5A-66A	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	66	20	67236	2190	23.81	23.84
30A-2A-2A-12A-66A	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	66	20	67236	2190	23.81	23.77
30A-2A-2A-14A-66A	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	14	10	5330	763	66	20	67236	2190	23.81	23.81
30A-2A-5A-66A-66A	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	66	20	67236	2190	23.81	23.89
30A-2A-12A-66A-66A	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	2	20	900	1960	12	10	5095	737.5	66	20	66786	2145	66	20	67236	2190	23.81	23.86
30A-2A-14A-66A-66A	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	2	20	900	1960	14	10	5330	763	66	20	66786	2145	66	20	67236	2190	23.81	23.74
30A-2A-5B-66A	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	2	20	900	1960	5	5	2625	871.5	5	10	2553	884.3	66	20	67236	2190	23.81	23.77
30A-5B-66A-66A	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	5	5	2625	871.5	5	10	2553	884.3	66	20	66786	2145	66	20	67236	2190	23.81	23.78
41C-41D(PC3)	41	15	40620	2593	40620	2593	QPSK	1	36	41	20	40791	2610.1	41	20	41094	2640.4	41	20	41292	2660.2	41	20	41490	2680	24.03	24.08
41D-41C(PC3)	41	15	40620	2593	40620	2593	QPSK	1	36	41	20	40791	2610.1	41	20	40989	2629.9	41	20	41292	2660.2	41	20	41490	2680	24.03	23.99
41F(PC3)	41	15	40620	2593	40620	2593	QPSK	1	36	41	20	40791	2610.1	41	20	40989	2629.9	41	20	41187	2649.7	41	20	41385	2669.5	24.03	24.06
41C-41D(PC2)	41	15	40620	2593	40620	2593	QPSK	1	36	41	20	40791	2610.1	41	20	41094	2640.4	41	20								

5CA Downlink Carrier aggregation Reduced Conducted Powers

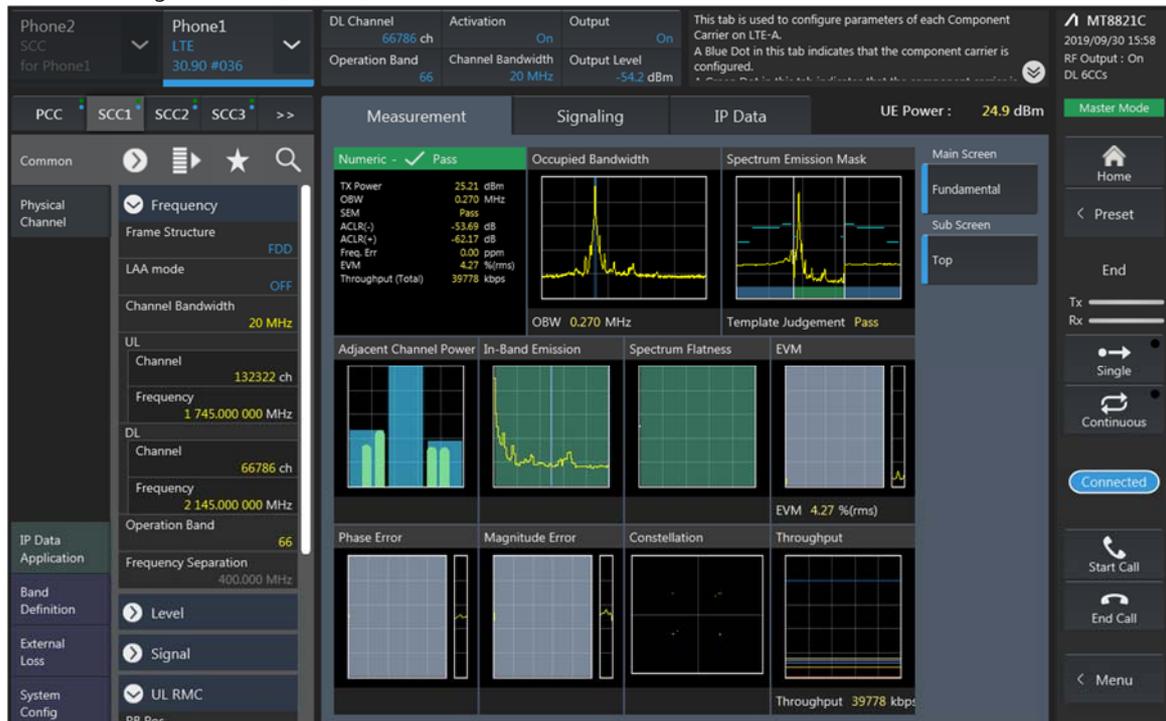
PCC										SCC				SCC				SCC				Tx Power					
Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset		Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm)	LTE Tx Power with DL CA Enabled (dBm)				
2	15	18675	1857.5	675	1937.5	16QAM	1	0		2	20	1100	1980	5	10	2525	881.5	30	10	9820	2355	66	20	66786	2145	13.11	13.14
2	15	18675	1857.5	675	1937.5	16QAM	1	0		2	20	1100	1980	5	10	2525	881.5	66	20	66786	2145	66	20	67236	2190	13.11	13.08
2	15	18675	1857.5	675	1937.5	16QAM	1	0		2	20	1100	1980	12	10	5095	737.5	30	10	9820	2355	66	20	67236	2190	13.11	13.16
2	15	18675	1857.5	675	1937.5	16QAM	1	0		2	20	1100	1980	12	10	5095	737.5	66	20	66786	2145	66	20	67236	2190	13.11	13.17
2	15	18675	1857.5	675	1937.5	16QAM	1	0		2	20	1100	1980	14	10	5330	763	30	10	9820	2355	66	20	67236	2190	13.11	13.13
2	15	18675	1857.5	675	1937.5	16QAM	1	0		2	20	1100	1980	14	10	5330	763	66	20	66786	2145	66	20	67236	2190	13.11	13.09
2	15	18675	1857.5	675	1937.5	16QAM	1	0		5	10	2525	881.5	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	13.11	13.14
2	15	18675	1857.5	675	1937.5	16QAM	1	0		12	10	5095	737.5	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	13.11	13.16
2	15	18675	1857.5	675	1937.5	16QAM	1	0		14	10	5330	763	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	13.11	13.08
2	15	18675	1857.5	675	1937.5	16QAM	1	0		2	20	1100	1980	5	10	2525	881.5	66	10	69987	2165.1	66	10	67086	2175	13.11	13.11
2	15	18675	1857.5	675	1937.5	16QAM	1	0		2	20	1100	1980	5	10	2525	881.5	66	20	66536	2120	66	20	66734	2139.8	13.11	13.13
2	15	18675	1857.5	675	1937.5	16QAM	1	0		5	5	2625	891.5	5	10	2553	884.3	30	10	9820	2355	66	20	67236	2190	13.11	13.13
2	15	18675	1857.5	675	1937.5	16QAM	1	0		5	5	2625	891.5	5	10	2553	884.3	66	20	66786	2145	66	20	67236	2190	13.11	13.07
2	15	18675	1857.5	675	1937.5	16QAM	1	0		5	5	2625	891.5	5	10	2553	884.3	66	10	69987	2165.1	66	10	67086	2175	13.11	13.1
2	15	18675	1857.5	675	1937.5	16QAM	1	0		5	5	2625	891.5	5	10	2553	884.3	66	20	66536	2120	66	20	66734	2139.8	13.11	13.16
5	5	20625	846.5	2625	891.5	16QAM	1	24	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	18.54	18.5	
5	5	20625	846.5	2625	891.5	16QAM	1	24	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	18.54	18.51	
5	5	20625	846.5	2625	891.5	16QAM	1	24	2	20	900	1960	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	18.54	18.58	
5	5	20625	846.5	2625	891.5	16QAM	1	24	2	20	900	1960	2	20	1100	1980	66	10	69987	2165.1	66	10	67086	2175	18.54	18.51	
5	5	20625	846.5	2625	891.5	16QAM	1	24	2	20	900	1960	2	20	1100	1980	66	20	66536	2120	66	20	66734	2139.8	18.54	18.54	
5	5	20625	846.5	2625	891.5	16QAM	1	24	5	10	2553	884.3	2	20	900	1960	30	10	9820	2355	66	20	67236	2190	18.54	18.5	
5	5	20625	846.5	2625	891.5	16QAM	1	24	5	10	2553	884.3	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	18.54	18.49	
5	5	20625	846.5	2625	891.5	16QAM	1	24	5	10	2553	884.3	2	20	900	1960	66	10	69987	2165.1	66	10	67086	2175	18.54	18.52	
5	5	20625	846.5	2625	891.5	16QAM	1	24	5	10	2553	884.3	2	20	900	1960	66	20	66536	2120	66	20	66734	2139.8	18.54	18.51	
12	10	23095	707.5	5095	737.5	16QAM	1	49	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	18.39	18.34	
12	10	23095	707.5	5095	737.5	16QAM	1	49	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	18.39	18.37	
12	10	23095	707.5	5095	737.5	16QAM	1	49	2	20	900	1960	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	18.39	18.39	
14	10	23330	793	5330	763	64QAM	1	0	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	18.22	18.24	
14	10	23330	793	5330	763	64QAM	1	0	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	18.22	18.16	
14	10	23330	793	5330	763	64QAM	1	0	2	20	900	1960	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	18.22	18.17	
30	5	27735	2312.5	9845	2357.5	16QAM	1	12	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	66	20	67236	2190	13.18	13.16	
30	5	27735	2312.5	9845	2357.5	16QAM	1	12	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	66	20	67236	2190	13.18	13.18	
30	5	27735	2312.5	9845	2357.5	16QAM	1	12	2	20	900	1960	2	20	1100	1980	14	10	5330	763	66	20	67236	2190	13.18	13.11	
30	5	27735	2312.5	9845	2357.5	16QAM	1	12	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	66	20	67236	2190	13.18	13.1	
30	5	27735	2312.5	9845	2357.5	16QAM	1	12	2	20	900	1960	12	10	5095	737.5	66	20	66786	2145	66	20	67236	2190	13.18	13.14	
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41	15	40620	2593	40620	2593	16QAM	1	0	41	20	40791	2610.1	41	20	41094	2640.4	41	20	41292	2660.2	41	20	41490	2680	12.36	12.34	
41	15	40620	2593	40620	2593	16QAM	1	0	41	20	40791	2610.1	41	20	40989	2629.9	41	20	41292	2660.2	41	20	41490	2680	12.36	12.3	
41	15	40620	2593	40620	2593	16QAM	1	0	41	20	40791	2610.1	41	20	40989	2629.9	41	20	41187	2649.7	41	20	41385	2669.5	12.36	12.31	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	30	10	9820	2355	13.44	13.42	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	30	10	9820	2355	13.44	13.46	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	2	20	900	1960	2	20	1100	1980	14	10	5330	763	30	10	9820	2355	13.44	13.36	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	66	20	66536	2120	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	13.44	13.43	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	66	20	66536	2120	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	13.44	13.38	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	66	20	66536	2120	2	20	900	1960	2	20	1100	1980	14	10	5330	763	13.44	13.44	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	66	20	66536	2120	2	20	900	1960	5	10	2525	881.5	30	10	9820	2355	13.44	13.37	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	66	20	66536	2120	2	20	900	1960	12	10	5095	737.5	30	10	9820	2355	13.44	13.41	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	66	20	66536	2120	2	20	900	1960	14	10	5330	763	30	10	9820	2355	13.44	13.44	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	66	20	900	1960	5	5	2625	891.5	5	10	2553	884.3	30	10	9820	2355	13.44	13.42	
66	15	132047	1717.5	66511	2117.5	16QAM	1	36	66	20	66536	2120	2	20	900	1960	5	5	2625	891.5	5	10	255				

LTE Down Link 6CA Call Setup

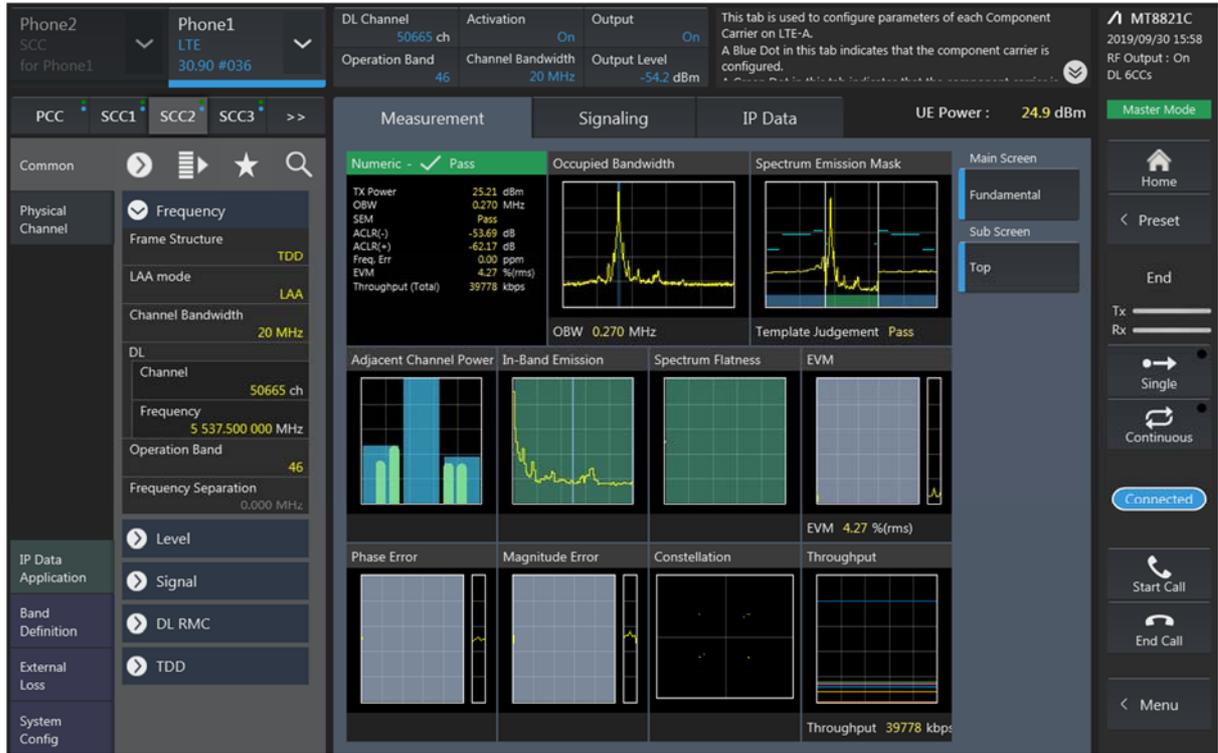
1)PCC Setting: Channel /RB/BW/Modulation



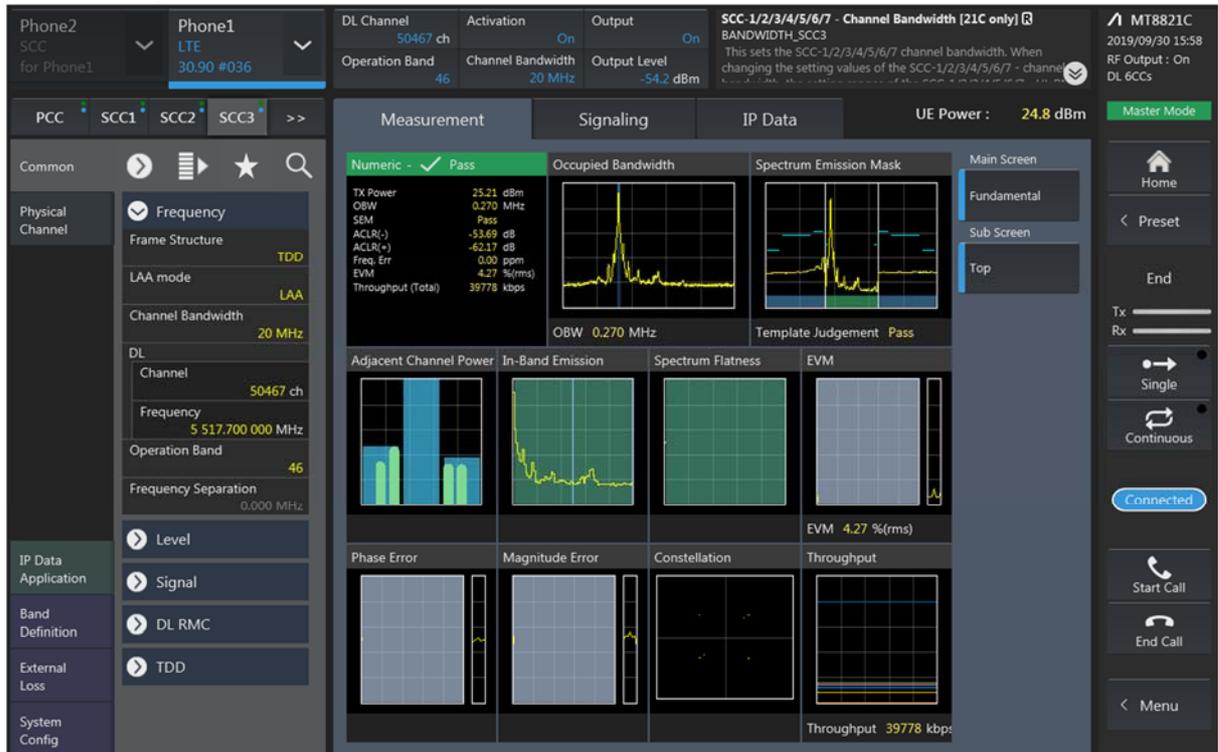
2) SCC1 Setting : Channel /RB/BW/Modulation



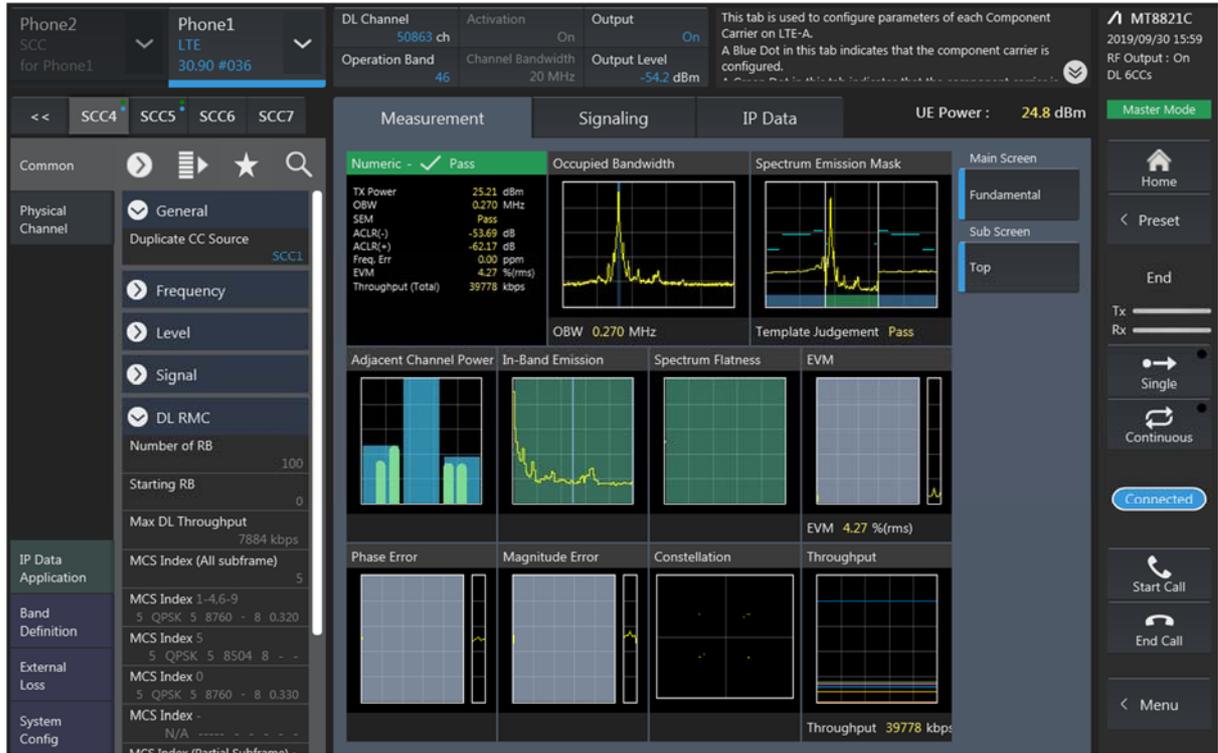
3) SCC1 Setting : Channel /RB/BW/Modulation



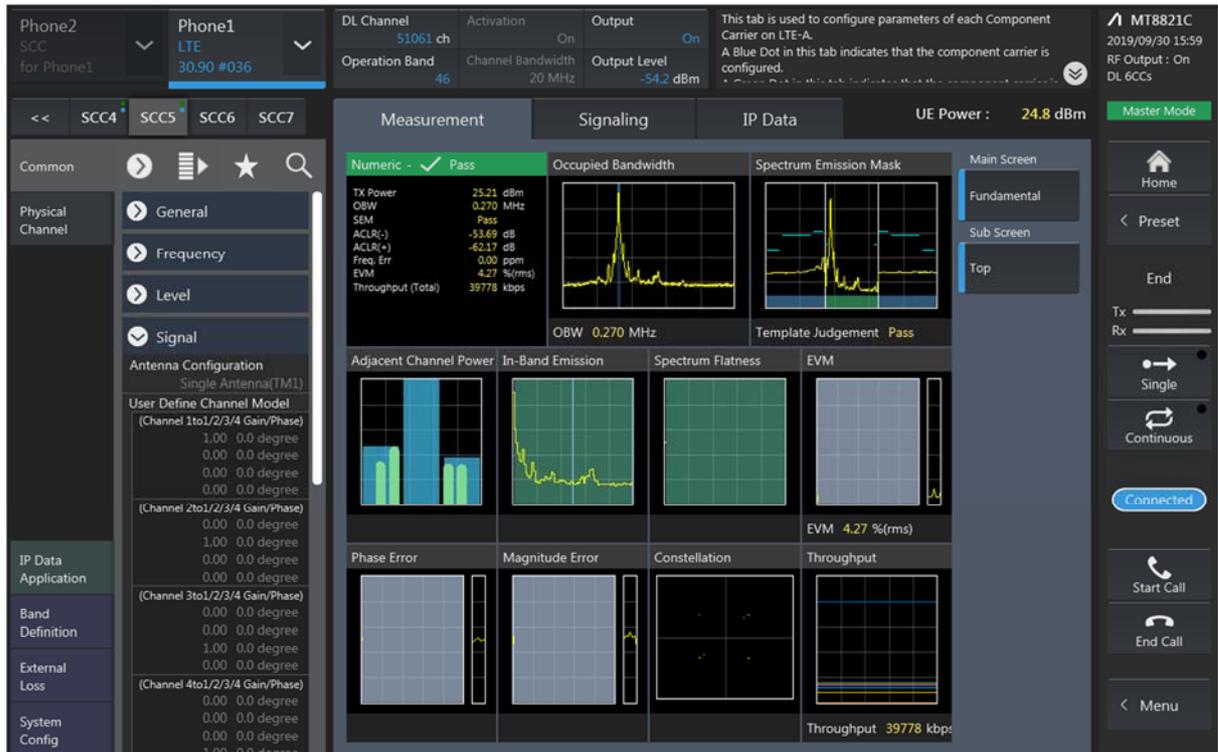
4) SCC1 Setting : Channel /RB/BW/Modulation



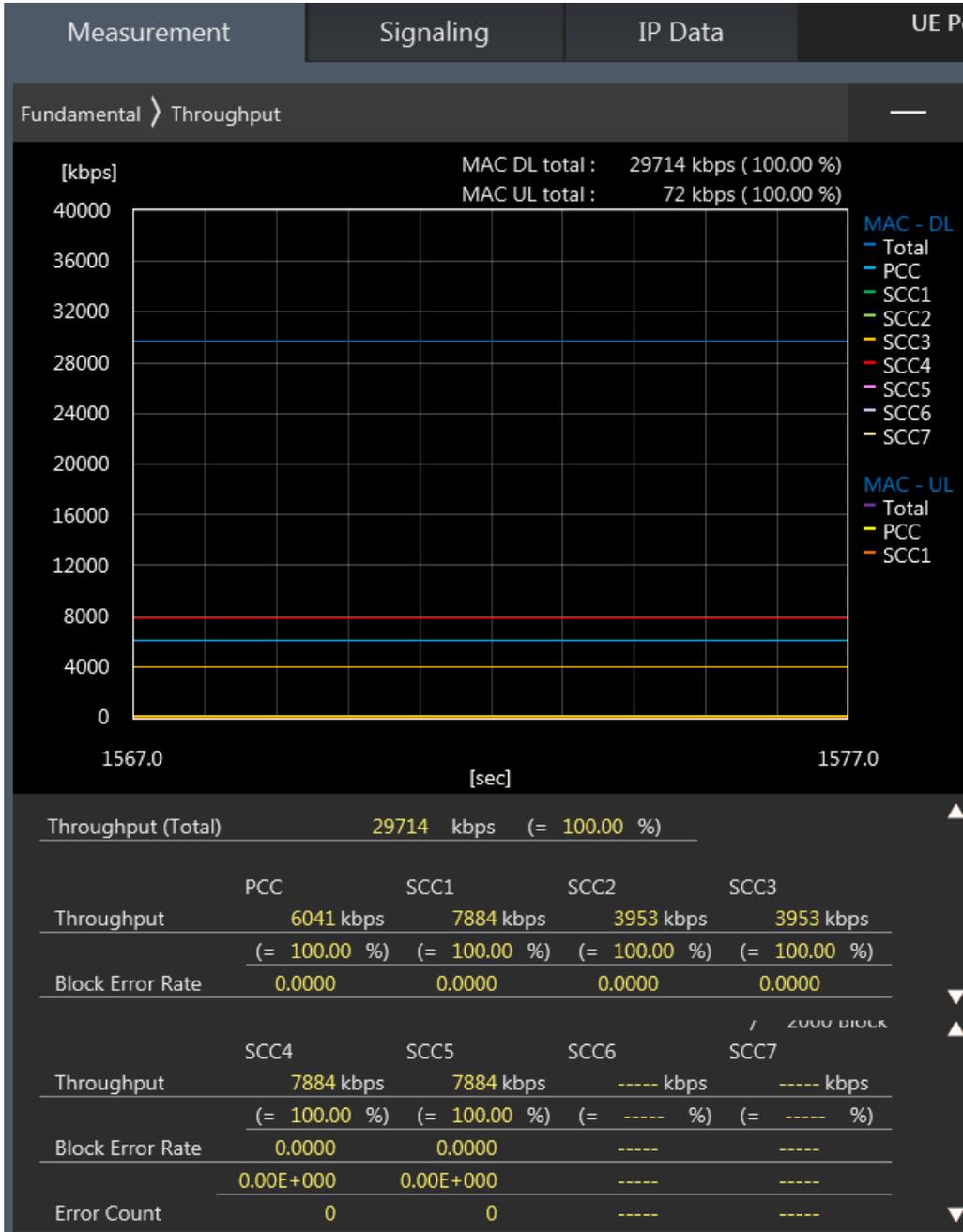
5) SCC1 Setting : Channel /RB/BW/Modulation



6) SCC1 Setting : Channel /RB/BW/Modulation



7) Throughput



6A Downlink Carrier aggregation Maximum Conducted Powers

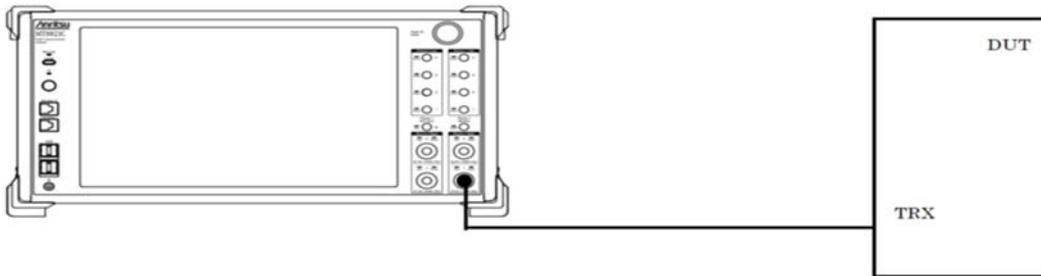
Combination	PCC										SCC		SCC		SCC		SCC		SCC		SCC		Tx Power								
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm)	LTE Tx Power with DL CA Enabled (dBm)
2A-46E-66A	2	15	18675	1857.5	675	1937.5	QPSK	1	74	46	20	50665	5537.5	46	20	50467	5517.7	46	20	50863	5557.3	46	20	51061	5577.1	66	20	66786	2145	25.18	25.21
66A-2A-46E	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	46	20	50665	5537.5	46	20	50467	5517.7	46	20	50863	5557.3	46	20	51061	5577.1	24.79	24.78

6CA Downlink Carrier aggregation Reduced Conducted Powers

Combination	PCC										SCC		SCC		SCC		SCC		SCC		SCC		Tx Power								
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm)	LTE Tx Power with DL CA Enabled (dBm)
2A-46E-66A	2	20	18900	1880	900	1960	16QAM	1	99	46	20	50665	5537.5	46	20	50467	5517.7	46	20	50863	5557.3	46	20	51061	5577.1	66	20	66786	2145	13.1	13.09
66A-2A-46E	66	15	132047	1717.5	66511	2117.5	16QAM	1	36	2	20	900	1960	46	20	50665	5537.5	46	20	50467	5517.7	46	20	50863	5557.3	46	20	51061	5577.1	13.44	13.45

11.2.4 LTE Up-link Carrier Aggregation Conducted Powers Setup

To measure the LTE UP CA power of this device, Anritsu's MT8821C was used to check the power as follows.



Power Measurement setup

.TDD CA_41C Intra-Band Contiguous Call Connection

Set to MT8821C with following parameters:

- Set up the call box for PCC Configuration for LTE Uplink CA
- Set up the call box for SCC Configuration for LTE Uplink CA
- Measure the maximum output power in Uplink LTE CA conditions.

The screenshot displays the MT8821C interface with the following details:

- Phone 1 Configuration:** LTE, 30.705#005
- DL Channel:** 40340 ch, Operation Band 41, Channel Bandwidth 20 MHz
- TPC Pattern:** All +3dB
- Input Level:** 30.0 dBm
- Output Level:** -58.0 dBm
- Authentication Key Ki [1xC]:** AUTHENT_KEY (32 bits and hexadecimal number)
- UE Power:** -15.8 dBm
- SequenceMonitor:** Shows a state transition diagram from Idle to Connected via Idle(Regist).
- UE Report:**

IMSI(DEC)	001010123456789
IMEI	355888090000740
IMEI (Check Digit)	355888090000745
UE Category	10
UE CategoryDL	10
UE CategoryUL	13
PDN Type	IPv4v6
- Signaling Trace:**

U-S	Message	Description	Time at RRC
-->	UInformationTransfer	IDENTITY RESPONSE	00:27:01.089 (00:00.015)
<<--	UECapabilityEnquiry		00:27:01.089 (00:00.000)
<<--	UECapabilityInformation		00:27:01.243 (00:00.154)
<<--	DLInformationTransfer		00:27:01.244 (00:00.001)
-->	UInformationTransfer	AUTHENTICATION REQUEST	00:27:01.283 (00:00.039)
<<--	DLInformationTransfer	SECURITY MODE COMMAND	00:27:01.293 (00:00.010)
-->	UInformationTransfer	SECURITY MODE COMPLETE	00:27:01.399 (00:00.106)
<<--	DLInformationTransfer	ACTIVATE TEST MODE	00:27:01.409 (00:00.010)
-->	UInformationTransfer	ACTIVATE TEST MODE COMPLETE	00:27:01.424 (00:00.015)
<<--	SecurityModeCommand		00:27:01.424 (00:00.000)
<<--	SecurityModeComplete		00:27:01.579 (00:00.155)
<<--	RRCCONNReconfiguration	ATTACH ACCEPT	00:27:01.594 (00:00.015)
<<--	RRCCONNReconfigurationComplete		00:27:01.618 (00:00.024)
-->	UInformationTransfer	ATTACH COMPLETE	00:27:01.639 (00:00.021)
<<--	RRCCONNECTIONRelease		00:27:01.739 (00:00.100)

Call 1 :Select PCC Configuration for Authentication key to Register

Call 2 :Select PCC Configuration for LTE UL CA and Cable loss

**Call 3 :Select PCC Configuration for LTE TDD " Uplink Downlink Configuration" set to "0"
And then Select "connect"button.**

Call 4 :Set to RB, offset, BW, modulation of SCC channel.

Call 5: Set to RB, offset, BW, modulation and Max Power conditions of PCC required test channel.

2CA 41C Uplink Carrier aggregation Conducted Powers- Maximum Power Mode

PCC									SCC						Tx Power		
Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Modulation	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power with UL CA Enabled(dBm)
41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	QPSK	1	0	24.01	23.89

2CA 41C Uplink Carrier aggregation Conducted Powers- Reduced Power Mode

PCC									SCC						Tx Power		
Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Modulation	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power with UL CA Enabled(dBm)
41	20	40620	2593	40620	2593	QPSK	1	0	41	20	40422	2573.2	QPSK	1	99	12.32	12.46

Uplink Carrier aggregation:

1. This device supports uplink carrier aggregation for LTE CA_41C with a maximum of 20MHz component carriers. For intra-band contiguous carrier aggregation scenarios, 3GPP36.101 Table 6.2.2A-1 specifies that aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted Powers and MPR setting in this device are permanently implemented per the above 3GPP requirements.
2. Per Fall 2017 TCBC Workshop Notes, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

Power Measurement setup



11.3 WIFI Conducted Power measurement method

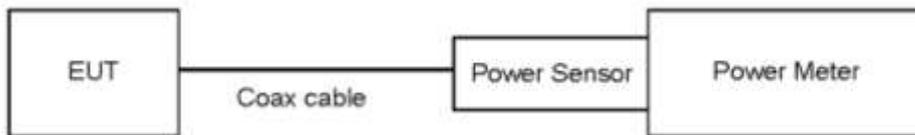
Un-Licensed bands (DTS Band)

Test Description	Test Procedure Used
Conducted Output Power	- KDB 558074 v05 - Section 8.3.2.3 - ANSI 63.10-2013 - Section 11.9.2.3

Test Procedure

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Test setup



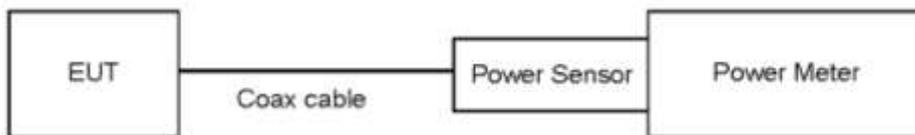
Un-Licensed bands (NII Band)

Test Description	Test Procedure Used
Conducted Output Power	- KDB 789033 D02 v02r01 - Section E.3.a

Test Procedure

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Test setup



11.3.1 IEEE 802.11 (2.4 GHz) Maximum Conducted Power

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]		
			Ant. 1	Ant. 2	MIMO
802.11b	2 412	1	18.31	17.80	
	2 437	6	18.25	18.01	
	2 462	11	18.08	18.02	
802.11g	2 412	1	16.07	15.55	
	2 437	6	16.13	15.72	
	2 462	11	15.94	15.80	
802.11n (HT20)	2 412	1	15.00	14.32	17.68
	2 437	6	15.96	15.54	18.76
	2 462	11	15.70	15.61	18.66

11.3.2 IEEE 802.11 (2.4 GHz) Reduced Conducted Power

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) Reduced Conducted Power [dBm]		
			Ant. 1	Ant. 2	MIMO
802.11b	2 412	1	13.64	13.24	
	2 437	6	13.16	13.00	
	2 462	11	13.11	12.36	
802.11g	2 412	1	13.18	12.88	
	2 437	6	12.82	12.61	
	2 462	11	13.03	12.37	
802.11n (HT20)	2 412	1	13.02	12.69	15.87
	2 437	6	12.70	12.40	15.56
	2 462	11	12.78	12.23	15.52

11.3.3 IEEE 802.11 (5 GHz) Maximum Conducted Power

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Average RF Conducted Power [dBm] 802.11a (20 MHz BW)		IEEE 802.11 (5 GHz) Average RF Conducted Power [dBm] 802.11n (20 MHz BW)	
			Ant. 1	Ant. 2	Ant. 1	Ant. 2
			802.11a/n (20 MHz BW)	5 180	36	13.33
5 200	40	13.45		12.43	13.23	12.29
5 220	44	13.33		12.45	13.21	12.41
5 240	48	13.50		12.21	13.29	11.99
5 260	52	13.08		12.55	12.99	12.64
5 280	56	13.01		12.49	13.02	12.44
5 300	60	13.31		12.24	13.22	12.35
5 320	64	13.15		12.40	13.25	12.27
5 500	100	13.28		13.11	13.2	13.19
5 580	116	13.23		12.44	12.97	12.56
5 600	120	12.90		12.65	12.84	12.71
5 620	124	12.94		12.66	12.79	12.51
5 720	144	13.09		12.76	13.08	12.77
5 745	149	12.79		12.80	12.85	12.75
5 785	157	12.85		12.59	12.74	12.69
5 825	165	13.03	12.62	12.98	12.67	

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Average RF Conducted Power [dBm] 802.11n (20 MHz BW)
			MIMO
802.11n (20 MHz BW)	5 180	36	15.86
	5 200	40	15.80
	5 220	44	15.84
	5 240	48	15.70
	5 260	52	15.83
	5 280	56	15.75
	5 300	60	15.82
	5 320	64	15.80
	5 500	100	16.21
	5 580	116	15.78
	5 600	120	15.79
	5 620	124	15.66
	5 720	144	15.94
	5 745	149	15.81
	5 785	157	15.73
5 825	165	15.84	

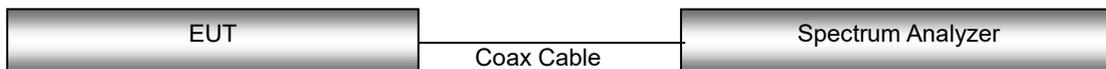
11.3.4 IEEE 802.11 (5 GHz) Reduced Conducted Power

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]		
			Ant. 1	Ant. 2	MIMO
802.11ac (80 MHz BW)	5 210	42	8.56	7.92	10.80
	5 290	58	8.14	7.48	10.37
	5 530	106	8.28	6.99	10.23
	5 610	122	8.09	7.24	10.24
	5 690	138	7.54	8.05	10.35
	5 775	155	8.00	7.92	10.51

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission mode with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.

Test Configuration



11.4 Bluetooth Conducted Power

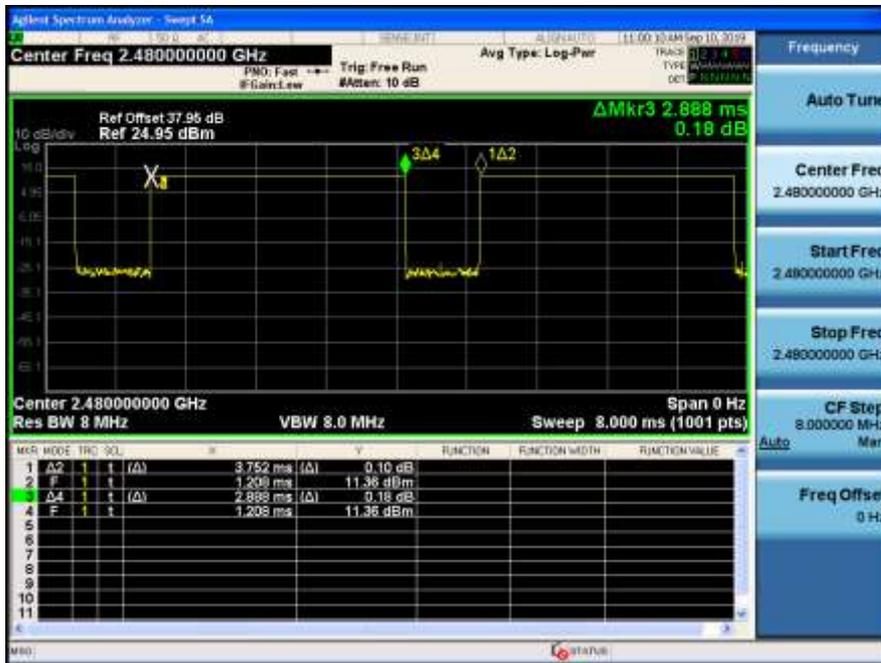
The Burst averaged-conducted power

Mode	Channel	Bluetooth Power [dBm]
DH5	0	10.22
	39	9.73
	78	10.98
2-DH5	0	9.59
	39	9.14
	78	10.31
3-DH5	0	9.58
	39	9.13
	78	10.32

Per October 2016 TCB Workshop Notes:

When call box and Bluetooth protocol are used for Bluetooth SAR measurement, time-domain plot is required to identify duty factor for supporting the test setup and result.

Bluetooth duty cycle was measured using Bluetooth tester equipment (CBT / R&S) with Bluetooth protocol. DH5 mode is the highest duty cycle and conducted power. SAR test were performed at DH5 mode.



Duty Cycle

$$= (\text{BT-On time} / \text{BT-Full time}) = (2.888 / 3.752) = 0.770 \text{ (DH5)}$$

Duty factor = 1/Duty cycle : 1.299

12. System Verification

12.1 Tissue Verification

The body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity.

Table for Body Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
09/04/2019	21.3	750B	700	0.914	54.954	0.959	55.730	-4.69%	-1.39%
			750	0.972	54.383	0.963	55.530	0.93%	-2.07%
			785	1.010	54.024	0.966	55.397	4.55%	-2.48%
09/06/2019	21.4	750B	680	0.915	56.159	0.958	55.806	-4.49%	0.63%
			700	0.922	56.038	0.959	55.730	-3.86%	0.55%
			750	0.963	55.515	0.963	55.530	0.00%	-0.03%
09/05/2019	20.6	835B	820	0.943	53.591	0.969	55.260	-2.68%	-3.02%
			835	0.961	53.359	0.970	55.200	-0.93%	-3.34%
			850	0.971	53.128	0.988	55.150	-1.72%	-3.67%
09/10/2019	21.1	1800B	1710	1.402	54.972	1.463	53.534	-4.17%	2.69%
			1750	1.434	54.918	1.488	53.430	-3.63%	2.78%
			1800	1.488	54.692	1.520	53.300	-2.11%	2.61%
09/11/2019	21.2	1900B	1850	1.508	53.622	1.520	53.300	-0.79%	0.60%
			1900	1.556	53.560	1.520	53.300	2.37%	0.49%
			1910	1.565	53.600	1.520	53.300	2.96%	0.56%
09/06/2019	20.4	2300B	2300	1.771	54.114	1.807	52.900	-1.99%	2.29%
			2307.5	1.770	54.133	1.814	52.890	-2.43%	2.35%
			2310	1.771	54.139	1.816	52.886	-2.48%	2.37%
			2312.5	1.778	54.130	1.819	52.882	-2.25%	2.36%

Table for Body Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
09/16/2019	22.4	2450B	2400	1.883	51.899	1.902	52.770	-1.00%	-1.65%
			2450	1.941	51.658	1.950	52.700	-0.46%	-1.98%
			2500	2.006	51.612	2.021	52.640	-0.74%	-1.95%
09/05/2019	21.0	2600B	2500	2.006	53.545	2.021	52.640	-0.74%	1.72%
			2600	2.108	53.167	2.163	52.510	-2.54%	1.25%
			2690	2.224	53.034	2.291	52.394	-2.92%	1.22%
09/25/2019	20.5	2600B	2500	2.005	53.538	2.021	52.640	-0.79%	1.71%
			2600	2.108	53.208	2.163	52.510	-2.54%	1.33%
			2690	2.227	53.016	2.291	52.394	-2.79%	1.19%
09/26/2019	23.5	2600B	2500	2.003	53.539	2.021	52.640	-0.89%	1.71%
			2600	2.106	53.177	2.163	52.510	-2.64%	1.27%
			2690	2.221	53.004	2.291	52.394	-3.06%	1.16%
09/20/2019	20.4	5180B-5825B	5180	5.128	48.732	5.276	49.038	-2.81%	-0.62%
			5250	5.354	48.087	5.358	48.950	-0.07%	-1.76%
			5280	5.414	48.836	5.393	48.908	0.39%	-0.15%
			5320	5.345	47.904	5.439	48.852	-1.73%	-1.94%
			5500	5.656	47.925	5.650	48.610	0.11%	-1.41%
			5600	5.751	47.678	5.766	48.470	-0.26%	-1.63%
			5750	6.043	47.410	5.942	48.270	1.70%	-1.78%
			5800	5.912	47.744	6.000	48.200	-1.47%	-0.95%
5825	5.836	47.016	6.029	48.165	-3.20%	-2.39%			

12.2 System Verification

* Input Power: 50 mW

Freq. [MHz]	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp. [°C]	Liquid Temp. [°C]	1 W Target SAR _{1g} (SPEAG) [W/kg]	50mW Measured SAR _{1g} [W/kg]	1 W Normalized SAR _{1g} [W/kg]	Deviation [%]	Limit [%]
750	09/04/2019	3967	1014	Body	21.4	21.3	8.48	0.434	8.68	+ 2.36	± 10
750	09/06/2019	3967	1014	Body	21.4	21.4	8.48	0.407	8.14	- 4.01	± 10
835	09/05/2019	3967	441	Body	20.6	20.6	9.73	0.490	9.80	+ 0.72	± 10
1 800	09/10/2019	3967	2d007	Body	21.2	21.1	38.4	1.97	39.4	+ 2.60	± 10
1 900	09/11/2019	3967	5d032	Body	21.3	21.2	39.7	1.97	39.4	- 0.76	± 10
2 300	09/06/2019	3797	1010	Body	20.4	20.4	46.8	2.3	46.0	- 1.71	± 10
2 450	09/16/2019	3967	743	Body	22.5	22.4	49.9	2.38	47.6	- 4.61	± 10
2 600	09/05/2019	3797	1015	Body	21.0	21.0	54.8	2.77	55.4	+ 1.09	± 10
2 600	09/25/2019	3797	1015	Body	20.5	20.5	54.8	2.80	56.0	+ 2.19	± 10
2 600	09/26/2019	3797	1015	Body	23.6	23.5	54.8	2.60	52	- 5.11	± 10
5 200	09/20/2019	3967	1253	Body	20.5	20.4	78.0	3.99	79.8	+ 2.31	± 10
5 600	09/20/2019	3967	1253	Body	20.5	20.4	81.6	3.90	78.0	- 4.41	± 10
5 750	09/20/2019	3967	1253	Body	20.5	20.4	77.3	3.68	73.6	- 4.79	± 10

12.3 System Verification Procedure

SAR measurement was prior to assessment, the system is verified to the ± 10 % of the specifications at each frequency band by using the system verification kit. (Graphic Plots Attached)

- Cabling the system, using the verification kit equipment.
- Generate about 50 mW Input level from the signal generator to the Dipole Antenna.
- Dipole antenna was placed below the flat phantom.
- The measured one-gram SAR at the surface of the phantom above the dipole feed-point should be within 10 % of the target reference value.
- The results are normalized to 1 W input power.

Note;

SAR Verification was performed according to the FCC KDB 865664 D01v01r04.

13. SAR Test Data Summary

13.1 SAR Measurement Results

UMTS 850 Body SAR													
Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.												
826.4	4132	RMC	19.0	18.30	0.12	Rear	Active	1:1	0	0.963	1.175	1.132	-
836.6	4183	RMC	19.0	18.42	0.04	Rear	Active	1:1	0	0.949	1.143	1.085	-
846.6	4233	RMC	19.0	18.38	0.13	Rear	Active	1:1	0	1.01	1.153	1.165	-
836.6	4183	RMC	25.0	24.12	0.18	Rear	Inactive	1:1	14	0.249	1.225	0.305	-
846.6	4233	RMC	19.0	18.38	0.19	Rear	Active	1:1	0	1.01	1.153	1.165	1*
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram					

Note: * Data entry indicate Variability measurement.

UMTS 1700 Body SAR													
Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.												
1 712.4	1312	RMC	14.0	13.47	0.13	Rear	Active	1:1	0	0.990	1.130	1.119	-
1 732.4	1412	RMC	14.0	13.44	0.11	Rear	Active	1:1	0	0.975	1.138	1.110	-
1 752.6	1513	RMC	14.0	13.37	0.17	Rear	Active	1:1	0	1.04	1.156	1.202	2
1 712.4	1312	RMC	25.0	24.16	0.13	Rear	Inactive	1:1	13	0.905	1.213	1.098	-
1 732.4	1412	RMC	25.0	24.16	0.01	Rear	Inactive	1:1	13	0.865	1.213	1.049	-
1 752.6	1513	RMC	25.0	24.05	0.06	Rear	Inactive	1:1	13	0.896	1.245	1.116	-
1 752.6	1513	RMC	14.0	13.37	0.16	Rear	Active	1:1	0	1.02	1.156	1.179	*
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram					

Note: * Data entry indicate Variability measurement.

UMTS 1900 Body SAR													
Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.												
1 852.4	9262	RMC	14	13.89	0.10	Rear	Active	1:1	0	1.06	1.026	1.088	3
1 880	9400	RMC	14	13.84	0.16	Rear	Active	1:1	0	1.05	1.038	1.090	-
1 907.6	9538	RMC	14	13.78	0.18	Rear	Active	1:1	0	1.05	1.052	1.105	4
1 852.4	9262	RMC	25	24.55	0.10	Rear	Inactive	1:1	13	0.932	1.109	1.034	-
1 880	9400	RMC	25	24.49	0.02	Rear	Inactive	1:1	13	0.952	1.125	1.071	-
1 907.6	9538	RMC	25	24.45	0.19	Rear	Inactive	1:1	13	0.945	1.135	1.073	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram					

LTE Band 7 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
2 510	20850	QPSK	20	13.5	12.23	0.13	Rear	Active	0	1	0	1:1	0	0.777	1.340	1.041	-
2 535	21100	QPSK	20	13.5	12.31	0.03	Rear	Active	0	1	0	1:1	0	0.831	1.315	1.093	-
2 560	21350	QPSK	20	13.5	12.48	0.12	Rear	Active	0	1	0	1:1	0	0.819	1.265	1.036	-
2 510	20850	QPSK	20	13.5	12.33	0.16	Rear	Active	0	50	25	1:1	0	0.880	1.309	1.152	-
2 535	21100	QPSK	20	13.5	12.42	0.13	Rear	Active	0	50	25	1:1	0	0.934	1.282	1.197	5
2 560	21350	QPSK	20	13.5	12.52	-0.08	Rear	Active	0	50	25	1:1	0	0.899	1.253	1.126	-
2 560	21350	QPSK	20	13.5	12.48	-0.16	Rear	Active	0	100	0	1:1	0	0.891	1.265	1.127	-
2 560	21350	QPSK	20	24.5	23.92	0.15	Rear	Inactive	0	1	0	1:1	14	0.557	1.143	0.637	-
2 560	21350	QPSK	20	23.5	23.00	0.15	Rear	Inactive	1	50	0	1:1	14	0.455	1.122	0.511	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram									

LTE Band 12 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
707.5	23095	QPSK	10	19.0	18.10	0.11	Rear	Active	0	1	0	1:1	0	0.618	1.230	0.760	-
707.5	23095	QPSK	10	19.0	18.20	0.13	Rear	Active	0	25	12	1:1	0	0.658	1.202	0.791	6
707.5	23095	QPSK	10	25.5	24.65	0.08	Rear	Inactive	0	1	0	1:1	14	0.330	1.216	0.401	-
707.5	23095	QPSK	10	24.5	23.78	0.12	Rear	Inactive	1	25	0	1:1	14	0.277	1.180	0.327	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

LTE Band 13 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
782	23230	QPSK	10	19.0	17.89	0.12	Rear	Active	0	1	0	1:1	0	0.876	1.291	1.131	-
782	23230	QPSK	10	19.0	17.93	0.19	Rear	Active	0	25	12	1:1	0	0.908	1.279	1.161	7
782	23230	QPSK	10	19.0	17.92	0.11	Rear	Active	0	50	0	1:1	0	0.905	1.282	1.160	-
782	23230	QPSK	10	25.5	24.37	0.17	Rear	Inactive	0	1	0	1:1	14	0.302	1.297	0.392	-
782	23230	QPSK	10	24.5	23.45	0.13	Rear	Inactive	1	25	12	1:1	14	0.233	1.274	0.297	-
782	23230	QPSK	10	19.0	17.93	0.17	Rear	Active	0	25	12	1:1	0	0.905	1.279	1.157	*
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

LTE Band 14 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
793	23330	QPSK	10	19.0	17.86	0.03	Rear	Active	0	1	0	1:1	0	0.877	1.300	1.140	-
793	23330	QPSK	10	19.0	17.93	0.16	Rear	Active	0	25	0	1:1	0	0.903	1.279	1.155	8
793	23330	QPSK	10	19.0	17.85	0.09	Rear	Active	0	50	0	1:1	0	0.891	1.303	1.161	9
793	23330	QPSK	10	25.5	23.90	0.13	Rear	Inactive	0	1	24	1:1	14	0.278	1.445	0.402	-
793	23330	QPSK	10	24.5	22.94	0.15	Rear	Inactive	1	25	0	1:1	14	0.235	1.432	0.337	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

LTE Band 25 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
1 860	26140	QPSK	20	14.0	12.78	0.16	Rear	Active	0	1	0	1:1	0	1.04	1.324	1.377	-
1 882.5	26365	QPSK	20	14.0	12.74	0.11	Rear	Active	0	1	0	1:1	0	1.04	1.337	1.390	-
1 905	26590	QPSK	20	14.0	12.80	0.15	Rear	Active	0	1	0	1:1	0	1.06	1.318	1.397	10
1 860	26140	QPSK	20	14.0	12.84	0.15	Rear	Active	0	50	0	1:1	0	1.06	1.306	1.384	-
1 882.5	26365	QPSK	20	14.0	12.93	0.05	Rear	Active	0	50	25	1:1	0	1.09	1.279	1.394	11
1 905	26590	QPSK	20	14.0	12.89	-0.10	Rear	Active	0	50	0	1:1	0	1.08	1.291	1.394	-
1 882.5	26365	QPSK	20	14.0	12.89	0.14	Rear	Active	0	100	0	1:1	0	1.07	1.291	1.381	-
1 860	26140	QPSK	20	25.5	24.74	0.11	Rear	Inactive	0	1	0	1:1	13	1.08	1.191	1.286	-
1 882.5	26365	QPSK	20	25.5	24.75	0.14	Rear	Inactive	0	1	0	1:1	13	1.08	1.189	1.284	-
1 905	26590	QPSK	20	25.5	24.63	-0.11	Rear	Inactive	0	1	0	1:1	13	1.09	1.222	1.332	-
1 860	26140	QPSK	20	24.5	23.83	-0.04	Rear	Inactive	1	50	25	1:1	13	0.879	1.167	1.026	-
1 882.5	26365	QPSK	20	24.5	23.80	0.05	Rear	Inactive	1	50	25	1:1	13	0.888	1.175	1.043	-
1 905	26590	QPSK	20	24.5	23.67	-0.01	Rear	Inactive	1	50	25	1:1	13	0.880	1.211	1.066	-
1 860	26140	QPSK	20	24.5	23.78	0.10	Rear	Inactive	1	100	0	1:1	13	0.880	1.180	1.038	-
1 882.5	26365	QPSK	20	14.0	12.93	0.11	Rear	Active	0	50	25	1:1	0	1.08	1.279	1.381	*
1 905	26590	QPSK	20	14.0	12.80	0.14	Rear	Active	0	1	0	1:1	0	1.05	1.318	1.384	**
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

** Data entry indicate Device holder perturbation measurement.

LTE Band 26 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
831.5	26865	QPSK	15	19.0	18.04	0.14	Rear	Active	0	1	0	1:1	0	0.867	1.247	1.081	-
831.5	26865	QPSK	15	19.0	18.11	0.13	Rear	Active	0	36	18	1:1	0	0.900	1.227	1.104	12
831.5	26865	QPSK	15	19.0	18.10	0.18	Rear	Active	0	75	0	1:1	0	0.830	1.230	1.021	-
831.5	26865	QPSK	15	25.0	24.12	0.12	Rear	Inactive	0	1	0	1:1	14	0.217	1.225	0.266	-
831.5	26865	QPSK	15	24.0	23.18	0.19	Rear	Inactive	1	36	18	1:1	14	0.168	1.208	0.203	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

LTE Band 30 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
2 310	27710	QPSK	10	14.0	12.81	-0.13	Rear	Active	0	1	0	1:1	0	0.838	1.315	1.102	-
2 310	27710	QPSK	10	14.0	12.92	-0.12	Rear	Active	0	25	12	1:1	0	0.861	1.282	1.104	13
2 310	27710	QPSK	10	14.0	12.86	-0.19	Rear	Active	0	50	0	1:1	0	0.852	1.300	1.108	14
2 310	27710	QPSK	10	25.0	23.75	-0.02	Rear	Inactive	0	1	0	1:1	14	0.544	1.334	0.726	-
2 310	27710	QPSK	10	24.0	22.85	0.02	Rear	Inactive	1	25	12	1:1	14	0.447	1.303	0.582	-
2 310	27710	QPSK	10	14.0	12.92	0.11	Rear	Active	0	25	12	1:1	0	0.818	1.282	1.049	*
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

LTE TDD Band 38 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
2 580	37850	QPSK	20	14.0	13.54	0.15	Rear	Active	0	1	0	1:1.58	0	0.951	1.112	1.058	-
2 595	38000	QPSK	20	14.0	13.60	0.11	Rear	Active	0	1	0	1:1.58	0	1.02	1.096	1.118	15
2 610	38150	QPSK	20	14.0	13.73	-0.10	Rear	Active	0	1	0	1:1.58	0	1.04	1.064	1.107	-
2 580	37850	QPSK	20	14.0	13.77	-0.16	Rear	Active	0	50	0	1:1.58	0	1.01	1.054	1.065	-
2 595	38000	QPSK	20	14.0	13.79	-0.10	Rear	Active	0	50	0	1:1.58	0	1.06	1.050	1.113	-
2 610	38150	QPSK	20	14.0	13.92	-0.03	Rear	Active	0	50	0	1:1.58	0	1.09	1.019	1.111	16
2 610	38150	QPSK	20	14.0	13.86	-0.18	Rear	Active	0	100	0	1:1.58	0	1.08	1.033	1.116	-
2 610	38150	QPSK	20	25.0	24.61	-0.14	Rear	Inactive	0	1	0	1:1.58	14	0.408	1.094	0.446	-
2 610	38150	QPSK	20	24.0	23.80	-0.01	Rear	Inactive	1	50	0	1:1.58	14	0.330	1.047	0.346	-
2 610	38150	QPSK	20	14.0	13.92	-0.13	Rear	Active	0	50	0	1:1.58	0	1.06	1.019	1.080	*
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

LTE TDD Band 40 Body SAR _ Low frequency range																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
2 310	38750	QPSK	10	12.0	10.99	-0.16	Rear	Active	0	1	24	1:1.58	0	0.295	1.262	0.372	17
2 310	38750	QPSK	10	12.0	10.16	-0.18	Rear	Active	0	25	10	1:1.58	0	0.244	1.528	0.373	18
2 310	38750	QPSK	10	12.0	10.97	0.18	Rear	Inactive	0	1	0	1:1.58	14	0.017	1.268	0.022	-
2 310	38750	QPSK	10	12.0	10.13	0.16	Rear	Inactive	1	25	12	1:1.58	14	0.013	1.538	0.020	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

LTE TDD Band 40 Body SAR _ Upper Frequency range																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
2 355	39200	QPSK	10	12.0	11.18	-0.05	Rear	Active	0	1	24	1:1.58	0	0.321	1.208	0.388	19
2 355	39200	QPSK	10	12.0	10.35	-0.16	Rear	Active	0	25	0	1:1.58	0	0.263	1.462	0.385	-
2 355	39200	QPSK	10	12.0	11.21	0.19	Rear	Inactive	0	1	24	1:1.58	14	0.018	1.199	0.022	-
2 355	39200	QPSK	10	12.0	10.35	-0.13	Rear	Inactive	1	25	0	1:1.58	14	0.015	1.462	0.022	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

LTE TDD Band 41 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
2 593(PC3)	40620	QPSK	20	13.0	12.32	-0.08	Rear	Active	0	1	0	1:1.58	0	0.453	1.169	0.530	-
2 593(PC3)	40620	QPSK	20	13.0	12.26	0.16	Rear	Active	0	50	0	1:1.58	0	0.462	1.186	0.548	-
2 506(PC3)	39750	QPSK	20	25.0	24.01	0.13	Rear	Inactive	0	1	99	1:1.58	14	0.370	1.256	0.465	-
2 593(PC3)	40620	QPSK	20	24.0	23.18	0.16	Rear	Inactive	1	50	25	1:1.58	14	0.339	1.208	0.410	-
2 506 (PC2)	39750	QPSK	20	27.0	26.18	-0.16	Rear	Inactive	0	1	99	1:2.31	14	0.416	1.208	0.502	**
2 593(PC2)	40620	QPSK	20	13.0	12.97	0.1	Rear	Active	0	50	0	1:1.58	0	0.421	1.007	0.424	**
PCC	2 593	40620	40	13.0	12.46	-0.14	Rear	Active	0	1	0	1:1.58	0	0.489	1.132	0.554	20*
SCC	2 573.2	40422								1	99						
PCC	2 506	39750	40	25.0	23.89	-0.06	Rear	Inactive	0	1	99	1:1.58	14	0.379	1.291	0.489	*
SCC	2525.8	39948								1	0						
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate 2CC UP link measurement result

** Data entry indicate LTE 41 Power class 2(HPUE)

When Power reduction is applied to LTE B41 PC 2(HPUE), The power level of LTE B41 PC became same as the reduction power of LTE B41 PC3

LTE Band 66 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
1 720	132072	QPSK	20	14.0	13.03	0.16	Rear	Active	0	1	0	1:1	0	0.900	1.250	1.125	-
1 745	132322	QPSK	20	14.0	12.86	0.18	Rear	Active	0	1	0	1:1	0	0.935	1.300	1.216	-
1 770	132572	QPSK	20	14.0	12.76	-0.13	Rear	Active	0	1	0	1:1	0	0.951	1.330	1.265	-
1 720	132072	QPSK	20	14.0	13.18	0.19	Rear	Active	0	50	0	1:1	0	0.941	1.208	1.137	-
1 745	132322	QPSK	20	14.0	13.03	0.15	Rear	Active	0	50	0	1:1	0	0.965	1.250	1.206	-
1 770	132572	QPSK	20	14.0	12.96	-0.18	Rear	Active	0	50	0	1:1	0	1.00	1.271	1.271	21
1 720	132072	QPSK	20	14.0	13.09	0.16	Rear	Active	0	100	0	1:1	0	0.930	1.233	1.147	-
1 720	132072	QPSK	20	25.5	24.76	0.09	Rear	Inactive	0	1	0	1:1	13	1.01	1.186	1.198	-
1 745	132322	QPSK	20	25.5	24.74	0.04	Rear	Inactive	0	1	0	1:1	13	0.996	1.191	1.186	-
1 770	132572	QPSK	20	25.5	24.75	-0.01	Rear	Inactive	0	1	0	1:1	13	1.02	1.189	1.213	-
1 720	132072	QPSK	20	24.5	23.90	-0.01	Rear	Inactive	1	50	0	1:1	13	0.831	1.148	0.954	-
1 745	132322	QPSK	20	24.5	23.87	-0.02	Rear	Inactive	1	50	0	1:1	13	0.819	1.156	0.947	-
1 770	132572	QPSK	20	24.5	23.88	-0.01	Rear	Inactive	1	50	25	1:1	13	0.812	1.153	0.936	-
1 720	132072	QPSK	20	24.5	23.88	0.13	Rear	Inactive	1	100	0	1:1	13	0.819	1.153	0.944	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

LTE Band 71 Body SAR																	
Frequency		Mode	BW	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
688	133372	QPSK	20	19.0	18.35	0.14	Rear	Active	0	1	0	1:1	0	0.550	1.161	0.639	-
673	133222	QPSK	20	19.0	18.43	0.17	Rear	Active	0	50	49	1:1	0	0.832	1.140	0.948	22
680.5	133297	QPSK	20	19.0	18.40	0.10	Rear	Active	0	50	25	1:1	0	0.576	1.148	0.661	-
688	133372	QPSK	20	19.0	18.35	0.14	Rear	Active	0	50	25	1:1	0	0.611	1.161	0.709	-
680.5	133297	QPSK	20	19.0	18.40	0.17	Rear	Active	0	100	0	1:1	0	0.567	1.148	0.651	-
688	133372	QPSK	20	25.5	24.83	0.14	Rear	Inactive	0	1	0	1:1	14	0.273	1.167	0.319	-
673	133222	QPSK	20	24.5	23.92	0.11	Rear	Inactive	1	50	49	1:1	14	0.297	1.143	0.339	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

Wi-Fi (DTS) Body SAR																		
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant.	Position	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																	
2 412	1	802.11b	22	1	14	13.64	0.11	Rear	Ant1	Active	98.62	0	0.867	0.472	1.086	1.014	0.520	-
2 412	1	802.11b	22	1	14	13.24	0.15	Rear	Ant2	Active	98.62	0	1.21	0.708	1.191	1.014	0.855	-
2 437	6	802.11b	22	1	14	13.00	1.21	Rear	Ant2	Active	98.62	0	1.21	0.737	1.259	1.014	0.941	-
2 462	11	802.11b	22	1	14	12.36	-0.14	Rear	Ant2	Active	98.62	0	0.905	0.588	1.459	1.014	0.870	-
2 412	1	802.11n	22	MCS8	17	15.87	0.14	Rear	MIMO	Active	97.33	0	1.13	0.578	1.297	1.027	0.770	-
2 412	1	802.11b	22	1	19	18.31	0.14	Rear	Ant1	Inactive	98.62	4	0.915	0.576	1.172	1.014	0.685	-
2 412	1	802.11b	22	1	19	17.80	-0.01	Rear	Ant2	Inactive	98.62	4	1.05	0.734	1.318	1.014	0.981	23
2 437	6	802.11b	22	1	19	18.01	-0.10	Rear	Ant2	Inactive	98.62	4	1.05	0.718	1.256	1.014	0.914	-
2 462	11	802.11b	22	1	19	18.02	-0.06	Rear	Ant2	Inactive	98.62	4	1.15	0.793	1.253	1.014	1.008	24
2 437	6	802.11n	22	MCS8	20	18.76	-0.04	Rear	MIMO	Inactive	97.33	4	0.529	0.386	1.330	1.027	0.527	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Body 1.6 W/kg Averaged over 1 gram						

Wi-Fi (NII) Body SAR																		
Frequency		Mode	Bandwidth (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant.	Position	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																	
5 290	58	802.11ac	80	MCS0	9	8.14	0.19	Rear	Ant1	Active	90.04	0	1.72	0.413	1.219	1.111	0.559	-
5 290	58	802.11ac	80	MCS0	9	7.48	-0.14	Rear	Ant2	Active	90.04	0	1.23	0.410	1.419	1.111	0.646	-
5 290	58	802.11ac	80	MCS0	12	10.37	-0.16	Rear	MIMO	Active	90.04	0	1.18	0.416	1.455	1.111	0.672	-
5 300	60	802.11a	20	6Mbps	14	13.31	0.15	Rear	Ant1	Inactive	97.47	4	1.05	0.442	1.172	1.026	0.531	-
5 260	52	802.11a	20	6Mbps	14	12.55	-0.14	Rear	Ant2	Inactive	97.47	4	1.46	0.580	1.396	1.026	0.831	-
5 300	60	802.11a	20	6Mbps	14	12.24	-0.17	Rear	Ant2	Inactive	97.47	4	1.57	0.608	1.500	1.026	0.936	-
5 320	64	802.11a	20	6Mbps	14	12.40	0.16	Rear	Ant2	Inactive	97.47	4	1.67	0.637	1.445	1.026	0.944	-
5 260	52	802.11n	20	MCS8	17	15.83	0.10	Rear	MIMO	Inactive	97.47	4	1.53	0.622	1.309	1.026	0.835	-
5 300	60	802.11n	20	MCS8	17	15.82	-0.04	Rear	MIMO	Inactive	97.47	4	1.63	0.639	1.312	1.026	0.860	-
5 320	64	802.11n	20	MCS8	17	15.80	-0.03	Rear	MIMO	Inactive	97.47	4	1.76	0.665	1.318	1.026	0.899	-
5 530	106	802.11ac	80	MCS0	9	8.28	0.19	Rear	Ant1	Active	90.04	0	0.996	0.381	1.180	1.111	0.499	-
5 690	138	802.11ac	80	MCS0	9	8.05	-0.10	Rear	Ant2	Active	90.04	0	1.07	0.467	1.245	1.111	0.646	-
5 690	138	802.11ac	80	MCS0	12	10.35	-0.12	Rear	MIMO	Active	90.04	0	0.998	0.394	1.462	1.111	0.640	-
5 500	100	802.11a	20	6Mbps	14	13.28	0.18	Rear	Ant1	Inactive	97.47	4	1.22	0.467	1.180	1.026	0.565	-
5 500	100	802.11a	20	6Mbps	14	13.11	-0.10	Rear	Ant2	Inactive	97.47	4	1.99	0.780	1.227	1.026	0.982	-
5 600	120	802.11a	20	6Mbps	14	12.65	0.10	Rear	Ant2	Inactive	97.47	4	1.54	0.583	1.365	1.026	0.816	-
5 720	144	802.11a	20	6Mbps	14	12.76	0.14	Rear	Ant2	Inactive	97.47	4	1.51	0.624	1.330	1.026	0.851	-
5 500	100	802.11n	20	MCS8	17	16.21	0.15	Rear	MIMO	Inactive	97.47	4	2.03	0.817	1.199	1.026	1.005	25
5 600	120	802.11n	20	MCS8	17	15.79	0.17	Rear	MIMO	Inactive	97.47	4	1.51	0.599	1.321	1.026	0.812	-
5 720	144	802.11n	20	MCS8	17	15.94	0.09	Rear	MIMO	Inactive	97.47	4	1.43	0.632	1.276	1.026	0.827	-
5 500	100	802.11n	20	MCS8	17	16.21	-0.12	Rear	MIMO	Inactive	97.47	4	2.14	0.811	1.199	1.026	0.998	-
5 775	155	802.11ac	80	MCS0	9	8.00	0.19	Rear	Ant1	Active	90.04	0	0.529	0.260	1.259	1.111	0.364	-
5 775	155	802.11ac	80	MCS0	9	7.92	0.14	Rear	Ant2	Active	90.04	0	1.42	0.457	1.282	1.111	0.651	-
5 775	155	802.11ac	80	MCS0	12	10.51	0.10	Rear	MIMO	Active	90.04	0	1.20	0.447	1.409	1.111	0.700	-
5 825	165	802.11a	20	6Mbps	14	13.03	-0.19	Rear	Ant1	Inactive	97.47	4	1.09	0.395	1.250	1.026	0.507	-
5 745	145	802.11a	20	6Mbps	14	12.80	0.11	Rear	Ant2	Inactive	97.47	4	1.78	0.714	1.318	1.026	0.966	-
5 785	157	802.11a	20	6Mbps	14	12.59	0.18	Rear	Ant2	Inactive	97.47	4	1.87	0.761	1.384	1.026	1.081	-
5 825	165	802.11a	20	6Mbps	14	12.62	0.19	Rear	Ant2	Inactive	97.47	4	1.74	0.686	1.374	1.026	0.967	-
5 745	145	802.11n	20	MCS8	17	15.81	-0.07	Rear	MIMO	Inactive	97.47	4	1.86	0.742	1.315	1.026	1.001	-
5 785	157	802.11n	20	MCS8	17	15.73	-0.16	Rear	MIMO	Inactive	97.47	4	2.03	0.791	1.340	1.026	1.087	26
5 825	165	802.11n	20	MCS8	17	15.84	-0.06	Rear	MIMO	Inactive	97.47	4	1.74	0.704	1.306	1.026	0.943	-
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Body 1.6 W/kg Averaged over 1 gram						

Note: * Data entry indicate Variability measurement.

DSS Tethering SAR												
Frequency		Mode	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
Mhz	Ch.											
2.480	78	Bluetooth DH5	11	10.98	0.10	Rear	0	0.157	1.005	1.299	0.205	27
ANSI/ IEEE C95.1 - 1992 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram					

13.2 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in FCC KDB Publication 616217 D04v01r02 and KDB Publication 447498 D01v06
2. Batteries are fully charged at the beginning of the SAR measurements. A standard battery was used for all SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB 447498 D01v06.
6. Per FCC KDB 865664 D01v01r04, variability SAR measurement were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg for 1g SAR and >2 for 10g SAR Please see Section 15 for variability analysis. the maximum tune-up tolerance limit.
7. This device utilizes power reduction for some wireless mode and technologies, as outlined in sec. 4.3 The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous scenarios.
8. FCC KDB Publication 616217 D04v01r02 Section 4.3, SAR tests are required for the back surface and edges of the tablet with the tablet touching the phantom. The SAR Exclusion Threshold in FCC KDB 447498 D01v06 was applied to determine SAR test exclusion for adjacent edge configurations.

UMTS Notes:

1. The 12.2 kbps RMC mode is the primary mode per KDB 941225 D01v03r01.
2. UMTS SAR was tested under RMC 12.2 kbps with HSPA inactive per KDB publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
3. Per FCC KDB 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the Maximum output power variation across the channel highest output power channel was used.

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Consideration for LTE Devices in FCC KDB 941225 D05v02r05.
2. According to FCC KDB 941225 D05v02r05:
When the reported SAR is ≤ 0.8 W/kg, testing of the 100% RB allocation and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the 1RB, 50%RB and 100%RB allocation with highest output power for that channel.
Only one channel, and as reported SAR values for 1RB allocation and 50%RB allocation were less than 1.45W/Kg only the highest power RB offset for each allocation was required.
3. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to target MPR is indicated alongside the SAR results.
4. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator.
5. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) LTE TDD Band 41 SAR measured at the highest output power channel for each test configuration is ≤ 0.6 W/kg then testing at the other channels is not required for such test configurations.
6. TDD LTE (Power Class 3) was tested using UL-DL configuration 0 with 6 UL sub frames and 2S subframes using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4, the duty factor using extended cyclic prefix is 0.633(cf=1.58).
7. SAR test reduction is applied using the following criteria:
Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is >0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are >0.8 W/kg, testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation <1.45 W/kg. Testing for 16-QAM modulation is not required because the reported SAR for QPSK is <1.45 W/kg and its output power is not more than 0.5 dB higher than that a QPSK. Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is <1.45 W/kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
8. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The Highest available duty cycle for Power Class 2 operations is 43.3% using UL-DL configuration 1. Per May TCB Workshop notes, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions.
9. This device supports LTE Carrier Aggregation(CA) in Uplink for LTE 41 with two component carriers in the uplink. SAR measurements and conducted powers were evaluated per Fall 2017 TCBC Workshop notes (LTE Carrier aggregation).
10. This device supports LTE Carrier Aggregation (CA) in the downlink Per FCC KDB publication 941225 D05A v01r02, SAR for LTE DL CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.

WLAN Notes:

1. Per KDB 2482227 D01v02r02 justification for test configurations of 2.4 GHz WiFi Single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11 g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR.
2. Per KDB 2482227 D01v02r02 justification for test configurations of 5 GHz WiFi Single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission mode were not investigated since the highest reported SAR for initial test configuration adjusted by the ration of maximum output powers is less than 1.2 W/kg for 1g SAR and less than 3.0 W/kg for 10 g SAR.
3. When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg or all test channels were measured.
4. The device was configured to transmit continuously at the required data rated, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated WLAN test reports.

Bluetooth Notes:

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests mode type. Per October 2016 TCBC Workshop Notes, the reported SAR was scaled to 100% transmission duty factor to determine compliance. Please see sec.11. for the time-domain plot and calculation for duty factor of the device.

14. Simultaneous SAR Analysis

14.1 Simultaneous Transmission Scenario with 2.4 GHz WLAN (Inactive)

Simultaneous Tx	Band	WWAN	2.4 GHz Ant. 1	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	0.305	0.685	0.990	No
	UMTS 1700	1.116	0.685	1.801	Yes
	UMTS 1900	1.073	0.685	1.758	Yes
	LTE Band 7	0.637	0.685	1.322	No
	LTE Band 12	0.401	0.685	1.086	No
	LTE Band 13	0.392	0.685	1.077	No
	LTE Band 14	0.402	0.685	1.087	No
	LTE Band 25	1.332	0.685	2.017	Yes
	LTE Band 26	0.266	0.685	0.951	No
	LTE Band 30	0.726	0.685	1.411	No
	LTE Band 38	0.446	0.685	1.131	No
	LTE Band 40	0.022	0.685	0.707	No
	LTE Band 41	0.502	0.685	1.187	No
	LTE Band 66	1.213	0.685	1.898	Yes
LTE Band 71	0.339	0.685	1.024	No	

Simultaneous Tx	Band	WWAN	2.4 GHz Ant. 2	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	0.305	1.008	1.313	No
	UMTS 1700	1.116	1.008	2.124	Yes
	UMTS 1900	1.073	1.008	2.081	Yes
	LTE Band 7	0.637	1.008	1.645	Yes
	LTE Band 12	0.401	1.008	1.409	No
	LTE Band 13	0.392	1.008	1.400	No
	LTE Band 14	0.402	1.008	1.410	No
	LTE Band 25	1.332	1.008	2.340	Yes
	LTE Band 26	0.266	1.008	1.274	No
	LTE Band 30	0.726	1.008	1.734	Yes
	LTE Band 38	0.446	1.008	1.454	No
	LTE Band 40	0.022	1.008	1.030	No
	LTE Band 41	0.502	1.008	1.51	No
	LTE Band 66	1.213	1.008	2.221	Yes
LTE Band 71	0.339	1.008	1.347	No	

Simultaneous Tx	Band	WWAN	2.4 GHz MIMO	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	0.305	0.527	0.832	No
	UMTS 1700	1.116	0.527	1.643	Yes
	UMTS 1900	1.073	0.527	1.600	Yes
	LTE Band 7	0.637	0.527	1.164	No
	LTE Band 12	0.401	0.527	0.928	No
	LTE Band 13	0.392	0.527	0.919	No
	LTE Band 14	0.402	0.527	0.929	No
	LTE Band 25	1.332	0.527	1.859	Yes
	LTE Band 26	0.266	0.527	0.793	No
	LTE Band 30	0.726	0.527	1.253	No
	LTE Band 38	0.446	0.527	0.973	No
	LTE Band 40	0.022	0.527	0.549	No
	LTE Band 41	0.502	0.527	1.03	No
	LTE Band 66	1.213	0.527	1.740	Yes
LTE Band 71	0.339	0.527	0.866	No	

14.2 Simultaneous Transmission Scenario with 5 GHz WLAN (Inactive)

Simultaneous Tx	Band	WWAN (W/kg)	5 GHz Ant. 1 (W/kg)	∑ 1-g SAR (W/kg)	SPLSR(Yes/No)
Body SAR	UMTS 850	0.305	0.565	0.870	No
	UMTS 1700	1.116	0.565	1.681	Yes
	UMTS 1900	1.073	0.565	1.638	Yes
	LTE Band 7	0.637	0.565	1.202	No
	LTE Band 12	0.401	0.565	0.966	No
	LTE Band 13	0.392	0.565	0.957	No
	LTE Band 14	0.402	0.565	0.967	No
	LTE Band 25	1.332	0.565	1.897	Yes
	LTE Band 26	0.266	0.565	0.831	No
	LTE Band 30	0.726	0.565	1.291	No
	LTE Band 38	0.446	0.565	1.011	No
	LTE Band 40	0.022	0.565	0.587	No
	LTE Band 41	0.502	0.565	1.068	No
	LTE Band 66	1.213	0.565	1.778	Yes
LTE Band 71	0.339	0.565	0.904	No	

Simultaneous Tx	Band	WWAN (W/kg)	5 GHz Ant. 2 (W/kg)	∑ 1-g SAR (W/kg)	SPLSR(Yes/No)
Body SAR	UMTS 850	0.305	1.081	1.386	No
	UMTS 1700	1.116	1.081	2.197	Yes
	UMTS 1900	1.073	1.081	2.154	Yes
	LTE Band 7	0.637	1.081	1.718	Yes
	LTE Band 12	0.401	1.081	1.482	No
	LTE Band 13	0.392	1.081	1.473	No
	LTE Band 14	0.402	1.081	1.483	No
	LTE Band 25	1.332	1.081	2.413	Yes
	LTE Band 26	0.266	1.081	1.347	No
	LTE Band 30	0.726	1.081	1.807	Yes
	LTE Band 38	0.446	1.081	1.527	No
	LTE Band 40	0.022	1.081	1.103	No
	LTE Band 41	0.502	1.081	1.582	No
	LTE Band 66	1.213	1.081	2.294	Yes
LTE Band 71	0.339	1.081	1.420	No	

Simultaneous Tx	Band	WWAN (W/kg)	5 GHz MIMO (W/kg)	∑ 1-g SAR (W/kg)	SPLSR(Yes/No)
Body SAR	UMTS 850	0.305	1.087	1.392	No
	UMTS 1700	1.116	1.087	2.203	Yes
	UMTS 1900	1.073	1.087	2.160	Yes
	LTE Band 7	0.637	1.087	1.724	Yes
	LTE Band 12	0.401	1.087	1.488	No
	LTE Band 13	0.392	1.087	1.479	No
	LTE Band 14	0.402	1.087	1.489	No
	LTE Band 25	1.332	1.087	2.419	Yes
	LTE Band 26	0.266	1.087	1.353	No
	LTE Band 30	0.726	1.087	1.813	Yes
	LTE Band 38	0.446	1.087	1.533	No
	LTE Band 40	0.022	1.087	1.109	No
	LTE Band 41	0.502	1.087	1.589	No
	LTE Band 66	1.213	1.087	2.300	Yes
LTE Band 71	0.339	1.087	1.426	No	

14.3 Simultaneous Transmission Scenario with 2.4 GHz WLAN (Active)

Simultaneous Tx	Band	WWAN	2.4 GHz Ant. 1	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	1.165	0.520	1.685	Yes
	UMTS 1700	1.202	0.520	1.722	Yes
	UMTS 1900	1.105	0.520	1.625	Yes
	LTE Band 7	1.197	0.520	1.717	Yes
	LTE Band 12	0.791	0.520	1.311	No
	LTE Band 13	1.161	0.520	1.681	Yes
	LTE Band 14	1.161	0.520	1.681	Yes
	LTE Band 25	1.397	0.520	1.917	Yes
	LTE Band 26	1.104	0.520	1.624	Yes
	LTE Band 30	1.108	0.520	1.628	Yes
	LTE Band 38	1.118	0.520	1.638	Yes
	LTE Band 40	0.388	0.520	0.908	No
	LTE Band 41	0.554	0.520	1.074	No
	LTE Band 66	1.271	0.520	1.791	Yes
LTE Band 71	0.948	0.520	1.468	No	

Simultaneous Tx	Band	WWAN	2.4 GHz Ant. 2	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	1.165	0.941	2.106	Yes
	UMTS 1700	1.202	0.941	2.143	Yes
	UMTS 1900	1.105	0.941	2.046	Yes
	LTE Band 7	1.197	0.941	2.138	Yes
	LTE Band 12	0.791	0.941	1.732	Yes
	LTE Band 13	1.161	0.941	2.102	Yes
	LTE Band 14	1.161	0.941	2.102	Yes
	LTE Band 25	1.397	0.941	2.338	Yes
	LTE Band 26	1.104	0.941	2.045	Yes
	LTE Band 30	1.108	0.941	2.049	Yes
	LTE Band 38	1.118	0.941	2.059	Yes
	LTE Band 40	0.388	0.941	1.329	No
	LTE Band 41	0.554	0.941	1.495	No
	LTE Band 66	1.271	0.941	2.212	Yes
LTE Band 71	0.948	0.941	1.889	Yes	

Simultaneous Tx	Band	WWAN	2.4 GHz MIMO	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	1.165	0.770	1.935	Yes
	UMTS 1700	1.202	0.770	1.972	Yes
	UMTS 1900	1.105	0.770	1.875	Yes
	LTE Band 7	1.197	0.770	1.967	Yes
	LTE Band 12	0.791	0.770	1.561	No
	LTE Band 13	1.161	0.770	1.931	Yes
	LTE Band 14	1.161	0.770	1.931	Yes
	LTE Band 25	1.397	0.770	2.167	Yes
	LTE Band 26	1.104	0.770	1.874	Yes
	LTE Band 30	1.108	0.770	1.878	Yes
	LTE Band 38	1.118	0.770	1.888	Yes
	LTE Band 40	0.388	0.770	1.158	No
	LTE Band 41	0.554	0.770	1.324	No
	LTE Band 66	1.271	0.770	2.041	Yes
LTE Band 71	0.948	0.770	1.718	Yes	

14.4 Simultaneous Transmission Scenario with 5 GHz WLAN (Active)

Simultaneous Tx	Band	WWAN	5 GHz Ant. 1	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	1.165	0.559	1.724	Yes
	UMTS 1700	1.202	0.559	1.761	Yes
	UMTS 1900	1.105	0.559	1.664	Yes
	LTE Band 7	1.197	0.559	1.756	Yes
	LTE Band 12	0.791	0.559	1.350	No
	LTE Band 13	1.161	0.559	1.720	Yes
	LTE Band 14	1.161	0.559	1.720	Yes
	LTE Band 25	1.397	0.559	1.956	Yes
	LTE Band 26	1.104	0.559	1.663	Yes
	LTE Band 30	1.108	0.559	1.667	Yes
	LTE Band 38	1.118	0.559	1.677	Yes
	LTE Band 40	0.388	0.559	0.947	No
	LTE Band 41	0.554	0.559	1.113	No
	LTE Band 66	1.271	0.559	1.830	Yes
LTE Band 71	0.948	0.559	1.507	No	

Simultaneous Tx	Band	WWAN	5 GHz Ant. 2	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	1.165	0.651	1.816	Yes
	UMTS 1700	1.202	0.651	1.853	Yes
	UMTS 1900	1.105	0.651	1.756	Yes
	LTE Band 7	1.197	0.651	1.848	Yes
	LTE Band 12	0.791	0.651	1.442	No
	LTE Band 13	1.161	0.651	1.812	Yes
	LTE Band 14	1.161	0.651	1.812	Yes
	LTE Band 25	1.397	0.651	2.048	Yes
	LTE Band 26	1.104	0.651	1.755	Yes
	LTE Band 30	1.108	0.651	1.759	Yes
	LTE Band 38	1.118	0.651	1.769	Yes
	LTE Band 40	0.388	0.651	1.039	No
	LTE Band 41	0.554	0.651	1.205	No
	LTE Band 66	1.271	0.651	1.922	Yes
LTE Band 71	0.948	0.651	1.599	No	

Simultaneous Tx	Band	WWAN	5 GHz MIMO	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	1.165	0.700	1.865	Yes
	UMTS 1700	1.202	0.700	1.902	Yes
	UMTS 1900	1.105	0.700	1.805	Yes
	LTE Band 7	1.197	0.700	1.897	Yes
	LTE Band 12	0.791	0.700	1.491	No
	LTE Band 13	1.161	0.700	1.861	Yes
	LTE Band 14	1.161	0.700	1.861	Yes
	LTE Band 25	1.397	0.700	2.097	Yes
	LTE Band 26	1.104	0.700	1.804	Yes
	LTE Band 30	1.108	0.700	1.808	Yes
	LTE Band 38	1.118	0.700	1.818	Yes
	LTE Band 40	0.388	0.700	1.088	No
	LTE Band 41	0.554	0.700	1.254	No
	LTE Band 66	1.271	0.700	1.971	Yes
LTE Band 71	0.948	0.700	1.648	Yes	

**14.5 Simultaneous Transmission Scenario with RSDB
(2.4 GHz Ant. 1 +5 GHz Ant. 2)**

Simultaneous Tx	Band	WWAN	2.4 GHz Ant. 1	5 GHz Ant. 2	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	1.165	0.520	0.651	2.336	Yes
	UMTS 1700	1.202	0.520	0.651	2.373	Yes
	UMTS 1900	1.105	0.520	0.651	2.276	Yes
	LTE Band 7	1.197	0.520	0.651	2.368	Yes
	LTE Band 12	0.791	0.520	0.651	1.962	Yes
	LTE Band 13	1.161	0.520	0.651	2.332	Yes
	LTE Band 14	1.161	0.520	0.651	2.332	Yes
	LTE Band 25	1.397	0.520	0.651	2.568	Yes
	LTE Band 26	1.104	0.520	0.651	2.275	Yes
	LTE Band 30	1.108	0.520	0.651	2.279	Yes
	LTE Band 38	1.118	0.520	0.651	2.289	Yes
	LTE Band 40	0.388	0.520	0.651	1.559	No
	LTE Band 41	0.554	0.520	0.651	1.725	Yes
	LTE Band 66	1.271	0.520	0.651	2.442	Yes
LTE Band 71	0.948	0.520	0.651	2.119	Yes	

14.6 Simultaneous Transmission Scenario with Bluetooth

Simultaneous Tx	Band	WWAN	Bluetooth	Σ 1-g SAR	SPLSR(Yes/No)
		(W/kg)	(W/kg)	(W/kg)	
Body SAR	UMTS 850	0.305	0.205	0.510	No
	UMTS 1700	1.116	0.205	1.321	No
	UMTS 1900	1.073	0.205	1.278	No
	LTE Band 7	0.637	0.205	0.842	No
	LTE Band 12	0.401	0.205	0.606	No
	LTE Band 13	0.392	0.205	0.597	No
	LTE Band 14	0.402	0.205	0.607	No
	LTE Band 25	1.332	0.205	1.537	No
	LTE Band 26	0.266	0.205	0.471	No
	LTE Band 30	0.726	0.205	0.931	No
	LTE Band 38	0.446	0.205	0.651	No
	LTE Band 40	0.388	0.205	0.593	No
	LTE Band 41	0.502	0.205	0.707	No
	LTE Band 66	1.213	0.205	1.418	No
LTE Band 71	0.339	0.205	0.544	No	

14.7 SAR to Peak Location Separation Ratio (SPLSR)

FCC KDB 447498 D01v06 General RF Exposure Guidance introduces a new formula for calculating the SAR a Peak Location Separation Ratio(SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / R_i$$

Where:

SAR_1 is the highest measured or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR_2 is the highest measured of estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

R_i is the separation distance between the pair of simultaneous transmitting antennas, When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $[(X_1 - X_2)^2 + (Y_1 - Y_2)^2 + (Z_1 - Z_2)^2]$

In order for a pair of simultaneous transmitting antennas with the sum 1-g of SAR > 1.6 W/kg and with the sum 10-g of SAR > 4 W/Kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / R_i \leq 0.04 \text{ for 1g SAR and } (SAR_1 + SAR_2)^{1.5} / R_i \leq 0.1 \text{ for 10g SAR}$$

Per Sec. 14, below simultaneous transmission summations need to be calculated SPLSR.

14.7.1 SPLSR Evaluation for Max Power Configuration (Proximity Sensor inactive)

Peak SAR location for Rear side

Mode/Band	X(m)	Y(m)	Z(m)	Reported SAR [W/kg]
UMTS 850	0.009	-0.086	-0.175	0.305
UMTS 1700	0.021	-0.0455	-0.176	1.116
UMTS 1900	0.021	-0.047	-0.176	1.073
LTE Band 7	0.0168	-0.0816	-0.18	0.637
LTE Band 12	0.0075	-0.074	-0.175	0.401
LTE Band 13	0.0075	-0.0785	-0.175	0.392
LTE Band 14	0.009	-0.0785	-0.175	0.402
LTE Band 25	0.021	-0.05	-0.176	1.332
LTE Band 26	0.0075	-0.0815	-0.175	0.266
LTE Band 30	0.0156	-0.0816	-0.18	0.726
LTE Band 38	0.0156	-0.084	-0.18	0.446
LTE Band 41	0.0144	-0.0936	-0.179	0.489
LTE Band 66	0.0195	-0.05	-0.176	1.213
LTE Band 71	0.0075	-0.077	-0.175	0.339
2.4 GHz Ant. 1	0.018	0.0248	-0.18	0.685
2.4 GHz Ant. 2	0.0168	0.1	-0.18	1.008
2.4 GHz MIMO	0.0192	0.026	-0.18	0.527
5 GHz Ant. 1	0.023	0.036	-0.179	0.565
5 GHz Ant. 2	0.023	0.095	-0.179	1.081
5 GHz MIMO	0.023	0.068	-0.179	1.087

SAR to Peak Location Ratio (SPLSR) Figures

Mode		Sum 1g SAR [W/kg]	Peak SAR Separation Distance (mm)	SPLSR	Plot No
1	2	1 + 2			
UMTS 1700	2.4GHz Ant1	1.800	70.478	0.034	1
UMTS 1900	2.4GHz Ant1	1.758	71.974	0.032	2
LTE Band25	2.4GHz Ant1	2.017	74.967	0.038	3
LTE Band66	2.4GHz Ant1	1.898	74.922	0.035	4
UMTS 1700	2.4GHz Ant2	2.124	145.616	0.021	5
UMTS 1900	2.4GHz Ant2	2.081	147.114	0.020	6
LTE Band7	2.4GHz Ant2	1.645	181.600	0.012	7
LTE Band25	2.4GHz Ant2	2.340	150.112	0.024	8
LTE Band30	2.4GHz Ant2	1.734	181.604	0.013	9
LTE Band66	2.4GHz Ant2	2.221	150.078	0.022	10

SAR to Peak Location Ratio (SPLSR) Figures

Mode		Sum 1g SAR [W/kg]	Peak SAR Separation Distance (mm)	SPLSR	Plot No
1	2	1 + 2			
UMTS 1700	2.4GHz MIMO	1.643	71.634	0.029	11
UMTS 1900	2.4GHz MIMO	1.600	73.132	0.028	12
LTE Band25	2.4GHz MIMO	1.859	76.126	0.033	13
LTE Band66	2.4GHz MIMO	1.740	76.106	0.030	14
UMTS 1700	5GHz Ant1	1.681	81.580	0.027	15
UMTS 1900	5GHz Ant1	1.638	83.078	0.025	16
LTE Band25	5GHz Ant1	1.897	86.076	0.030	17
LTE Band66	5GHz Ant1	1.778	86.123	0.028	18

SAR to Peak Location Ratio (SPLSR) Figures

Mode		Sum 1g SAR [W/kg]	Peak SAR Separation Distance (mm)	SPLSR	Plot No
1	2	1 + 2			
UMTS 1700	5GHz Ant2	2.197	140.546	0.023	19
UMTS 1900	5GHz Ant2	2.154	142.046	0.022	20
LTE Band7	5GHz Ant2	1.718	176.712	0.013	21
LTE Band25	5GHz Ant2	2.413	145.045	0.026	22
LTE Band30	5GHz Ant2	1.807	176.758	0.014	23
LTE Band66	5GHz Ant2	2.294	145.073	0.024	24
UMTS 1700	5GHz MIMO	2.203	113.557	0.029	25
UMTS 1900	5GHz MIMO	2.160	115.057	0.028	26
LTE Band7	5GHz MIMO	1.724	149.732	0.015	27
LTE Band25	5GHz MIMO	2.419	118.055	0.032	28
LTE Band30	5GHz MIMO	1.813	149.786	0.016	29
LTE Band66	5GHz MIMO	2.300	118.090	0.030	30

14.7.2 SPLSR Evaluation for Max Power Configuration (Proximity Sensor activated)

Peak SAR location for Rear side

Mode/Band	X(m)	Y(m)	Z(m)	Reported SAR [W/kg]
UMTS 850	0.015	-0.071	-0.176	1.165
UMTS 1700	0.0195	-0.047	-0.175	1.202
UMTS 1900	0.018	-0.047	-0.175	1.105
LTE Band 7	0.0156	-0.084	-0.179	1.197
LTE Band 12	0.0135	-0.0755	-0.175	0.791
LTE Band 13	0.015	-0.08	-0.175	1.161
LTE Band 14	0.0165	-0.08	-0.175	1.161
LTE Band 25	0.0195	-0.04855	-0.175	1.397
LTE Band 26	0.0165	-0.08	-0.175	1.104
LTE Band 30	0.0156	-0.084	-0.179	1.108
LTE Band 38	0.0144	-0.0828	-0.179	1.118
LTE Band 66	0.0195	-0.0485	-0.176	1.271
LTE Band 71	0.0156	-0.084	-0.179	0.948
2.4 GHz Ant. 1	0.0264	0.0212	-0.18	0.520
2.4 GHz Ant. 2	0.0228	0.102	-0.18	0.941
2.4 GHz MIMO	0.0252	0.108	-0.179	0.770
5 GHz Ant. 1	0.023	0.034	-0.179	0.559
5 GHz Ant. 2	0.023	0.094	-0.179	0.651
5 GHz MIMO	0.023	0.095	-0.179	0.700

SAR to Peak Location Ratio (SPLSR) Figures

Mode		Sum 1g SAR [W/kg]	Peak SAR Separation Distance (mm)	SPLSR	Plot No
1	2	1 + 2			
UMTS 850	2.4GHz Ant1	1.685	92.988	0.024	31
UMTS 1700	2.4GHz Ant1	1.722	68.730	0.033	32
UMTS 1900	2.4GHz Ant1	1.625	68.897	0.031	33
LTE Band7	2.4GHz Ant1	1.717	105.758	0.021	34
LTE Band13	2.4GHz Ant1	1.681	101.963	0.021	35
LTE Band14	2.4GHz Ant1	1.681	101.806	0.021	36
LTE Band25	2.4GHz Ant1	1.917	70.269	0.038	37
LTE Band26	2.4GHz Ant1	1.624	101.806	0.020	38
LTE Band30	2.4GHz Ant1	1.628	105.758	0.020	39
LTE Band38	2.4GHz Ant1	1.638	104.695	0.020	40
LTE Band66	2.4GHz Ant1	1.791	70.155	0.034	41
UMTS 850	2.4GHz Ant2	2.106	173.222	0.018	111
UMTS 1700	2.4GHz Ant2	2.143	149.120	0.021	42
UMTS 1900	2.4GHz Ant2	2.046	149.161	0.020	43
LTE Band7	2.4GHz Ant2	2.138	186.142	0.017	44
LTE Band12	2.4GHz Ant2	1.732	177.814	0.013	45
LTE Band13	2.4GHz Ant2	2.102	182.236	0.017	46
LTE Band14	2.4GHz Ant2	2.102	182.178	0.017	47
LTE Band25	2.4GHz Ant2	2.338	150.669	0.024	48
LTE Band26	2.4GHz Ant2	2.045	182.178	0.016	49
LTE Band30	2.4GHz Ant2	2.049	186.142	0.016	50
LTE Band38	2.4GHz Ant2	2.059	184.994	0.016	51
LTE Band66	2.4GHz Ant2	2.212	150.589	0.022	52
LTE Band71	2.4GHz Ant2	1.889	186.142	0.014	53

SAR to Peak Location Ratio (SPLSR) Figures

Mode		Sum 1g SAR [W/kg]	Peak SAR Separation Distance (mm)	SPLSR	Plot No
1	2	1 + 2			
UMTS 850	2.4GHz MIMO	1.935	179.315	0.013	54
UMTS 1700	2.4GHz MIMO	1.972	155.156	0.016	55
UMTS 1900	2.4GHz MIMO	1.875	155.219	0.015	56
LTE Band7	2.4GHz MIMO	1.967	192.240	0.013	57
LTE Band13	2.4GHz MIMO	1.931	188.319	0.013	58
LTE Band14	2.4GHz MIMO	1.931	188.244	0.012	59
LTE Band25	2.4GHz MIMO	2.167	156.705	0.018	60
LTE Band26	2.4GHz MIMO	1.874	188.244	0.012	61
LTE Band30	2.4GHz MIMO	1.878	192.240	0.012	62
LTE Band38	2.4GHz MIMO	1.888	191.105	0.012	63
LTE Band66	2.4GHz MIMO	2.041	156.632	0.016	64
LTE Band71	2.4GHz MIMO	1.718	192.240	0.010	112
UMTS 850	5GHz Ant1	1.724	105.347	0.021	65
UMTS 1700	5GHz Ant1	1.761	81.174	0.028	66
UMTS 1900	5GHz Ant1	1.664	81.253	0.026	67
LTE Band7	5GHz Ant1	1.756	118.232	0.019	113
LTE Band13	5GHz Ant1	1.720	114.350	0.019	68
LTE Band14	5GHz Ant1	1.720	114.255	0.019	69
LTE Band25	5GHz Ant1	1.956	82.721	0.032	70
LTE Band26	5GHz Ant1	1.663	114.255	0.018	71
LTE Band30	5GHz Ant1	1.667	118.232	0.017	72
LTE Band38	5GHz Ant1	1.677	117.116	0.018	73
LTE Band66	5GHz Ant1	1.830	82.629	0.029	74

SAR to Peak Location Ratio (SPLSR) Figures

Mode		Sum 1g SAR [W/kg]	Peak SAR Separation Distance (mm)	SPLSR	Plot No
1	2	1 + 2			
UMTS 850	5GHz Ant2	1.816	165.221	0.015	75
UMTS 1700	5GHz Ant2	1.853	141.100	0.018	76
UMTS 1900	5GHz Ant2	1.756	141.145	0.017	77
LTE Band7	5GHz Ant2	1.848	178.154	0.014	78
LTE Band13	5GHz Ant2	1.812	174.230	0.014	79
LTE Band14	5GHz Ant2	1.812	174.167	0.014	80
LTE Band25	5GHz Ant2	2.048	142.649	0.021	81
LTE Band26	5GHz Ant2	1.755	174.167	0.013	82
LTE Band30	5GHz Ant2	1.759	178.154	0.013	83
LTE Band38	5GHz Ant2	1.769	177.009	0.013	84
LTE Band66	5GHz Ant2	1.922	142.575	0.019	85
UMTS 850	5GHz MIMO	1.865	166.220	0.015	86
UMTS 1700	5GHz MIMO	1.902	142.099	0.019	87
UMTS 1900	5GHz MIMO	1.805	142.144	0.017	88
LTE Band7	5GHz MIMO	1.897	179.153	0.015	89
LTE Band13	5GHz MIMO	1.861	175.228	0.014	90
LTE Band14	5GHz MIMO	1.861	175.166	0.014	91
LTE Band25	5GHz MIMO	2.097	143.648	0.021	92
LTE Band26	5GHz MIMO	1.804	175.166	0.014	93
LTE Band30	5GHz MIMO	1.808	179.153	0.014	94
LTE Band38	5GHz MIMO	1.818	178.008	0.014	95
LTE Band66	5GHz MIMO	1.971	143.574	0.019	96
LTE Band71	5GHz MIMO	1.648	179.153	0.012	97

14.7.3 SPLSR Evaluation for RSDB Configuration

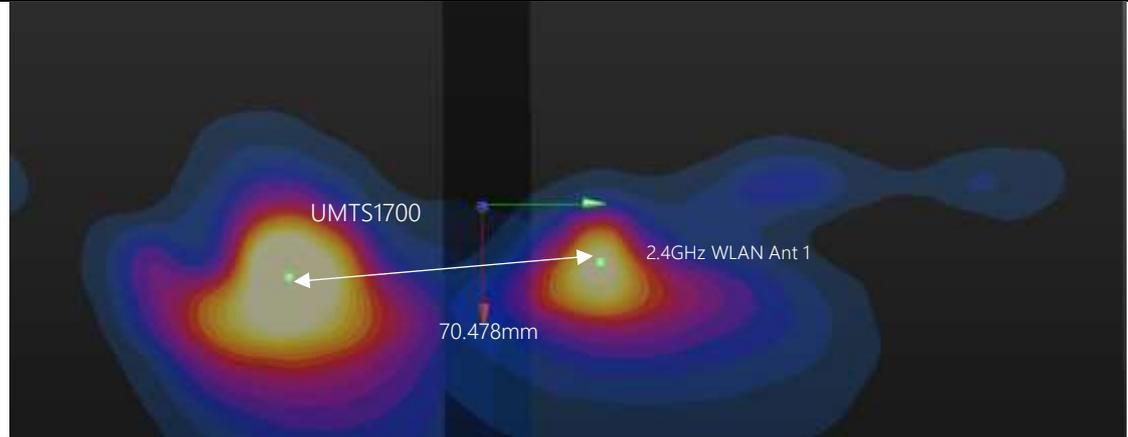
Peak SAR location for Rear side

Mode/Band	X(m)	Y(m)	Z(m)	Reported SAR [W/kg]
UMTS 850	0.015	-0.071	-0.176	1.165
UMTS 1700	0.0195	-0.047	-0.175	1.202
UMTS 1900	0.018	-0.047	-0.175	1.105
LTE Band 7	0.0156	-0.084	-0.179	1.198
LTE Band 12	0.0135	-0.0755	-0.175	0.791
LTE Band 13	0.015	-0.08	-0.175	1.162
LTE Band 14	0.0165	-0.08	-0.175	1.161
LTE Band 25	0.0195	-0.04855	-0.175	1.397
LTE Band 26	0.0165	-0.08	-0.175	1.105
LTE Band 30	0.0156	-0.084	-0.179	1.108
LTE Band 38	0.0144	-0.0828	-0.179	1.118
LTE Band 41	0.0168	-0.0828	-0.179	0.554
LTE Band 66	0.0195	-0.0485	-0.176	1.271
LTE Band 71	0.0156	-0.084	-0.179	0.949
2.4 GHz Ant. 1	0.0264	0.0212	-0.18	0.52
5 GHz Ant. 2	0.023	0.094	-0.179	0.651

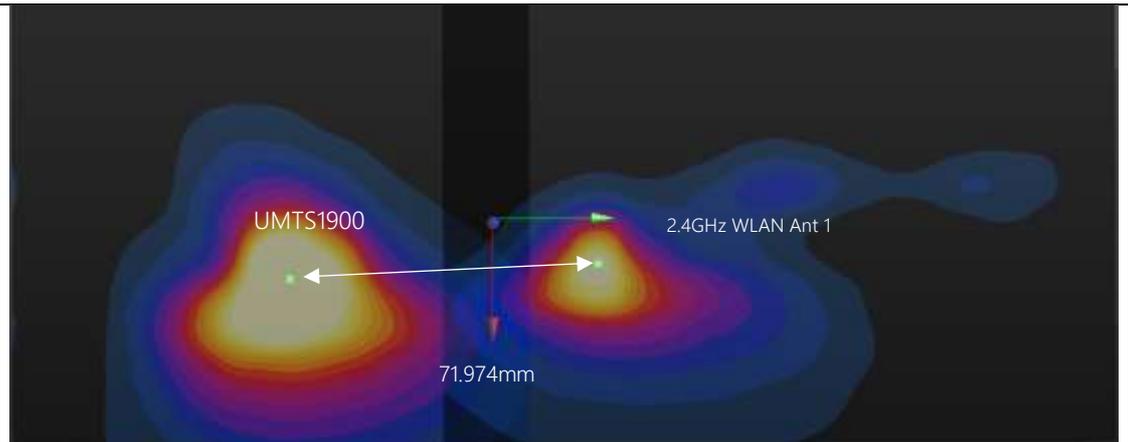
Mode /Bands			Sum 1g SAR	Sum 1g SAR	Sum 1g SAR	Sum 1g SAR	Peak SAR Separation Distance	Peak SAR Separation Distance	Peak SAR Separation Distance	SPLSR	SPLSR	SPLSR	Plot No
1	2	3	1+2+3	1+2	1+3	2+3	1+2 [mm]	1+3 [mm]	2+3 [mm]	1+2	1+3	2+3	
UMTS 850	2.4GHz Ant1	5GHz Ant2	2.336	1.685	1.816	1.171	92.988	165.221	70.385	0.024	0.0148	0.018	98
UMTS 1700	2.4GHz Ant1	5GHz Ant2	2.373	1.722	1.853	1.171	68.730	141.100	70.385	0.033	0.0181	0.018	99
UMTS 1900	2.4GHz Ant1	5GHz Ant2	2.276	1.625	1.756	1.171	68.897	141.145	70.385	0.031	0.0167	0.018	100
LTE Band7	2.4GHz Ant1	5GHz Ant2	2.368	1.717	1.848	1.171	105.758	178.154	70.385	0.021	0.0141	0.018	101
LTE Band12	2.4GHz Ant1	5GHz Ant2	1.962	1.311	1.442	1.171	97.685	169.813	70.385	0.015	0.0102	0.018	102
LTE Band13	2.4GHz Ant1	5GHz Ant2	2.332	1.681	1.812	1.171	101.963	174.230	70.385	0.021	0.0140	0.018	103
LTE Band14	2.4GHz Ant1	5GHz Ant2	2.332	1.681	1.812	1.171	101.806	174.167	70.385	0.021	0.0139	0.018	104
LTE Band25	2.4GHz Ant1	5GHz Ant2	2.568	1.917	2.048	1.171	70.269	142.649	70.385	0.038	0.0205	0.018	105
LTE Band26	2.4GHz Ant1	5GHz Ant2	2.275	1.624	1.755	1.171	101.806	174.167	70.385	0.020	0.0134	0.018	106
LTE Band30	2.4GHz Ant1	5GHz Ant2	2.279	1.628	1.759	1.171	105.758	178.154	70.385	0.020	0.0131	0.018	107
LTE Band38	2.4GHz Ant1	5GHz Ant2	2.289	1.638	1.769	1.171	104.695	177.009	70.385	0.020	0.0133	0.018	108
LTE Band41	2.4GHz Ant1	5GHz Ant2	1.725	1.074	1.205	1.171	183.157	203.485	70.385	0.006	0.0065	0.018	114
LTE Band66	2.4GHz Ant1	5GHz Ant2	2.442	1.791	1.922	1.171	70.155	142.575	70.385	0.034	0.0187	0.018	109
LTE Band71	2.4GHz Ant1	5GHz Ant2	2.119	1.468	1.599	1.171	105.758	178.154	70.385	0.017	0.0113	0.018	110

SPLSR Plot

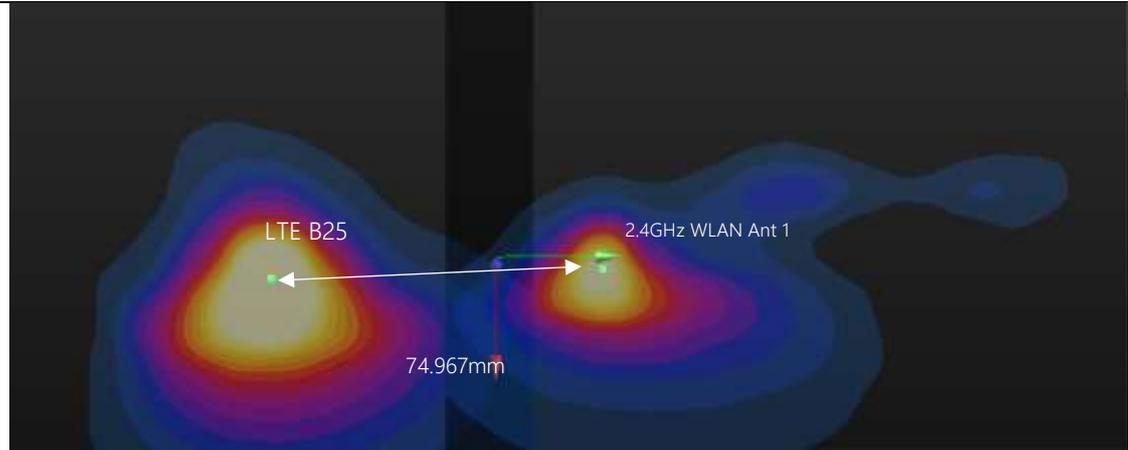
SPLSR Plot : #1 Max Power :UMTS1700+ 2.4 GHzWLAN Ant 1



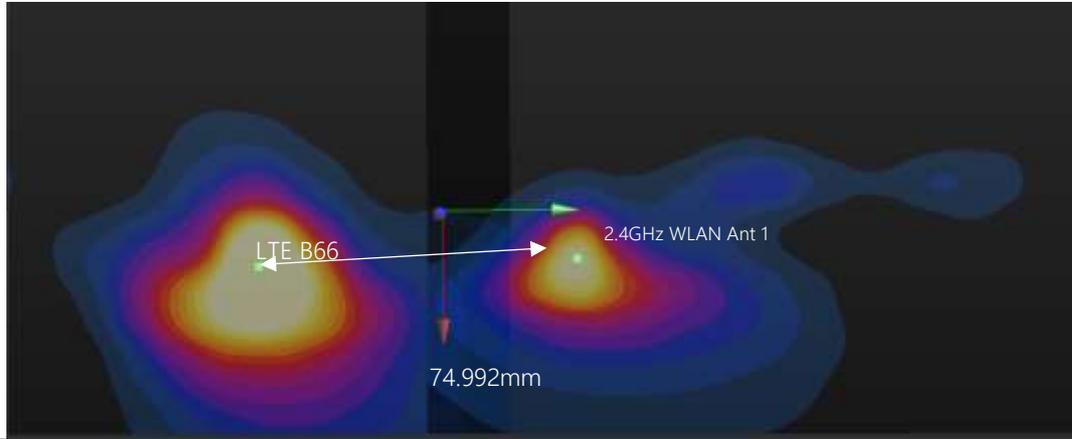
SPLSR Plot : #2 Max Power :UMTS1900+ 2.4GHz WLAN Ant 1



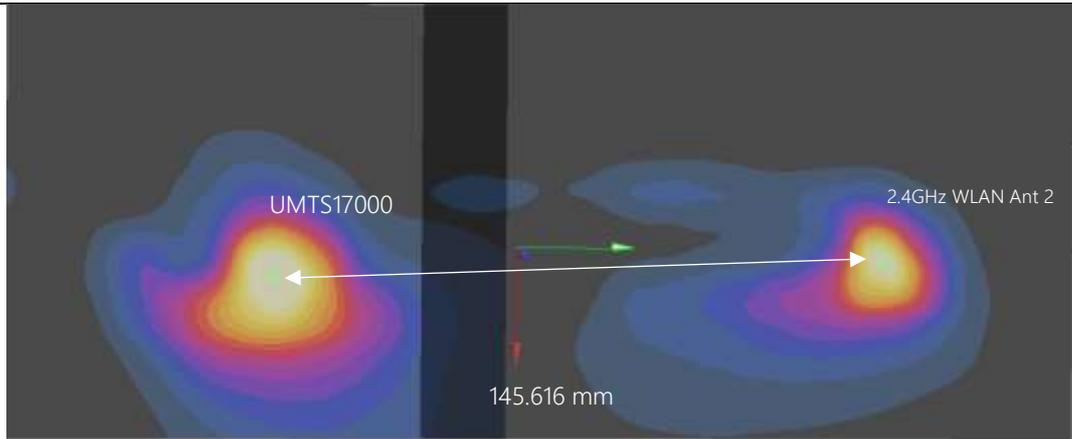
SPLSR Plot : #3 Max Power :LTE B25+ 2.4GHz WLAN Ant 1



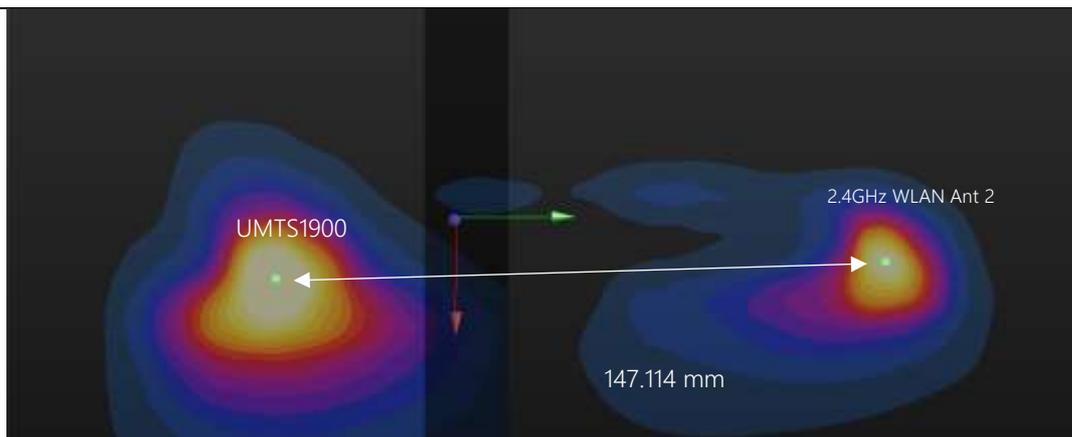
SPLSR Plot : #4 Max Power :LTE B66+ 2.4GHz WLAN Ant 1

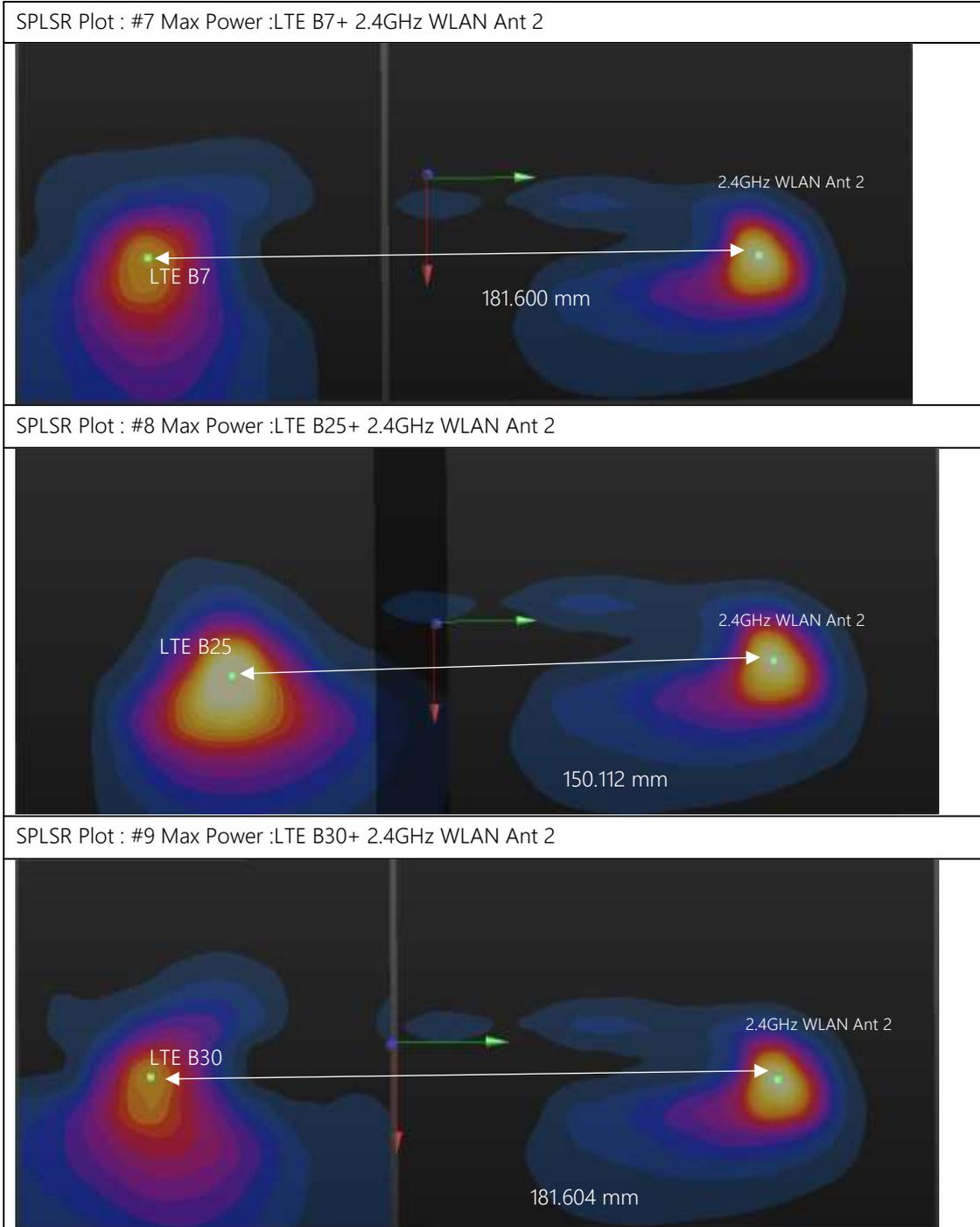


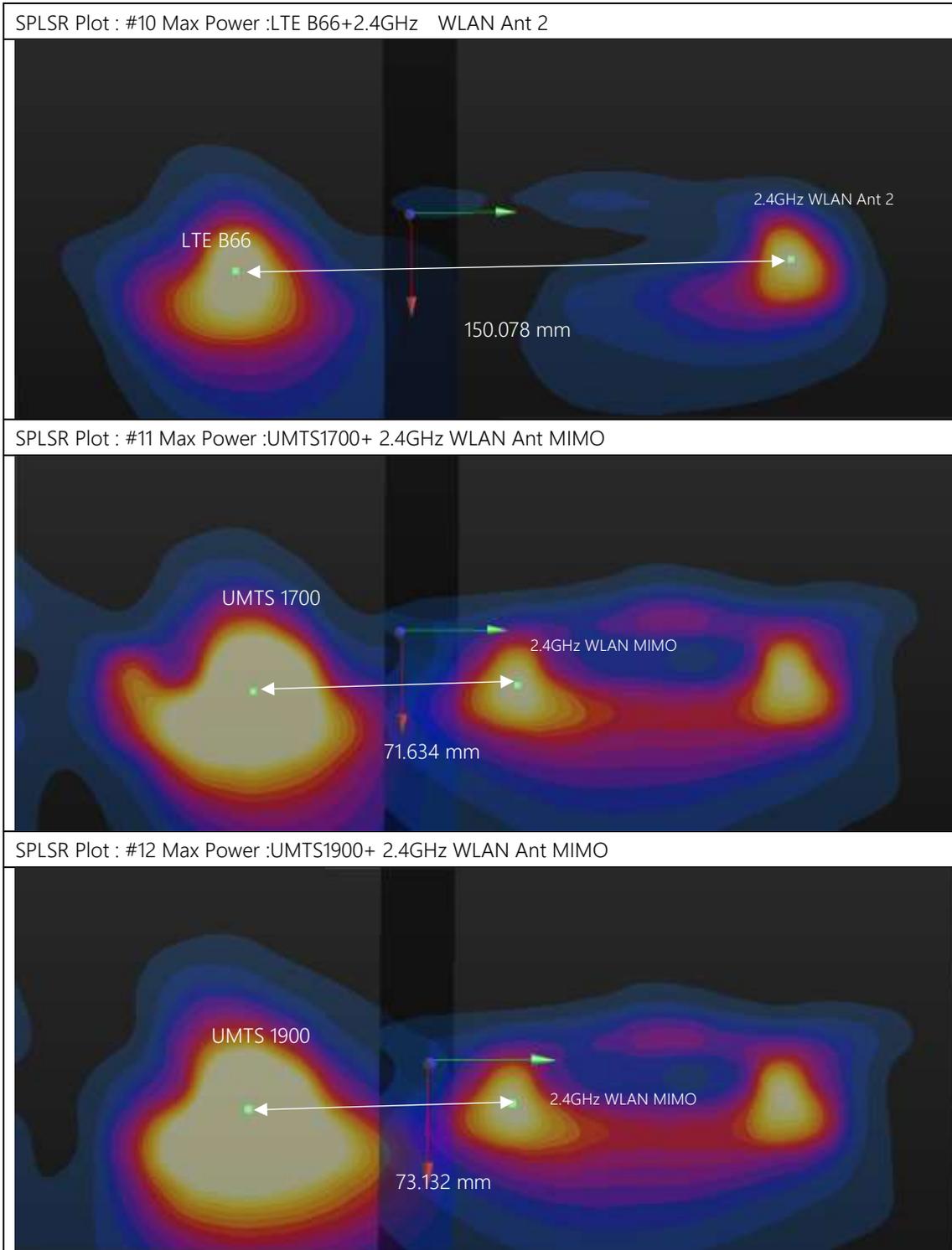
SPLSR Plot : #5 Max Power :UMTS1700+ 2.4GHz WLAN Ant 2



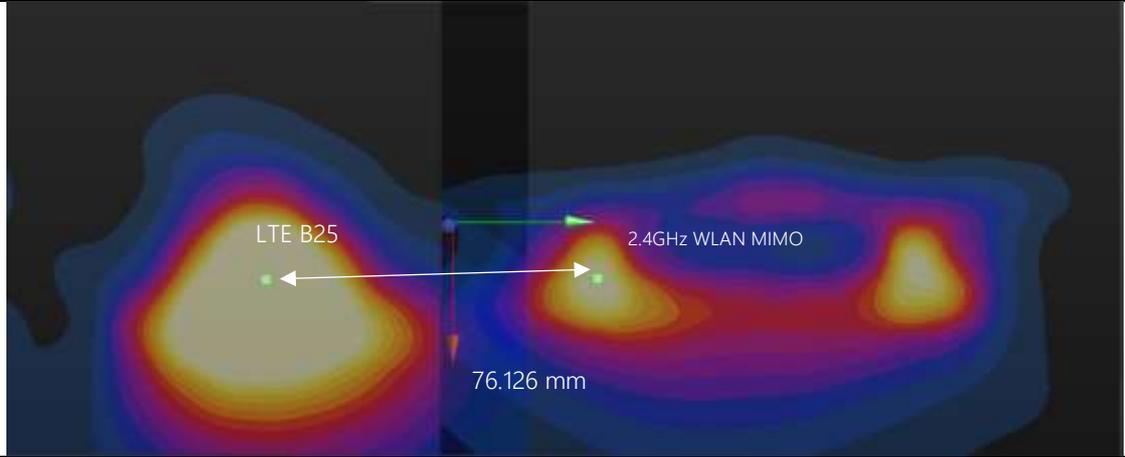
SPLSR Plot : #6 Max Power :UMTS1900+ 2.4GHz WLAN Ant 2



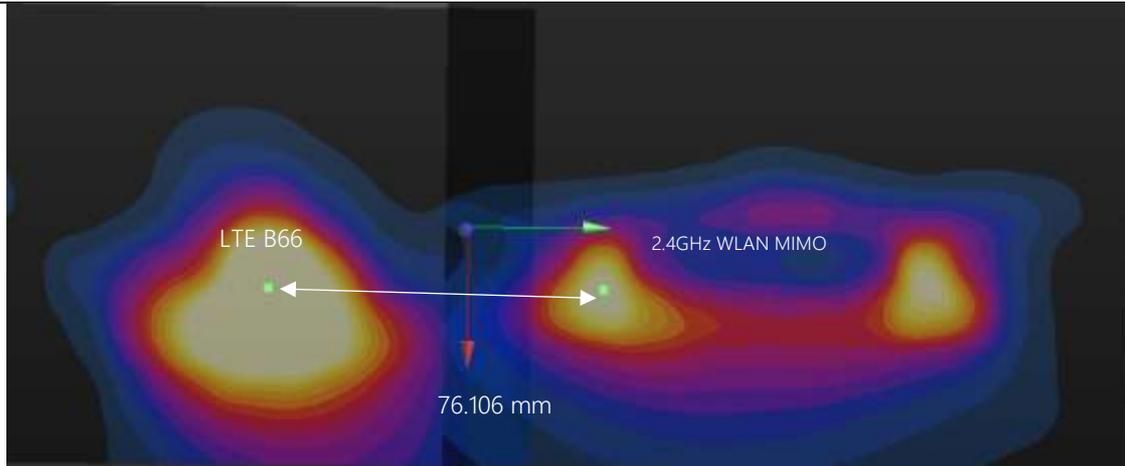




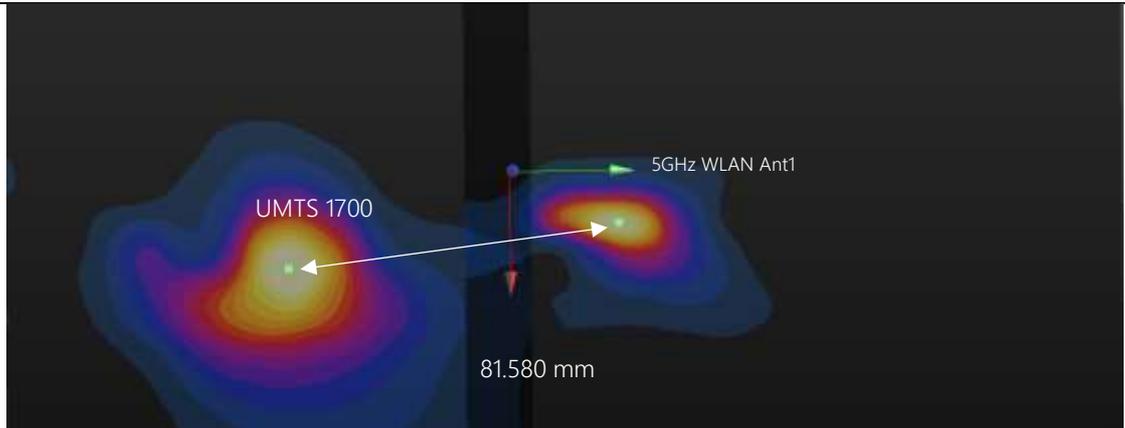
SPLSR Plot : #13 Max Power :LTE B25+ 2.4GHz WLAN Ant MIMO



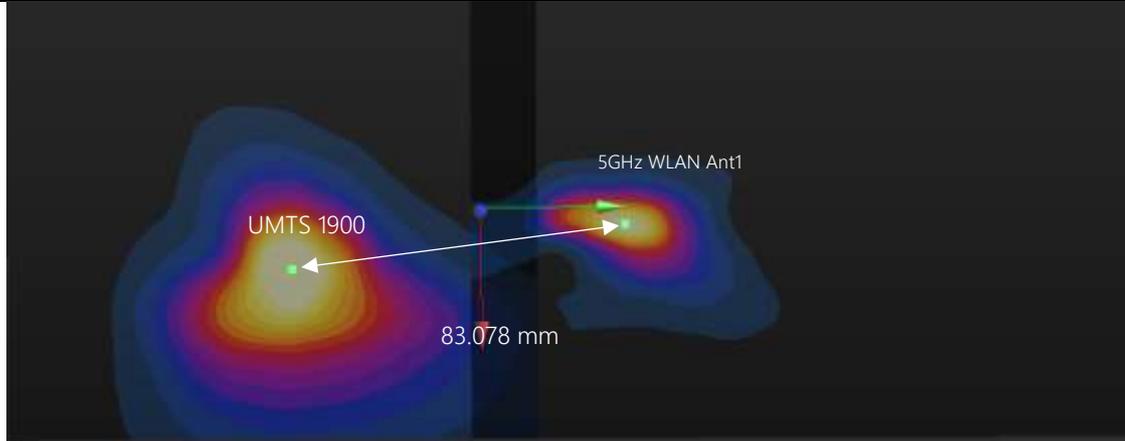
SPLSR Plot : #14 Max Power :LTE B66+ 2.4GHz WLAN Ant MIMO



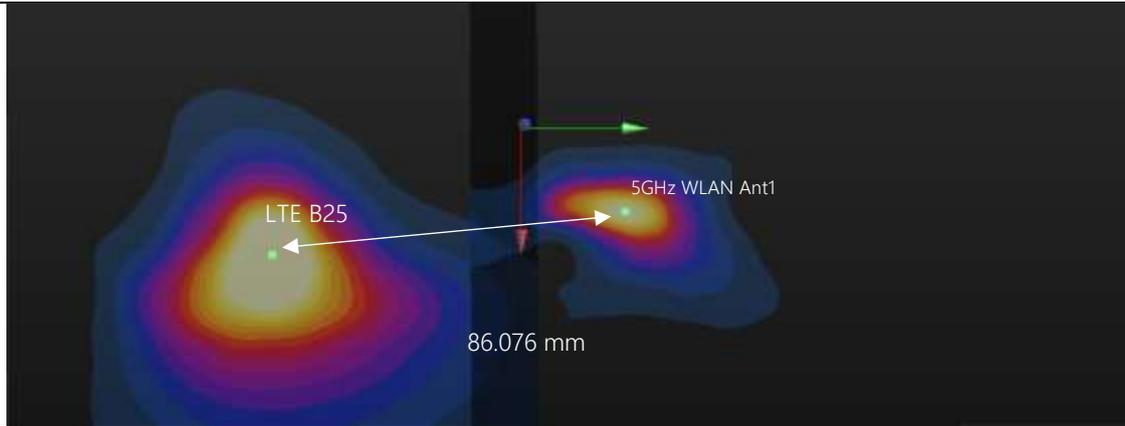
SPLSR Plot : #15 Max Power :UMTS1700 + 5GHz WLAN Ant 1



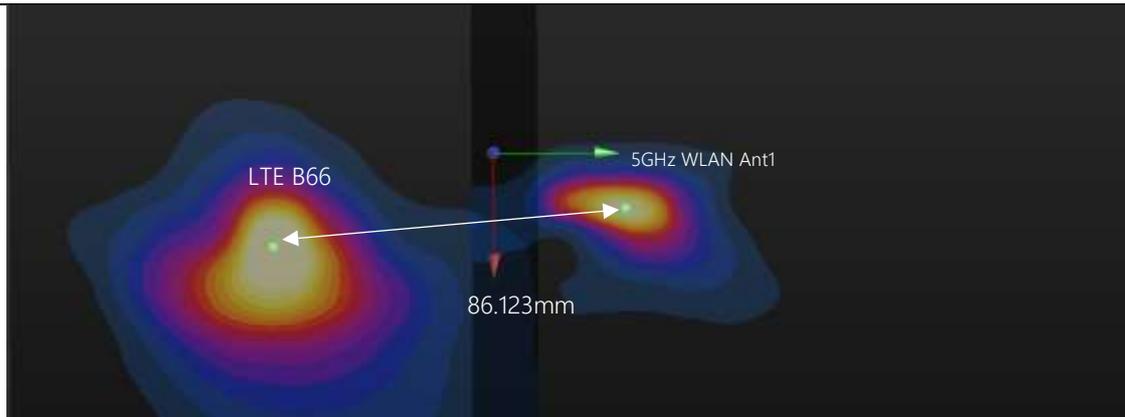
SPLSR Plot : #16 Max Power :UMTS1900 + 5GHz WLAN Ant 1

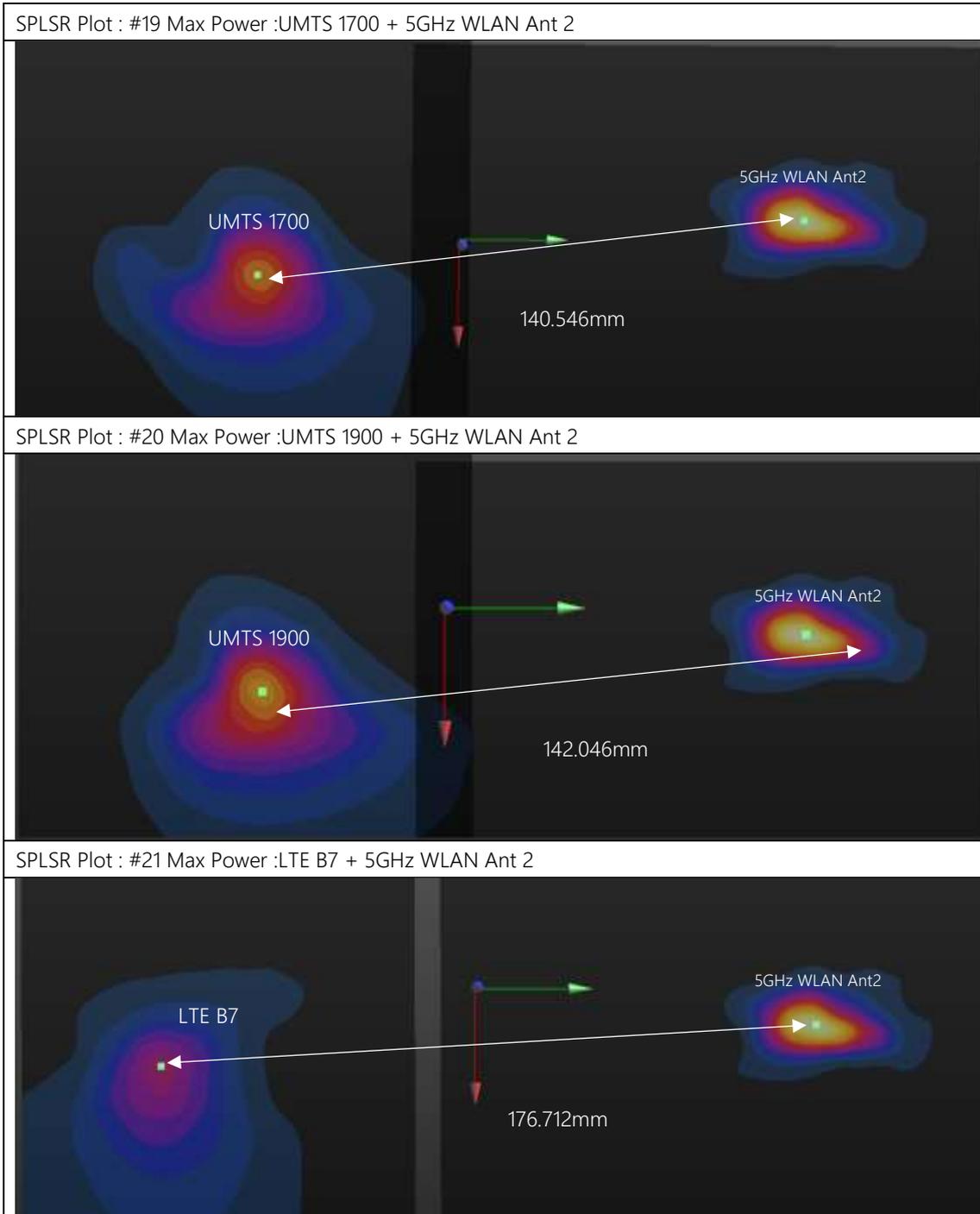


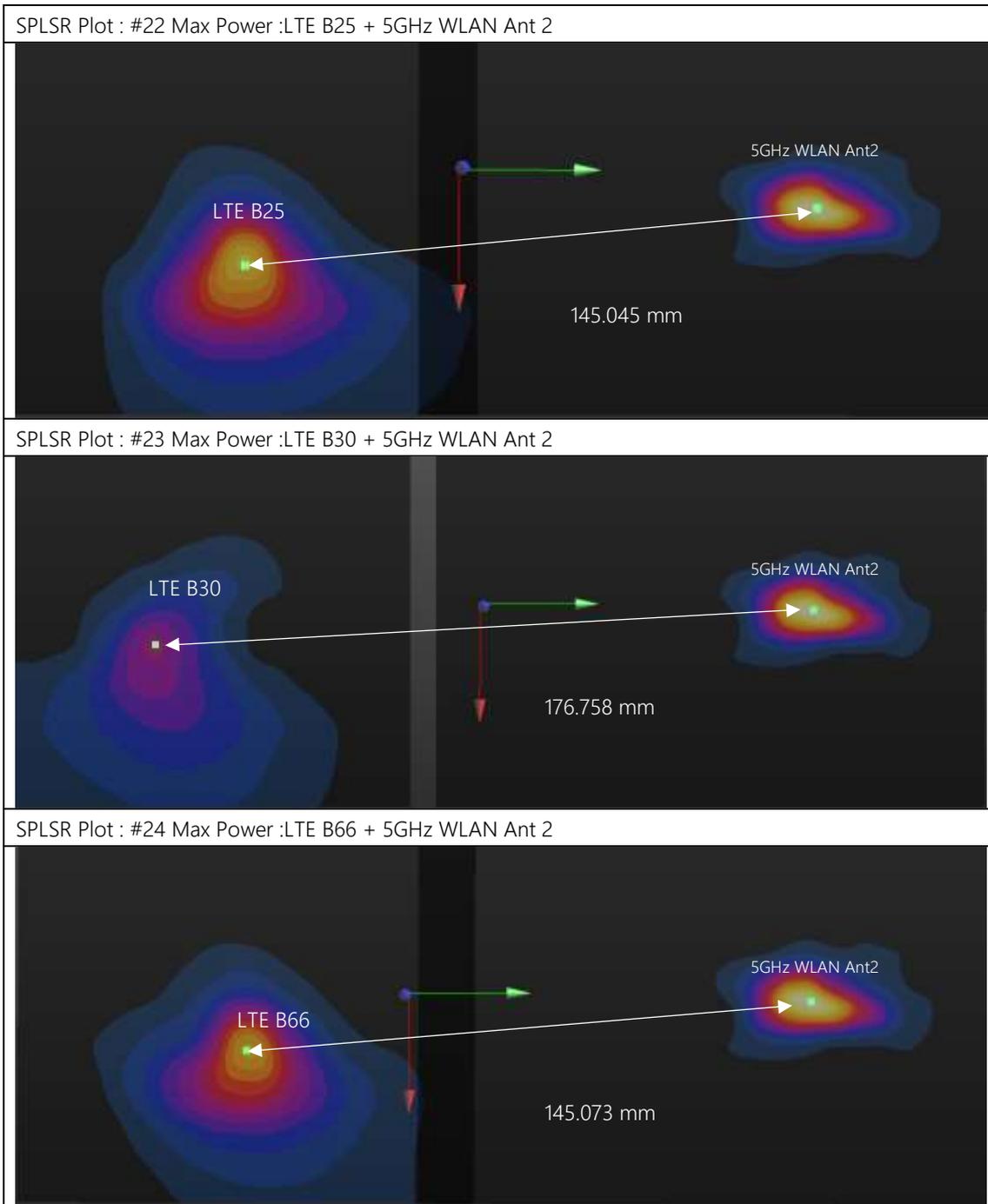
SPLSR Plot : #17 Max Power :LTE B25 + 5GHz WLAN Ant 1

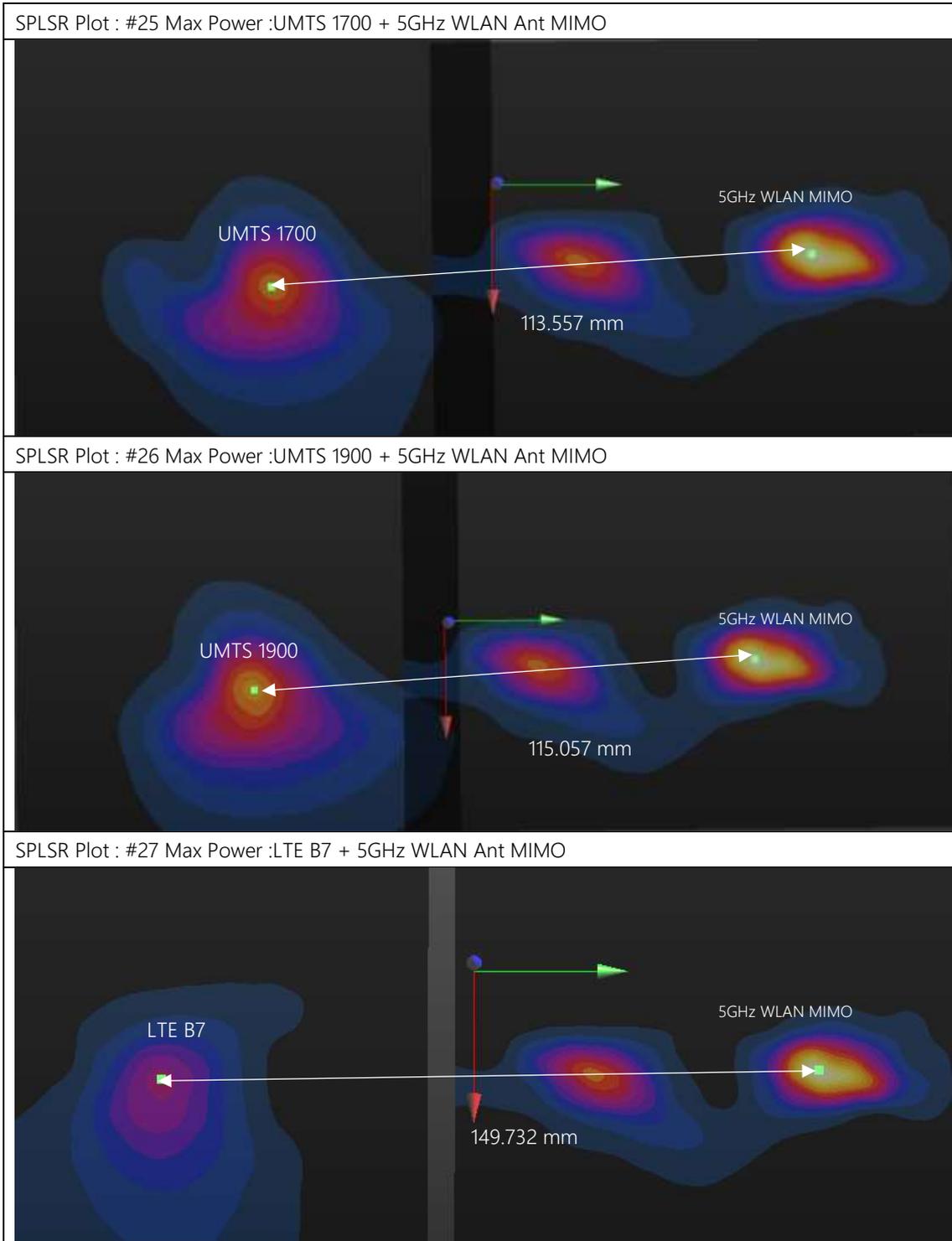


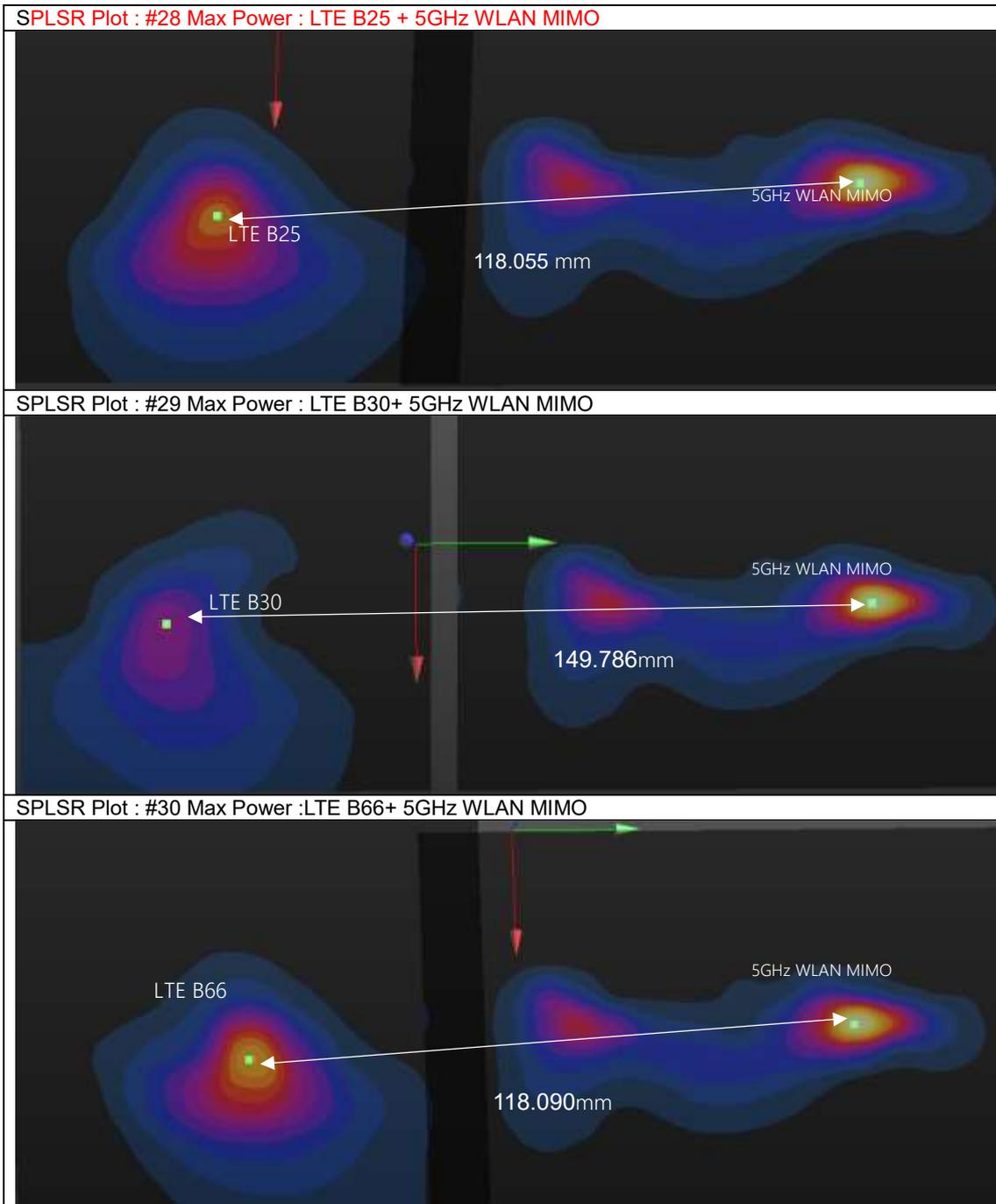
SPLSR Plot : #18 Max Power :LTE B66 + 5GHz WLAN Ant 1

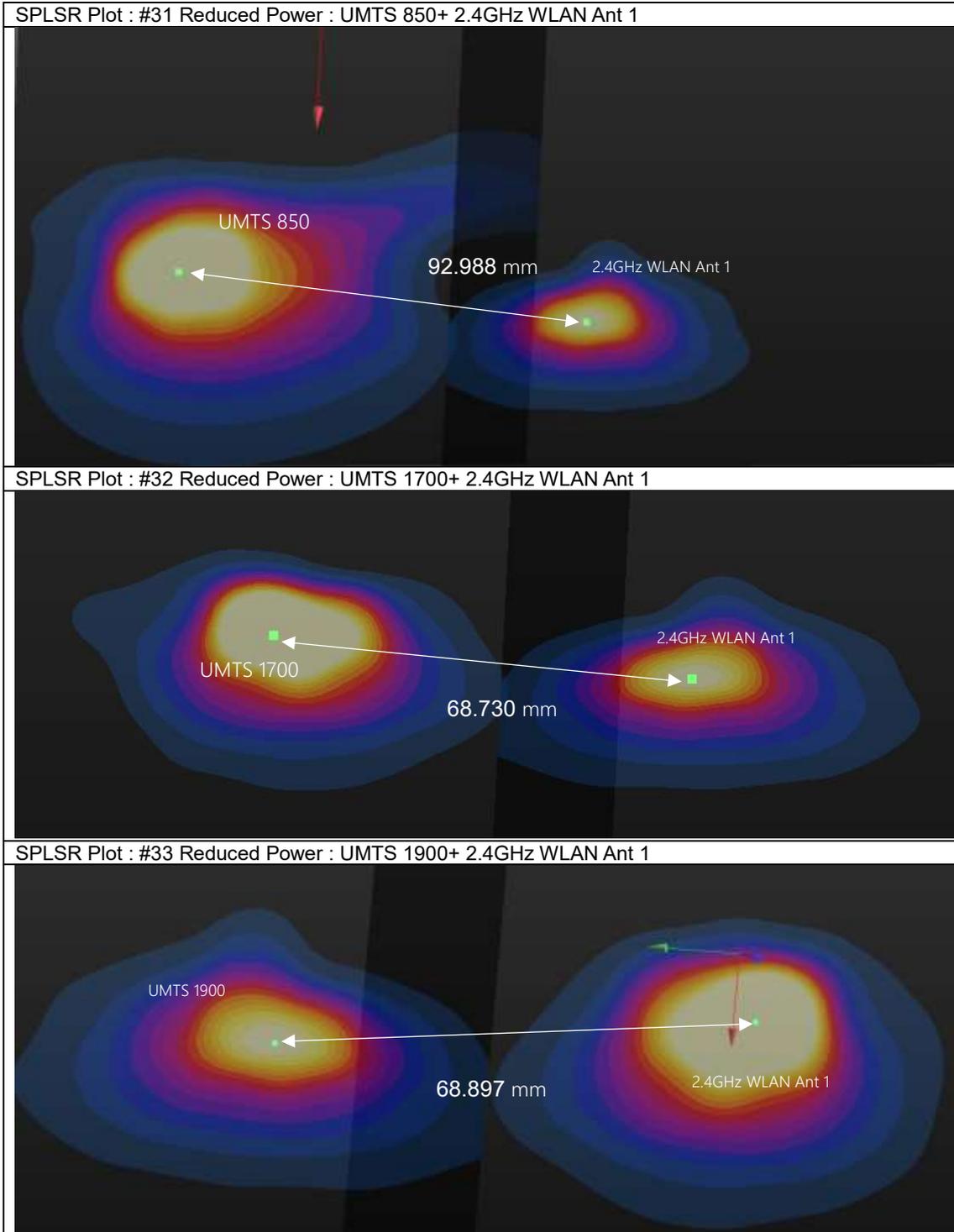


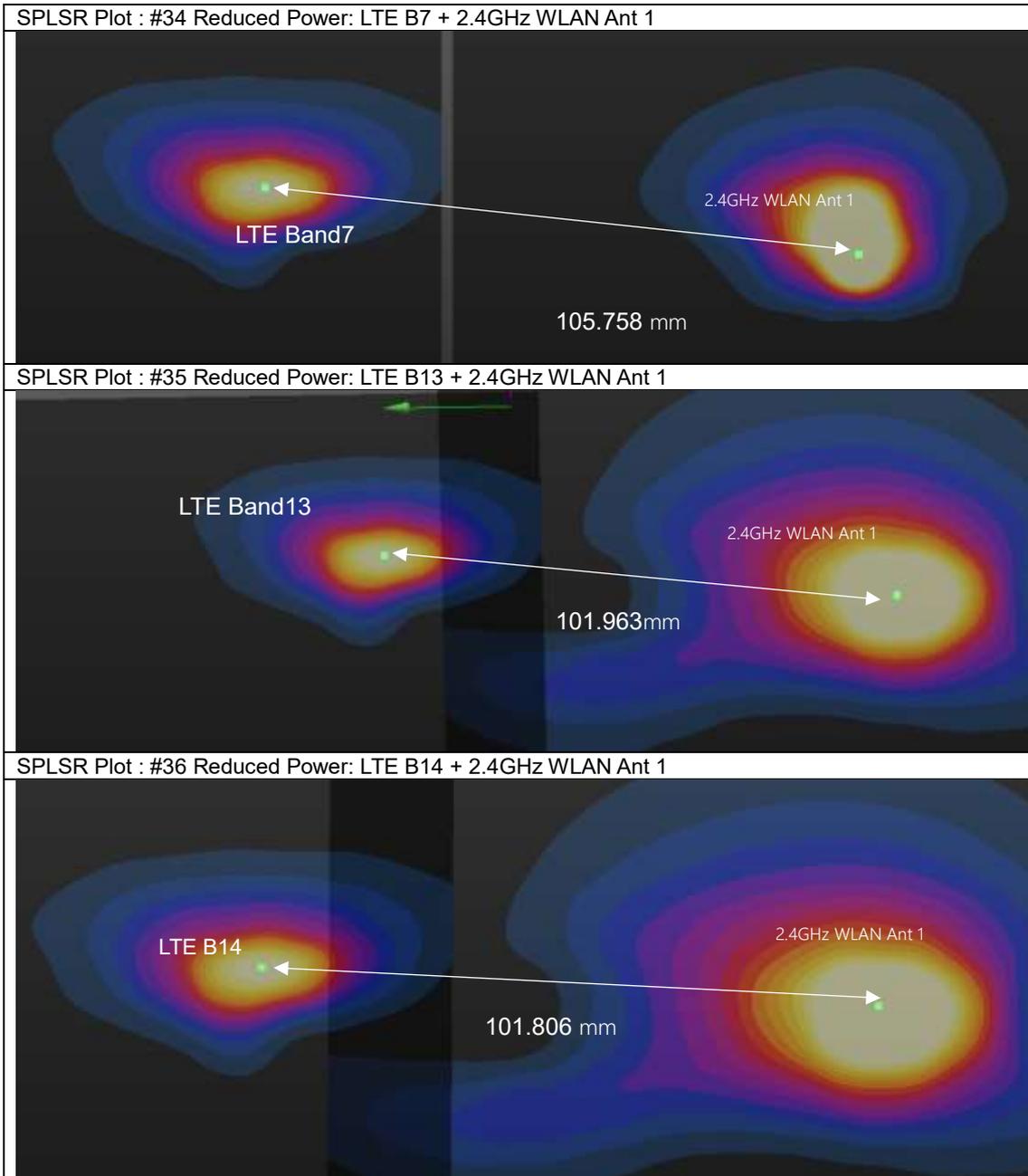


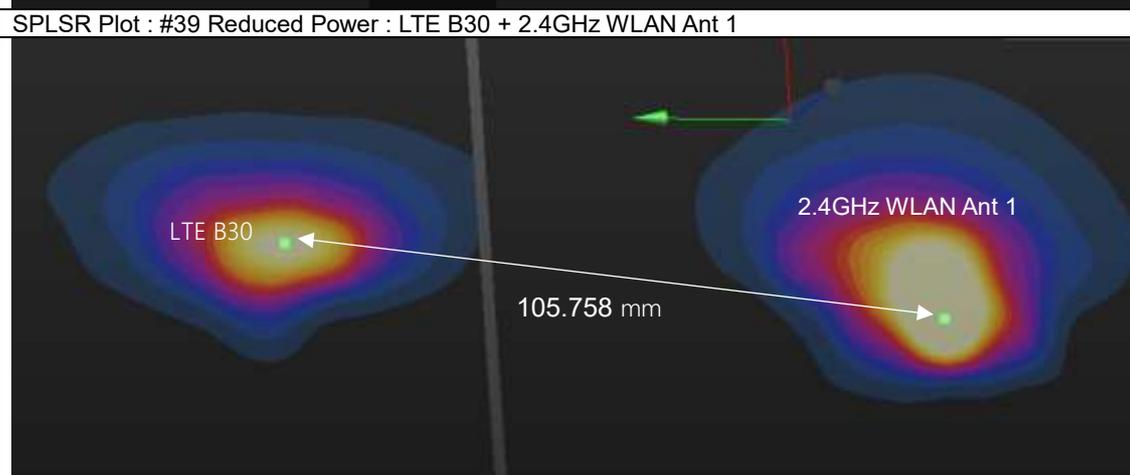
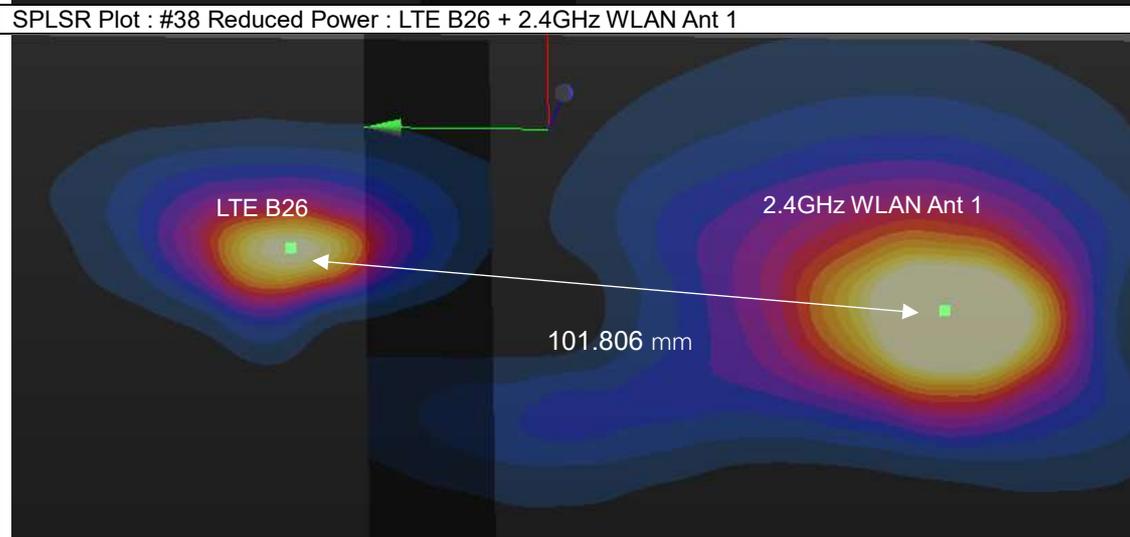
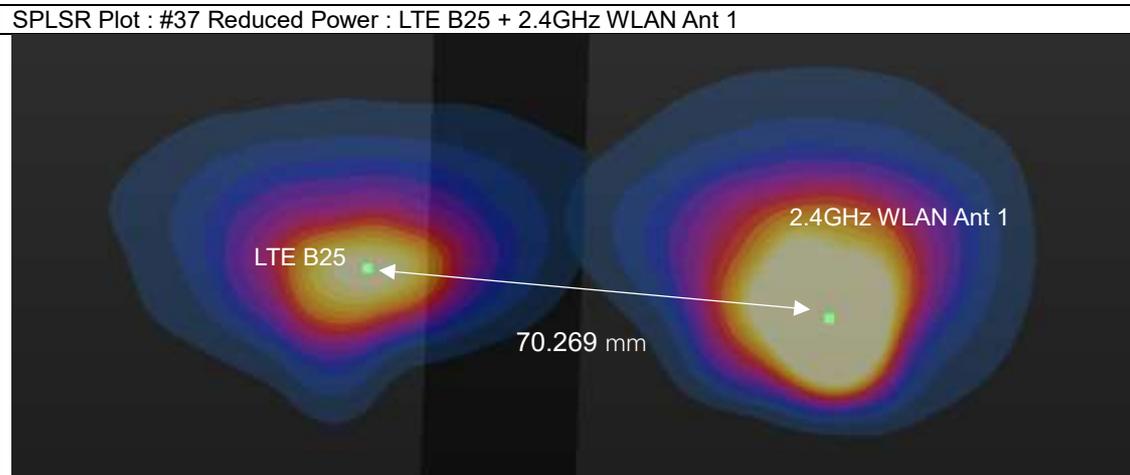


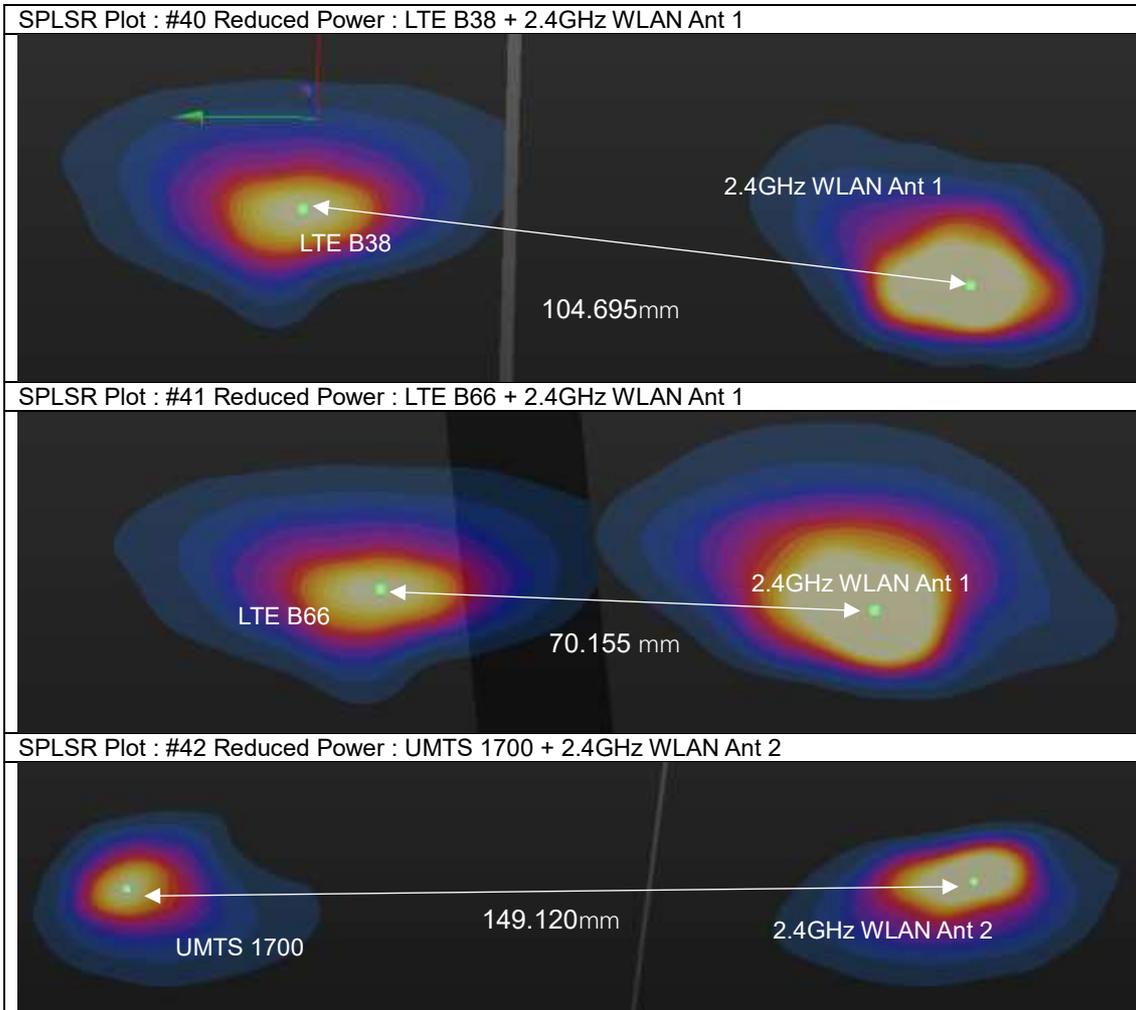


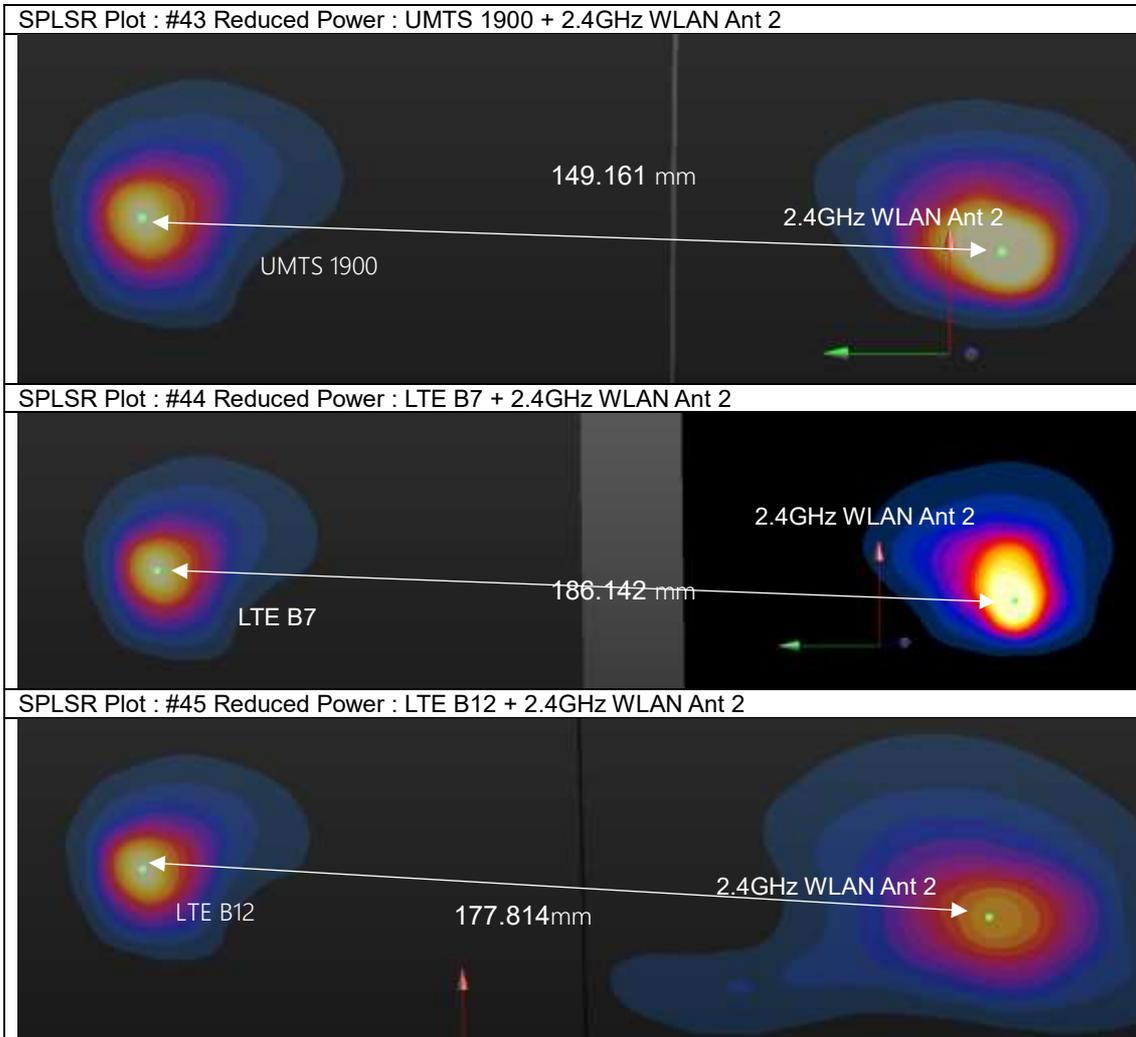


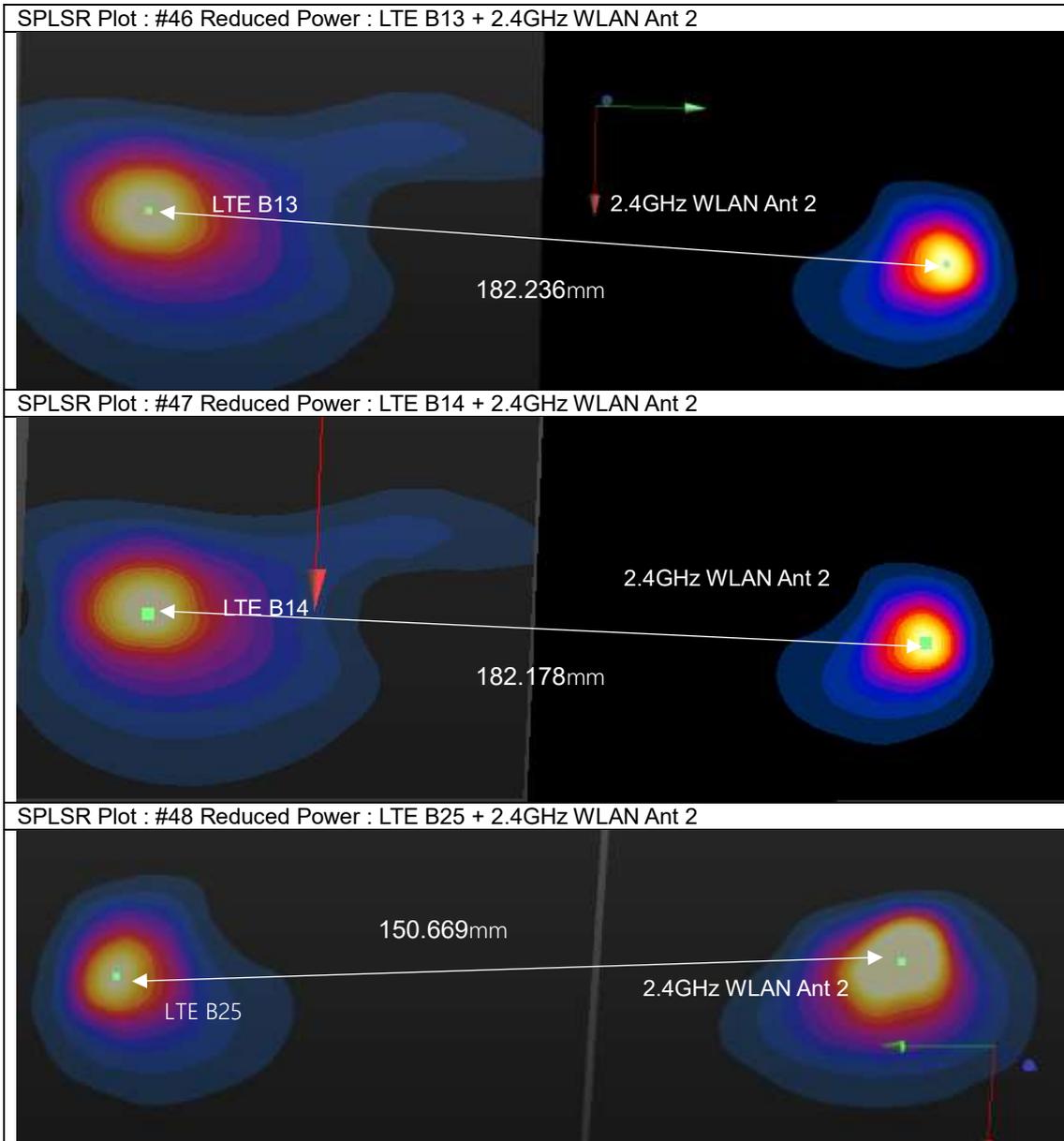


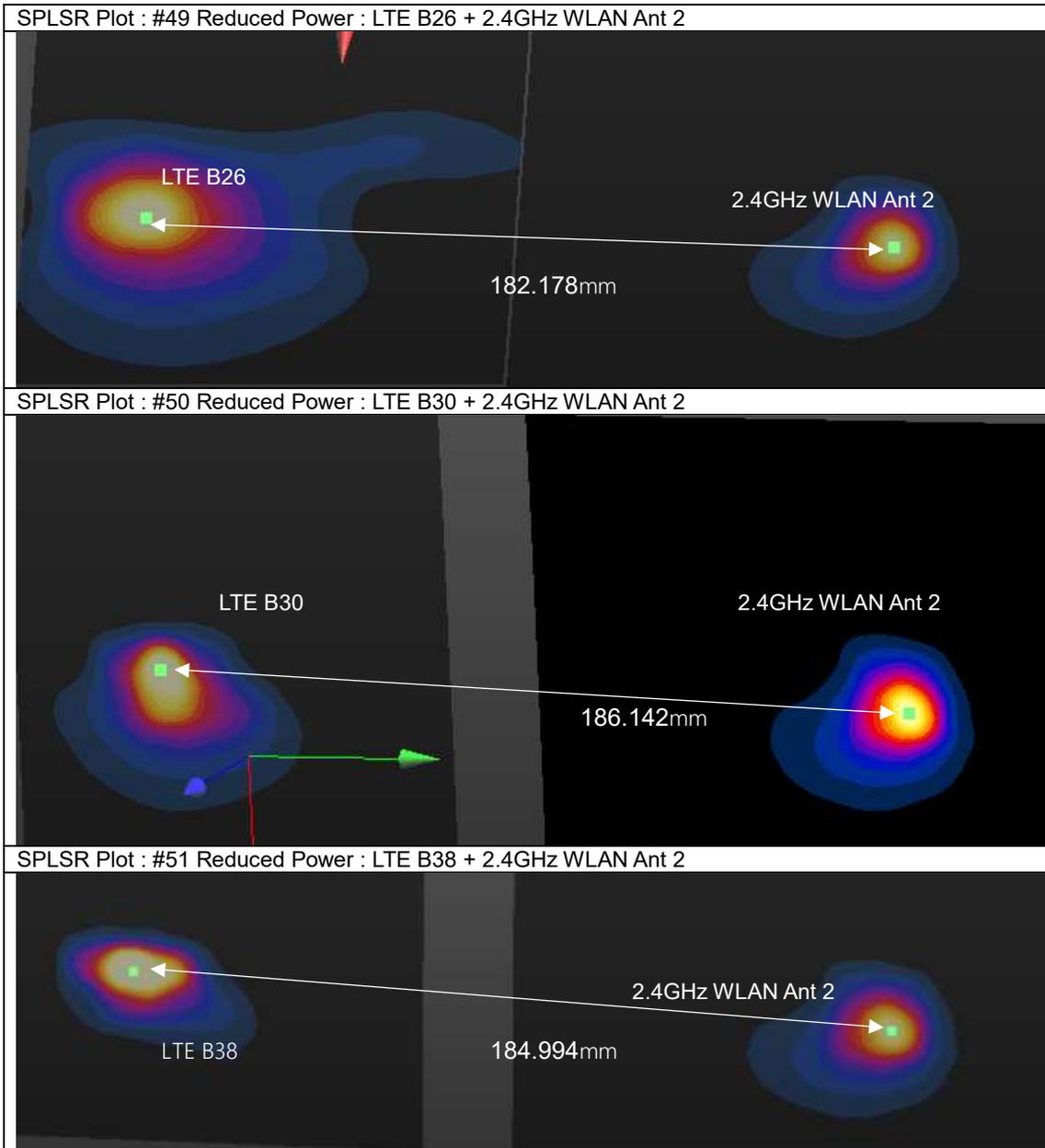


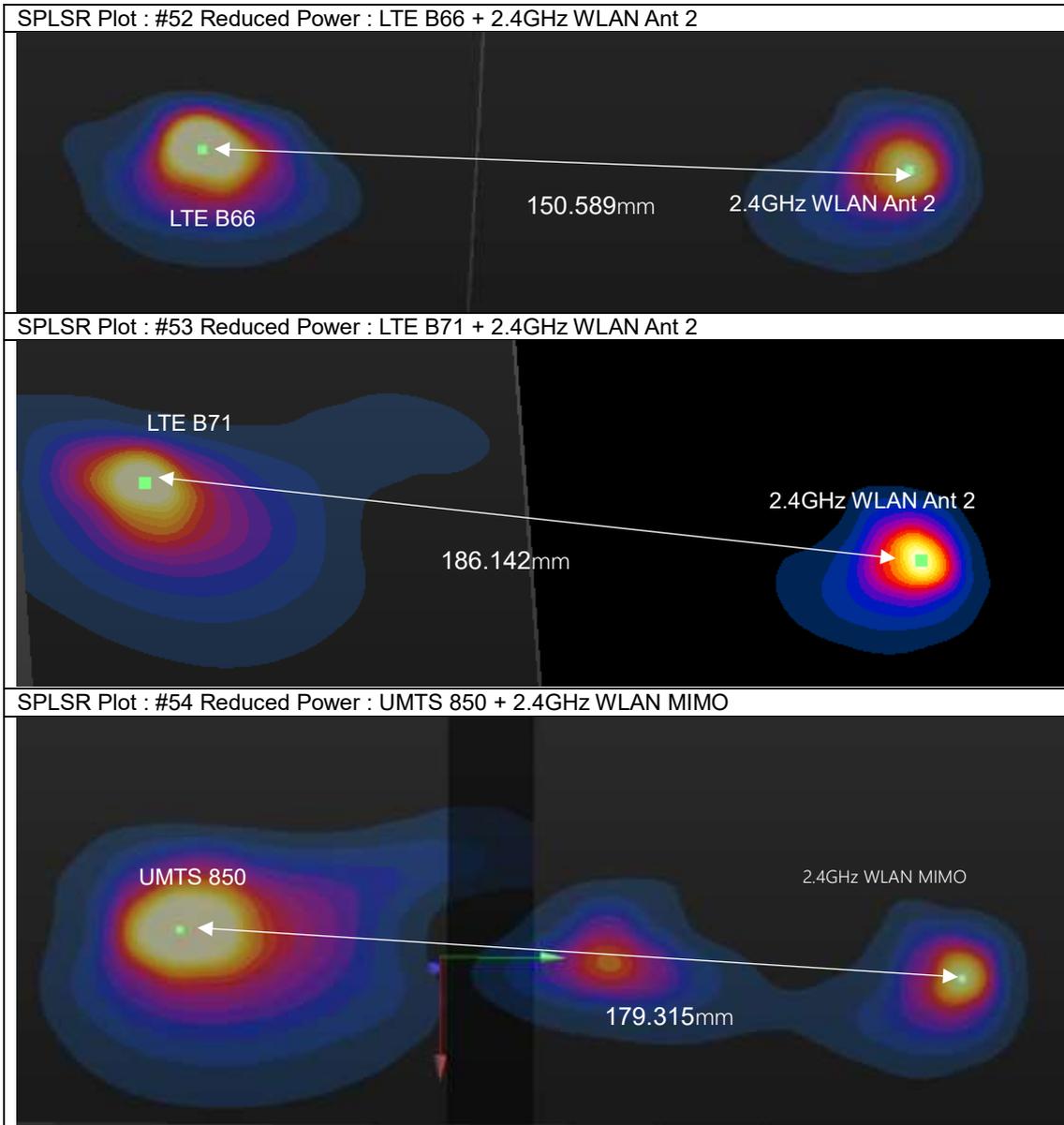


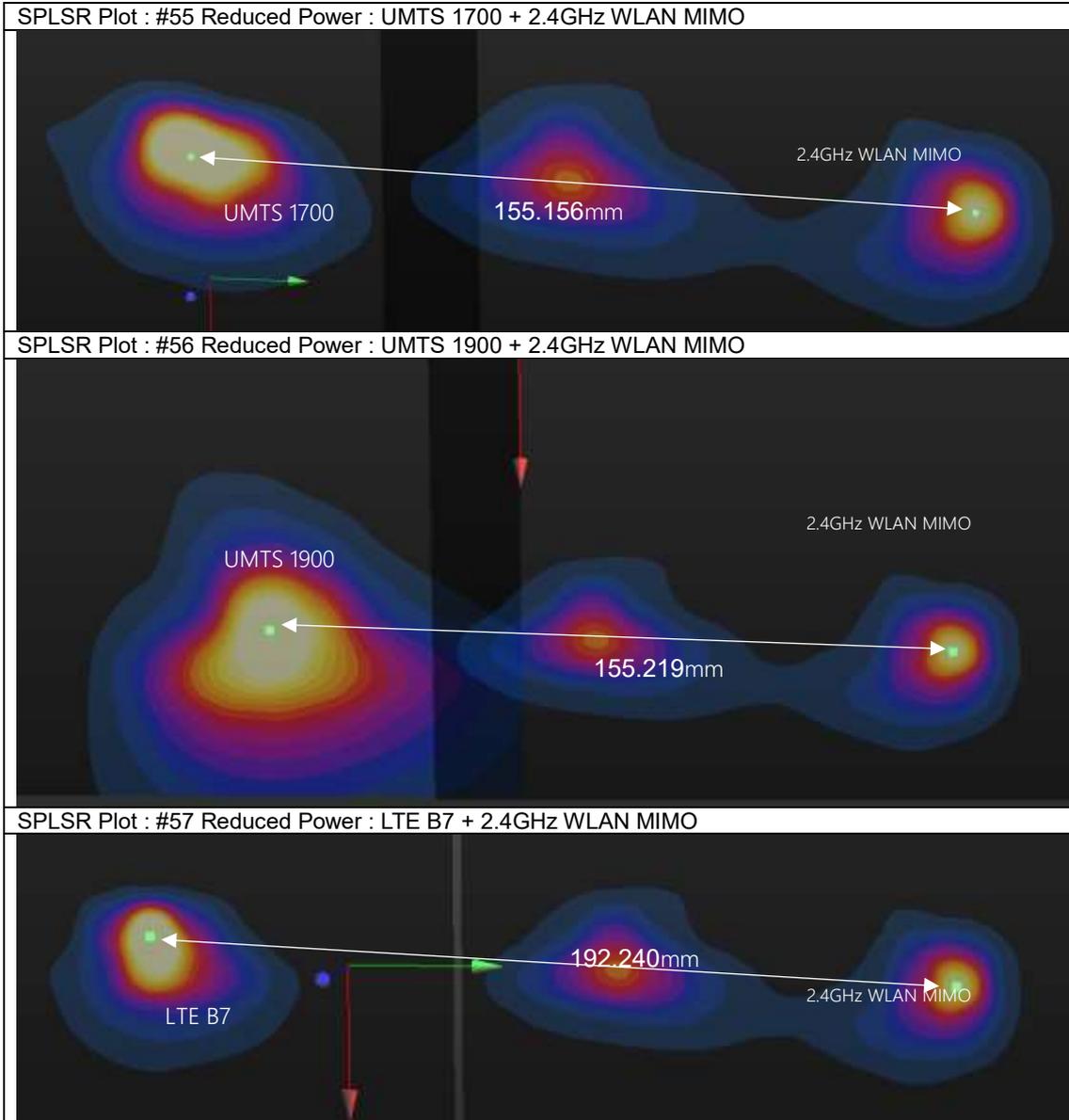


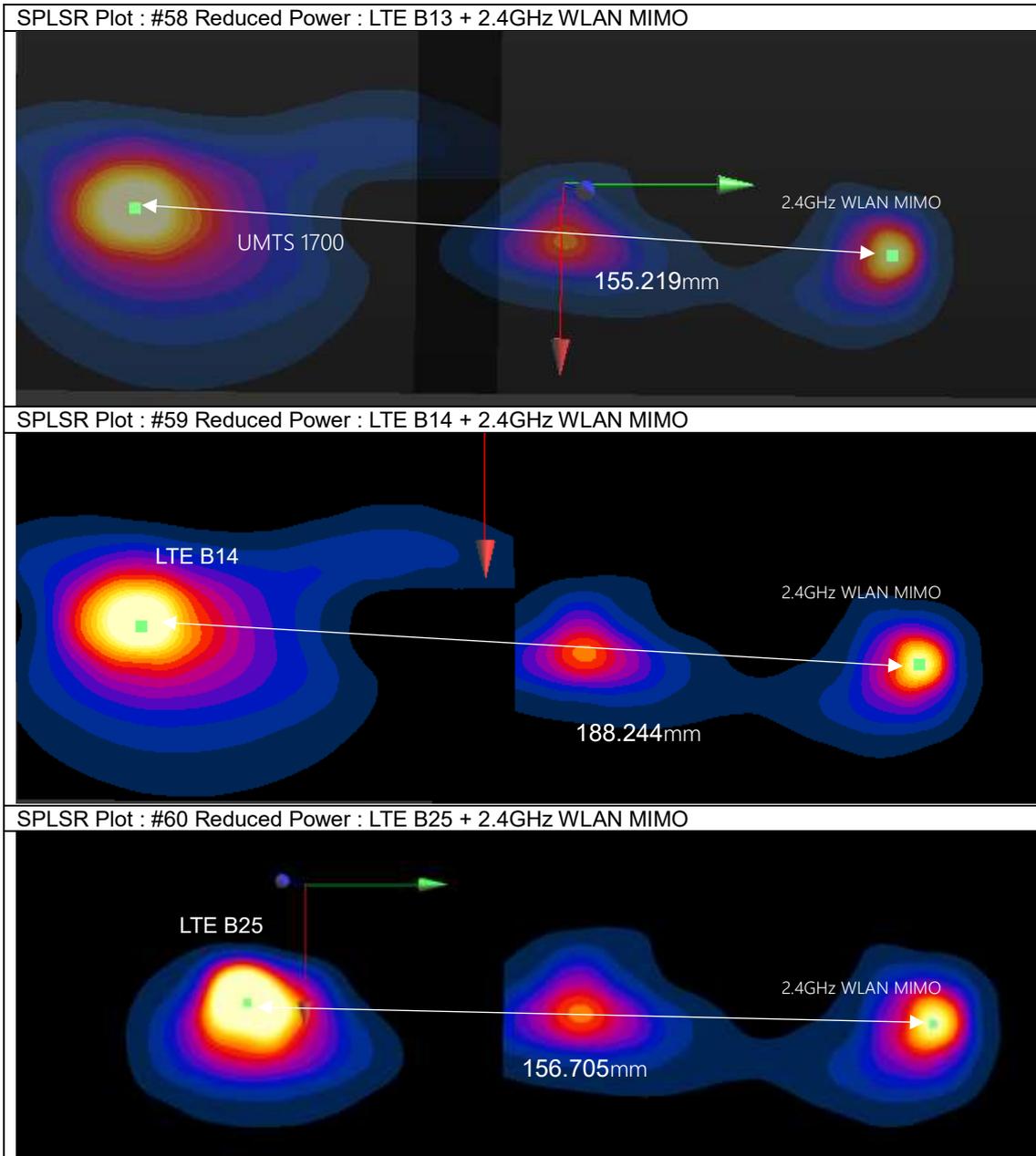


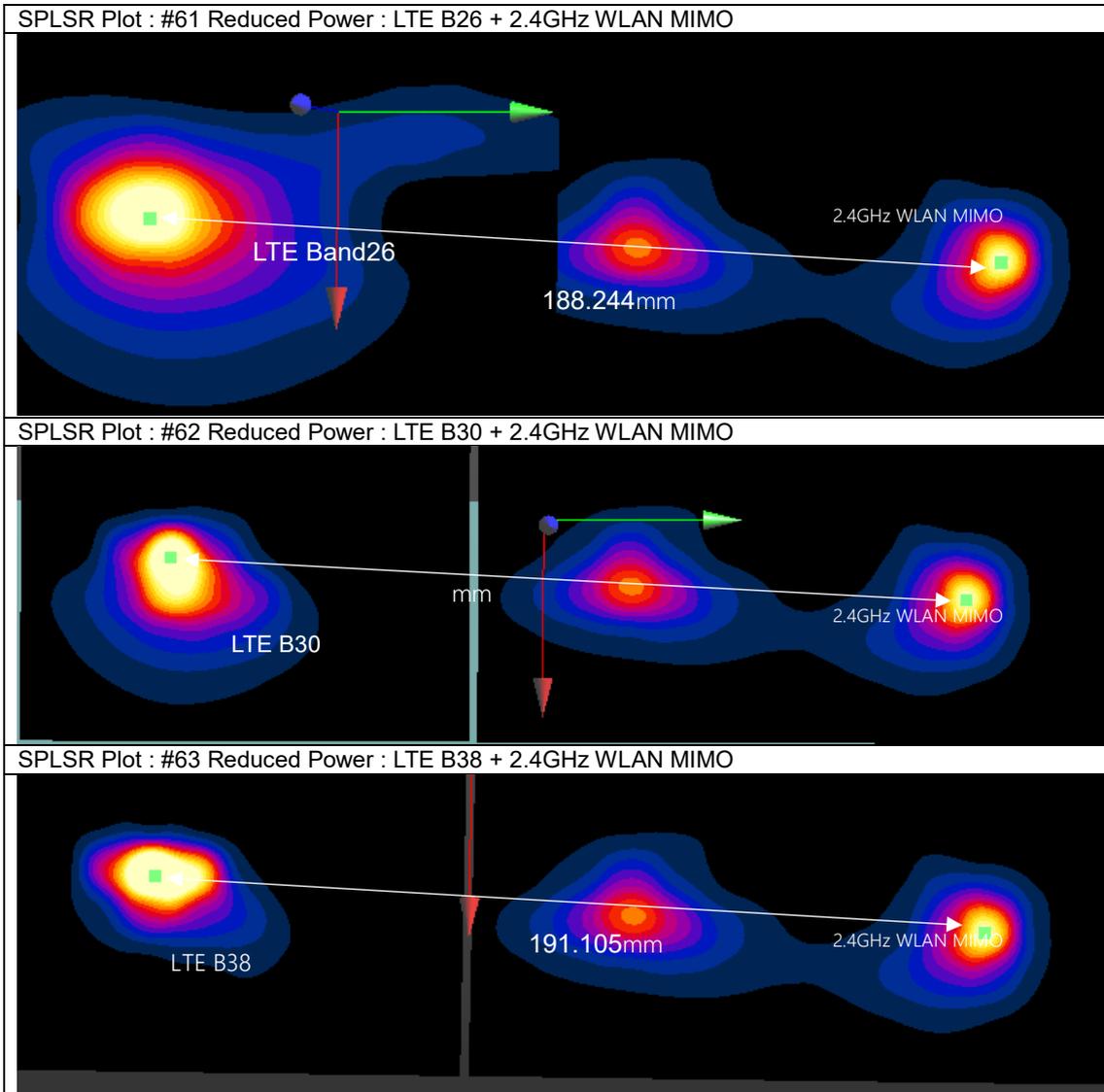


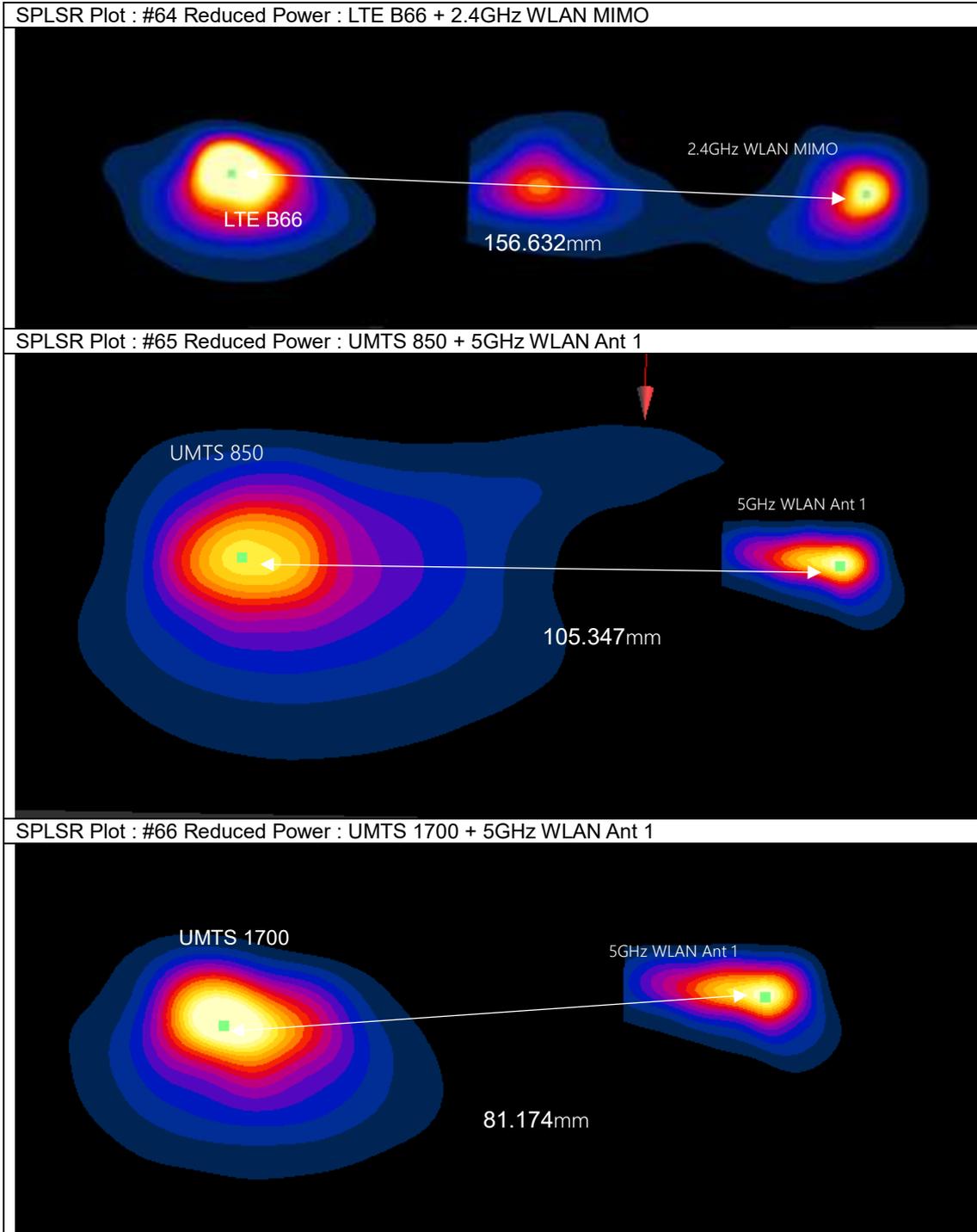




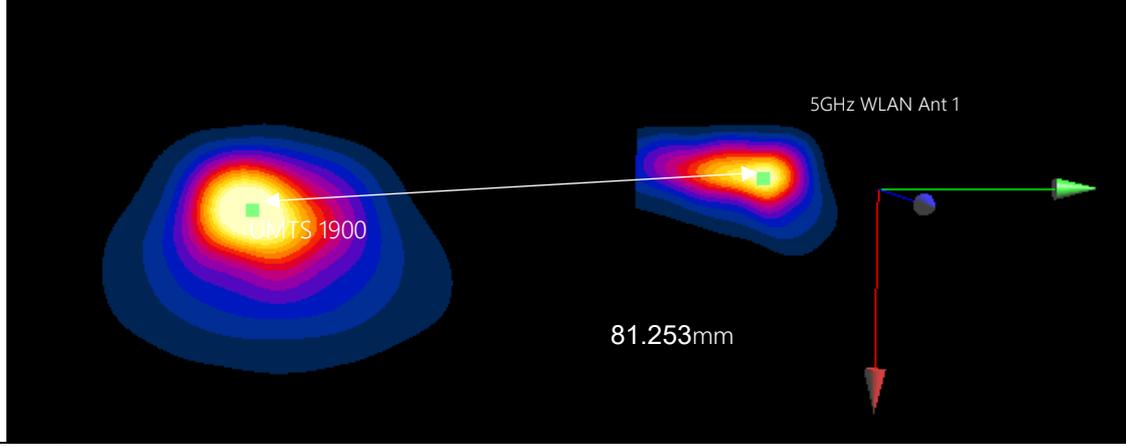




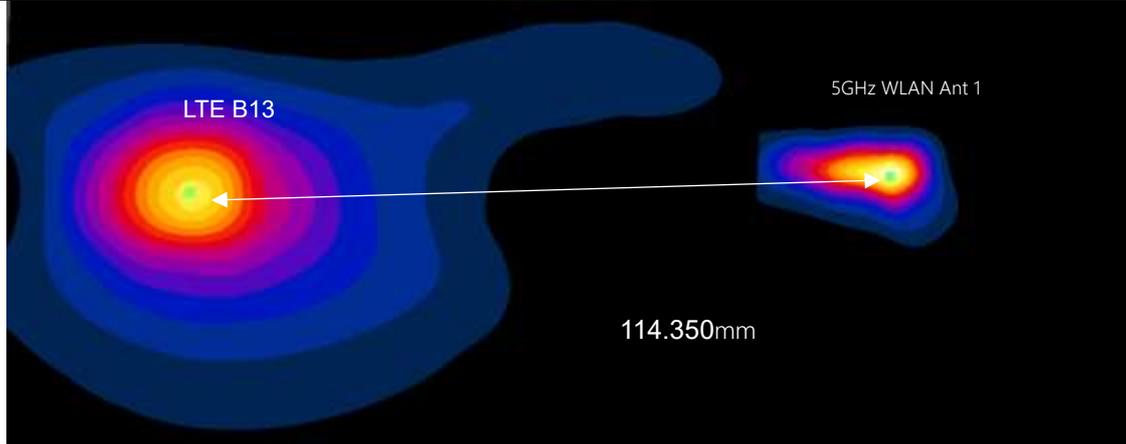




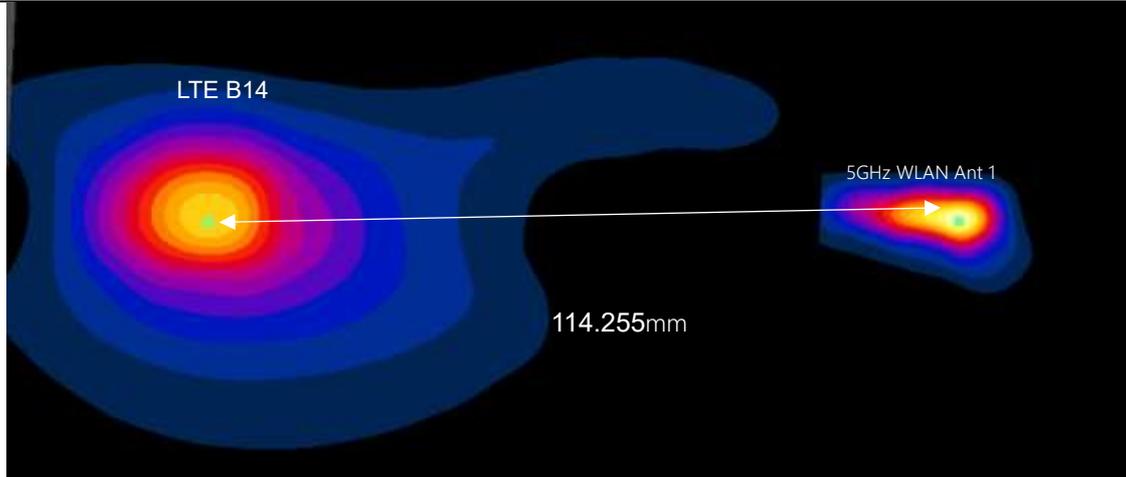
SPLSR Plot : #67 Reduced Power : UMTS 1900 + 5GHz WLAN Ant 1

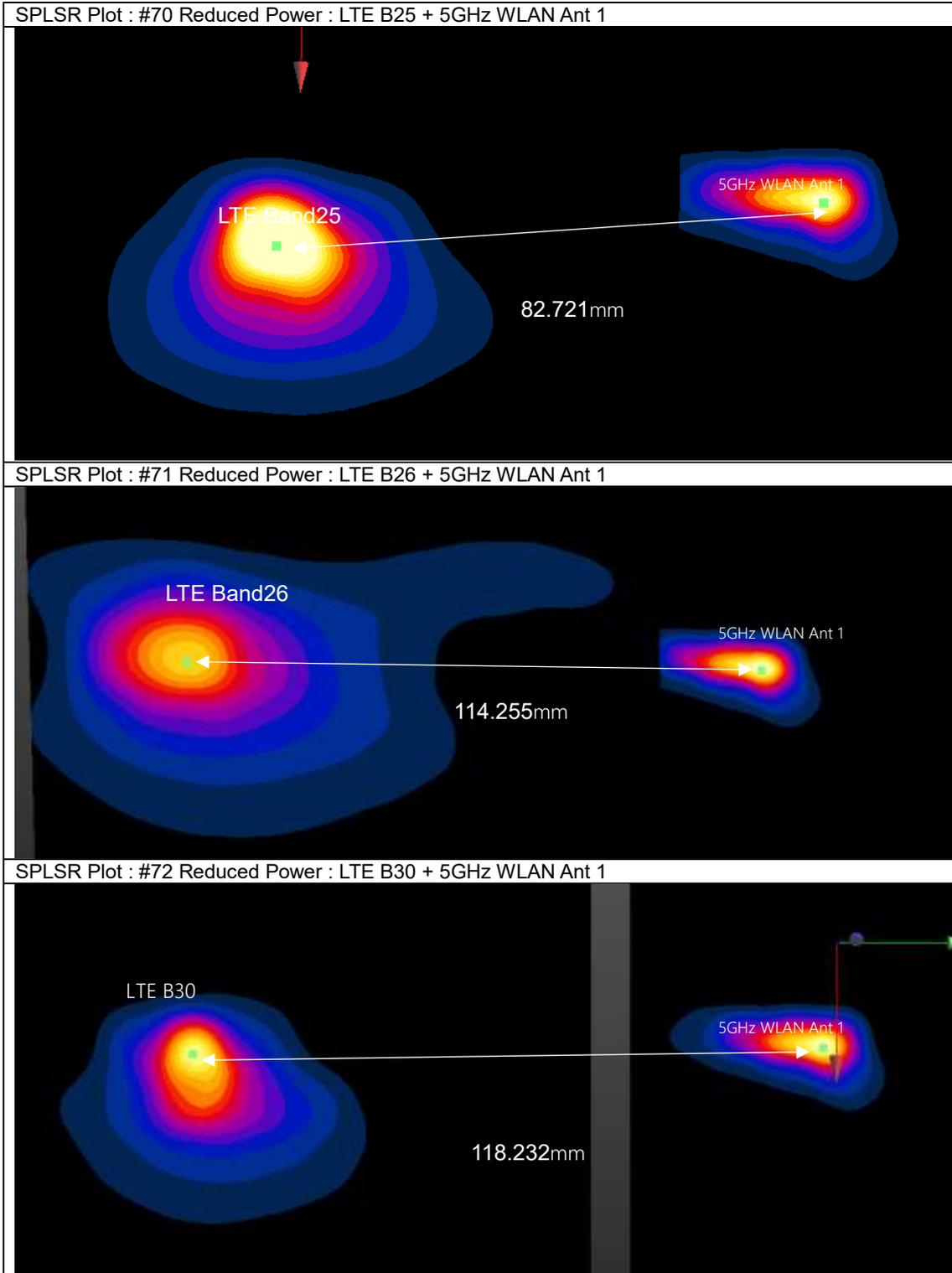


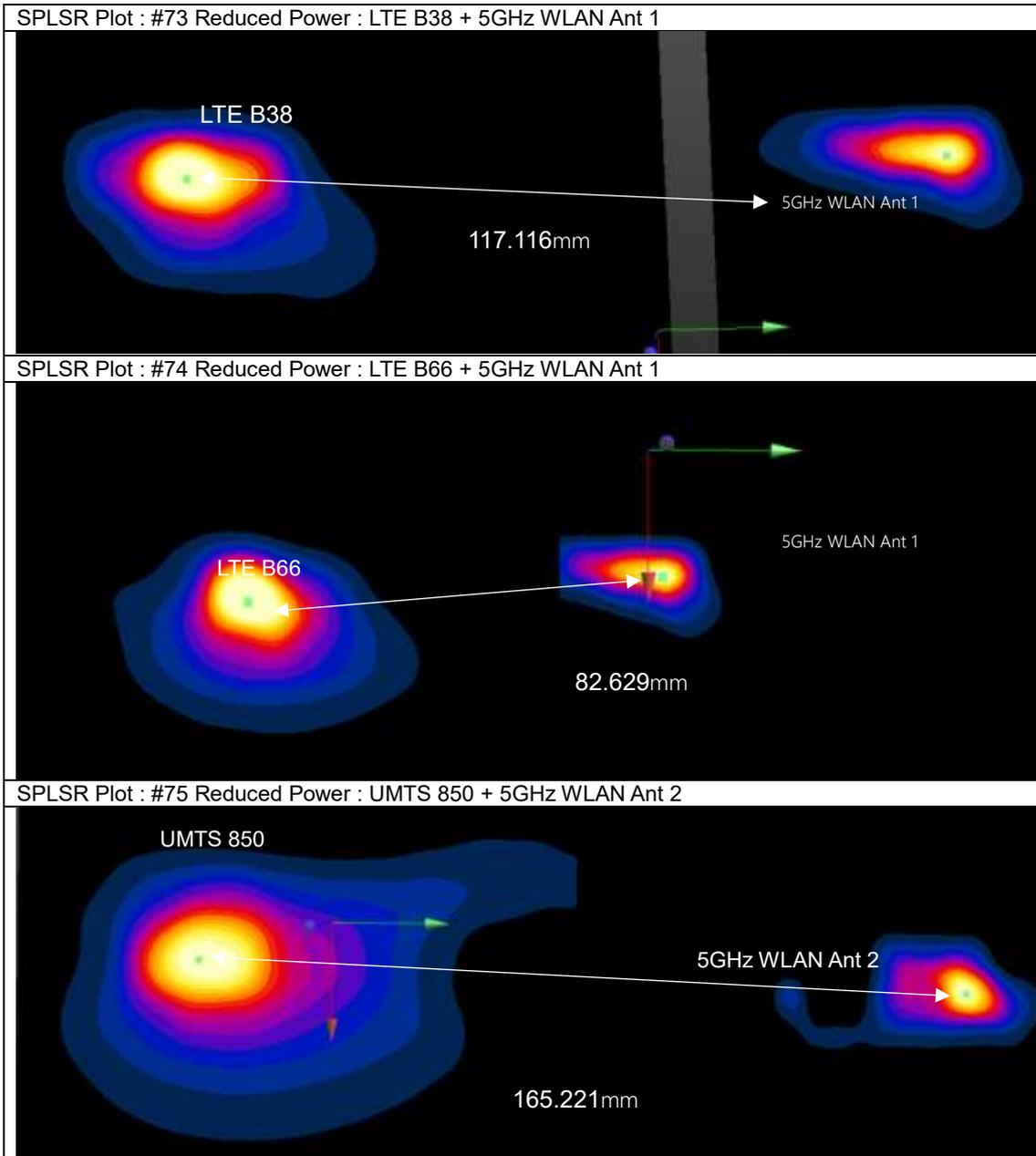
SPLSR Plot : #68 Reduced Power : LTE B13 + 5GHz WLAN Ant 1

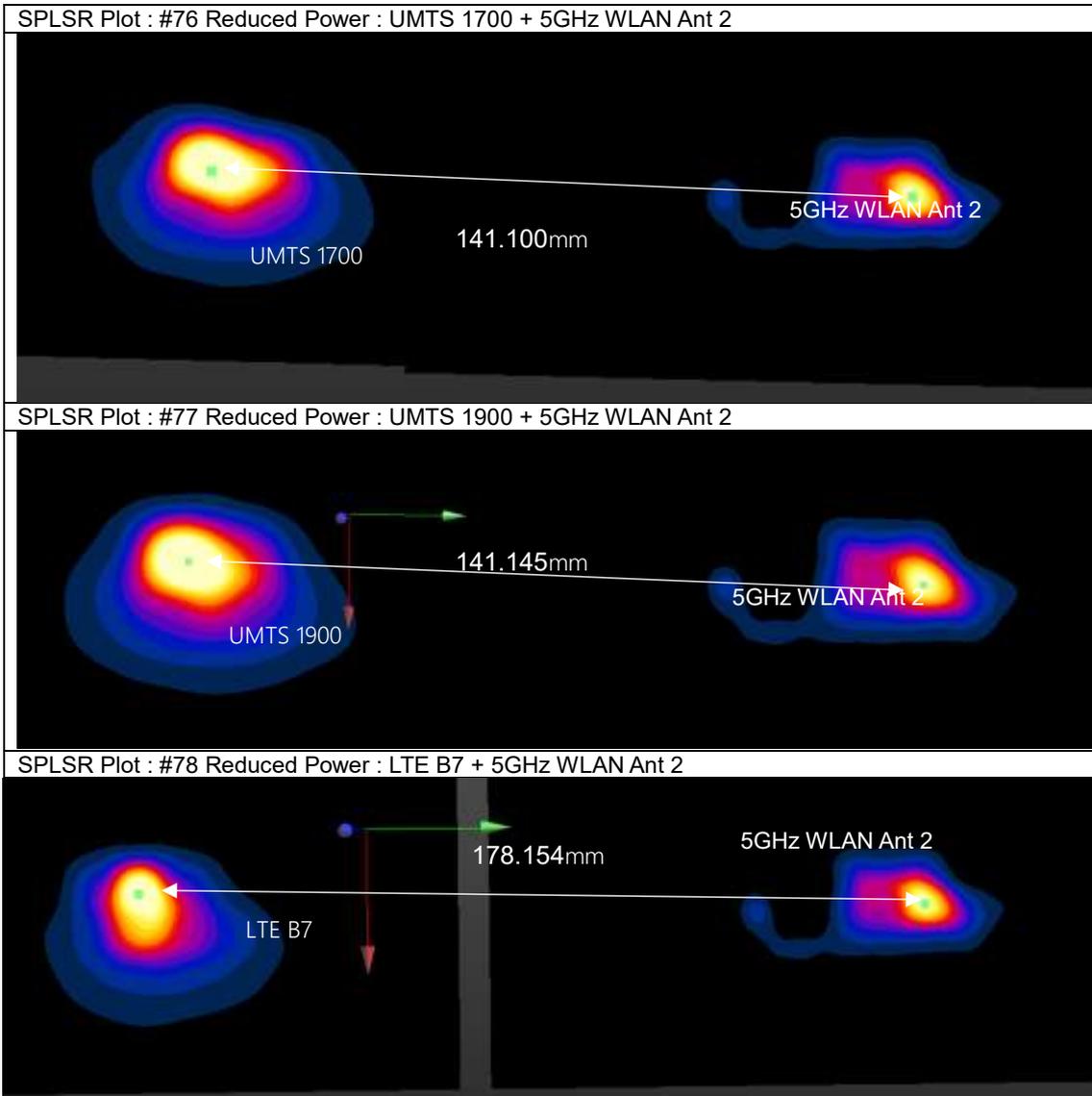


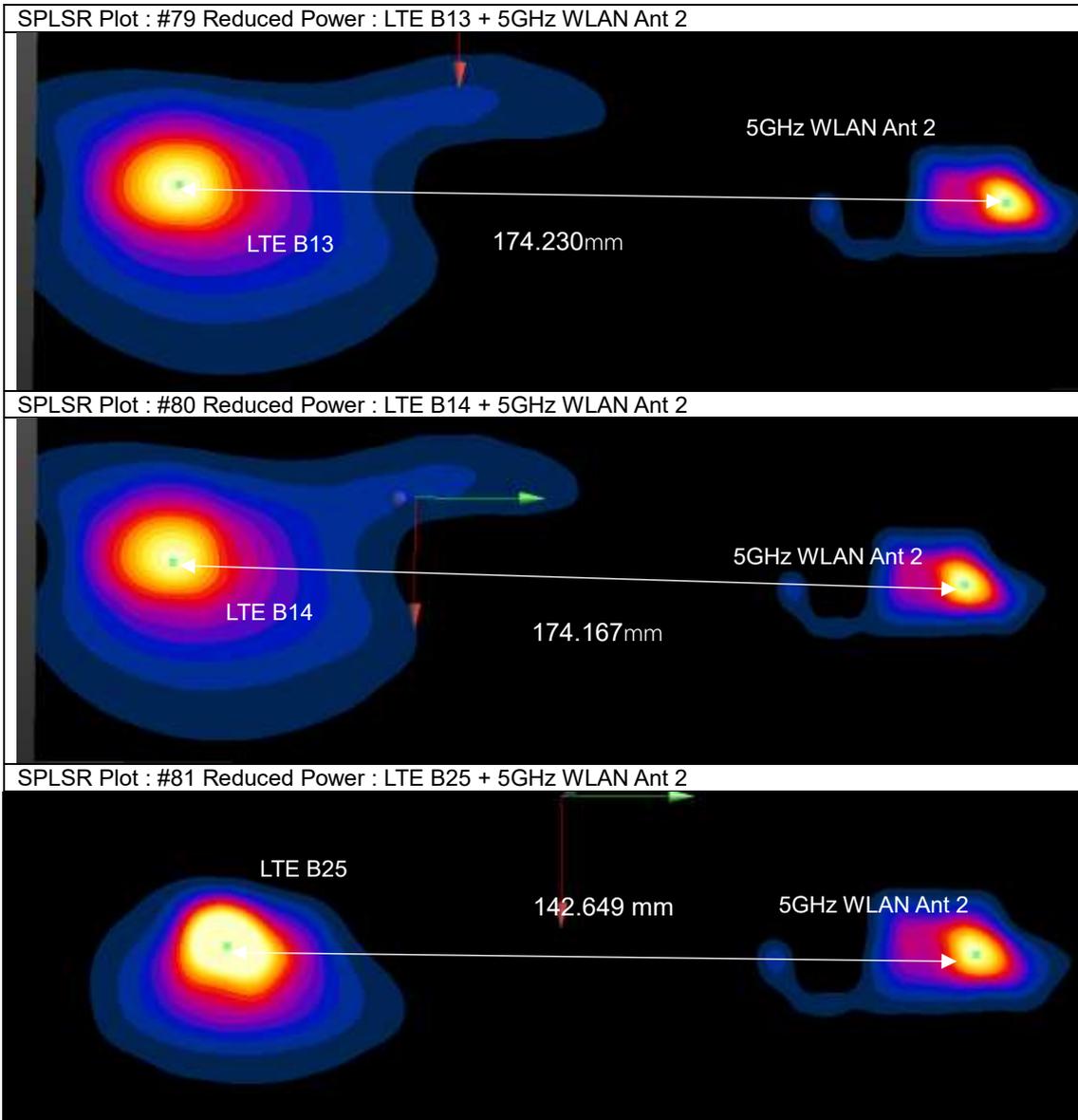
SPLSR Plot : #69 Reduced Power : LTE B14 + 5GHz WLAN Ant 1

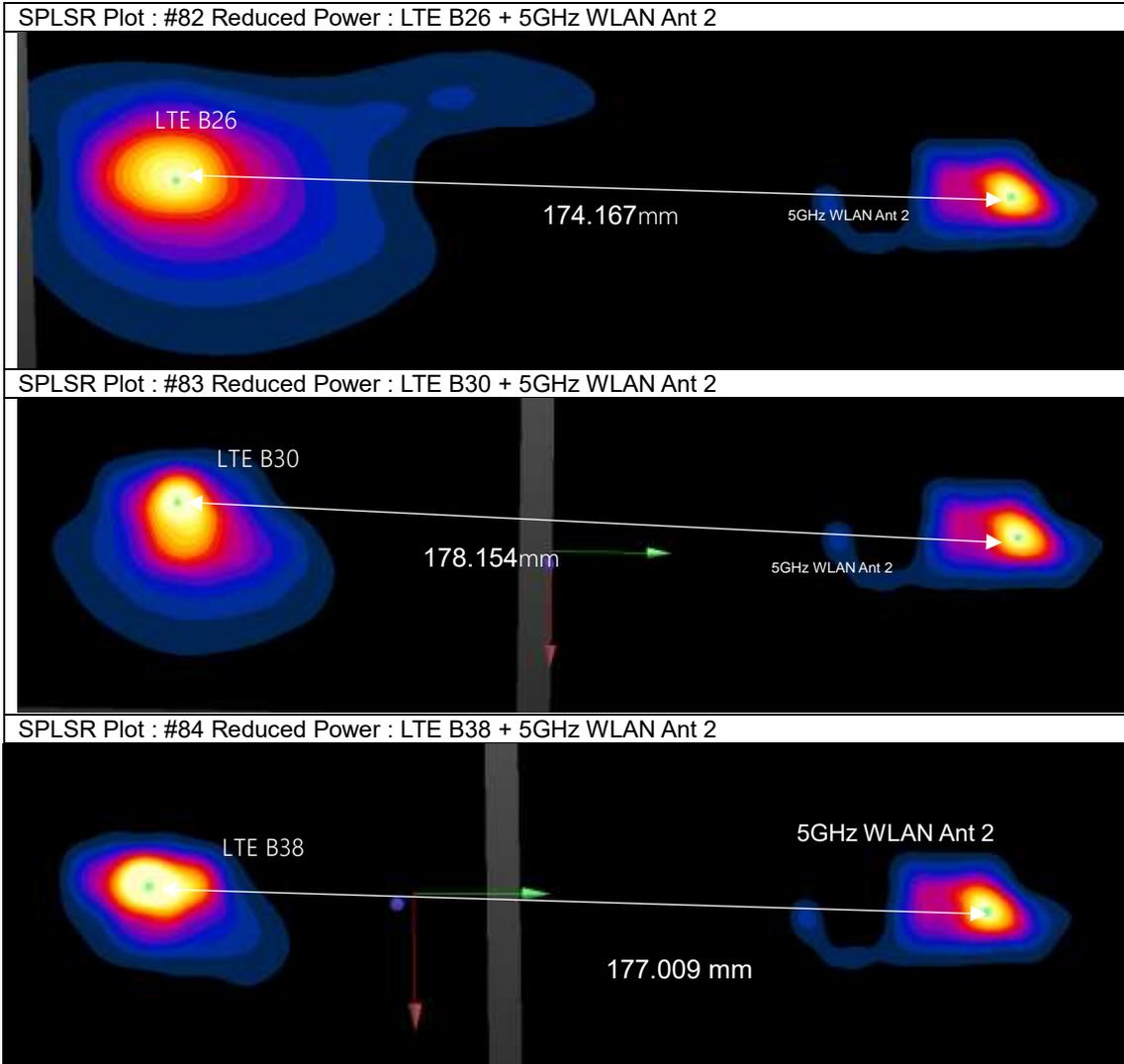


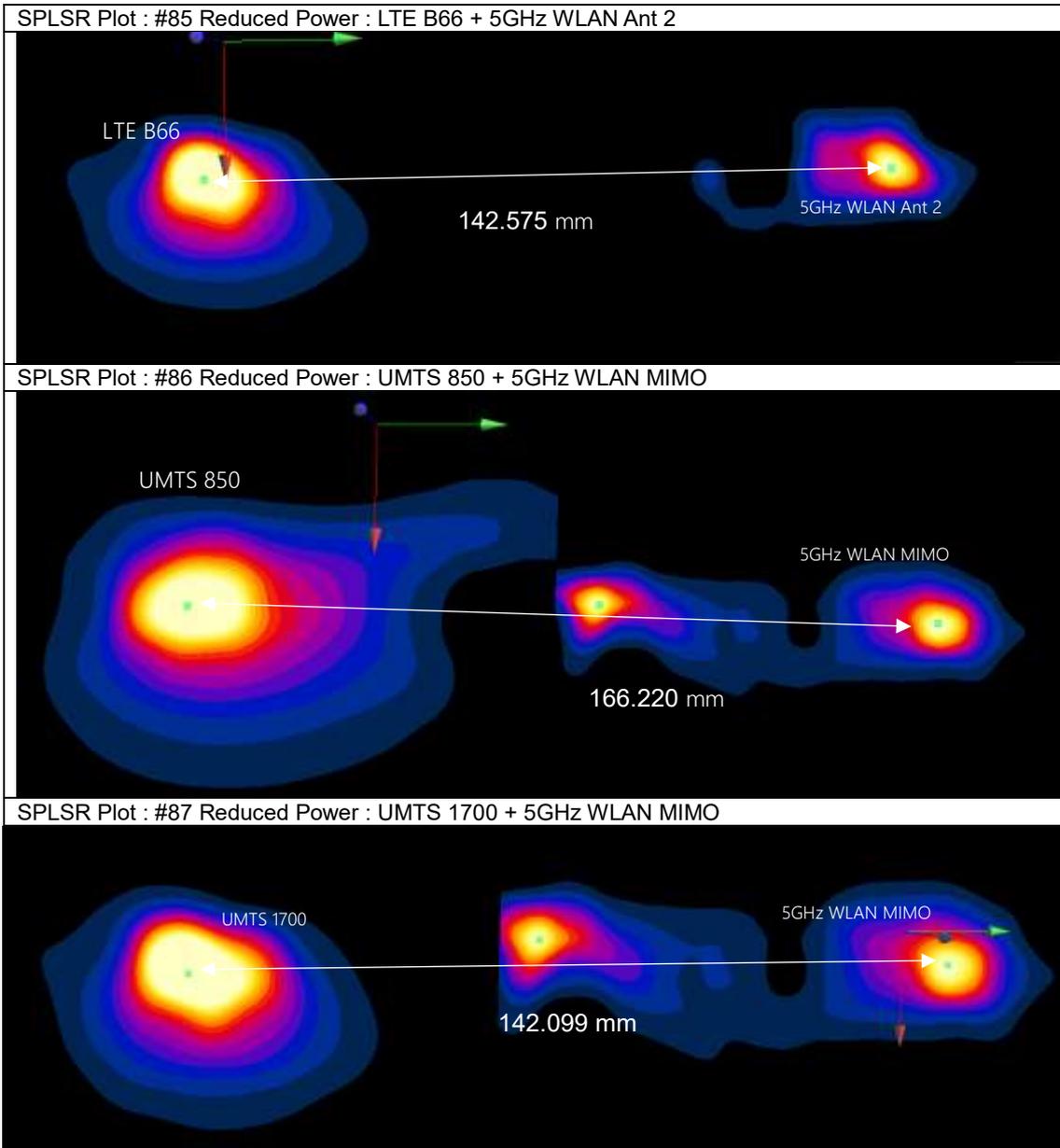


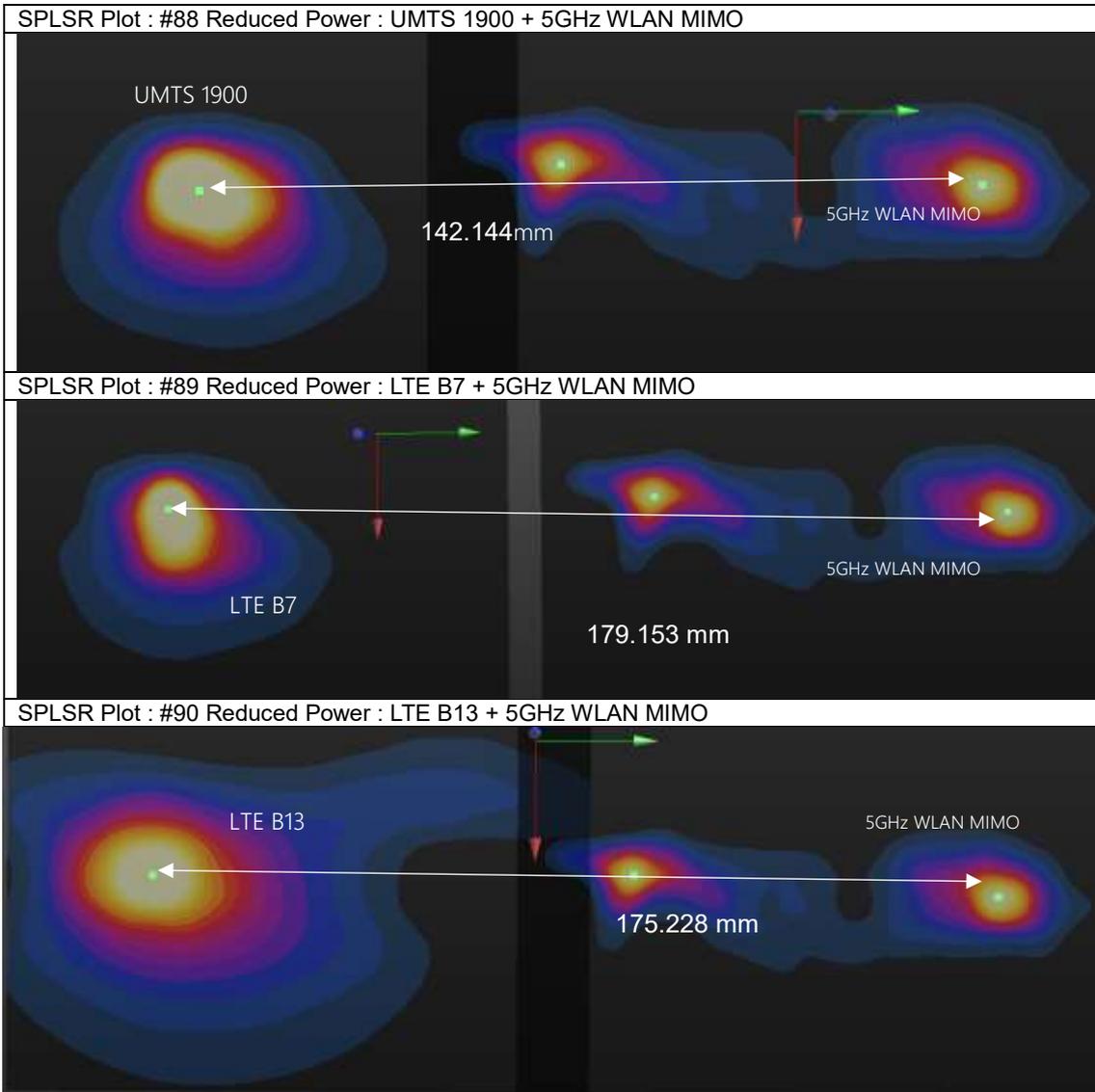


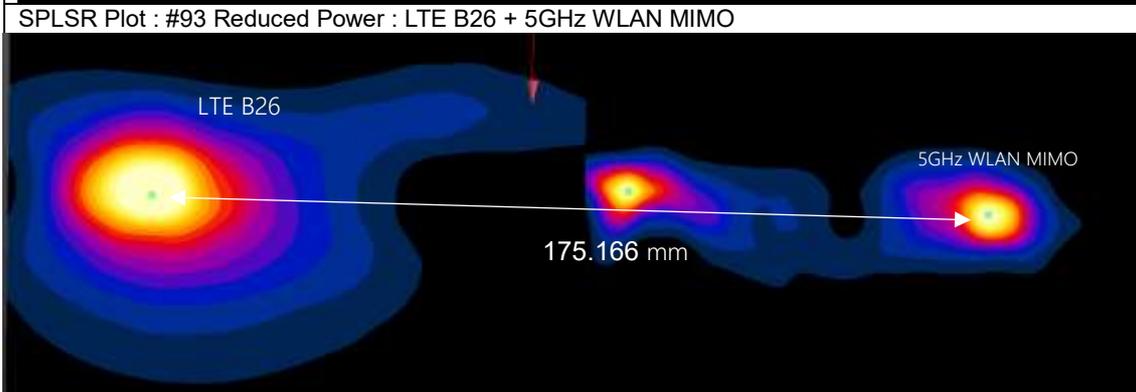
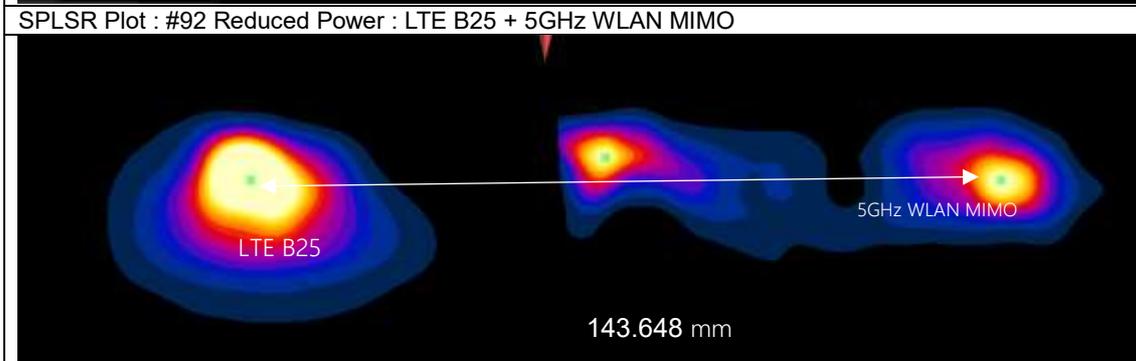
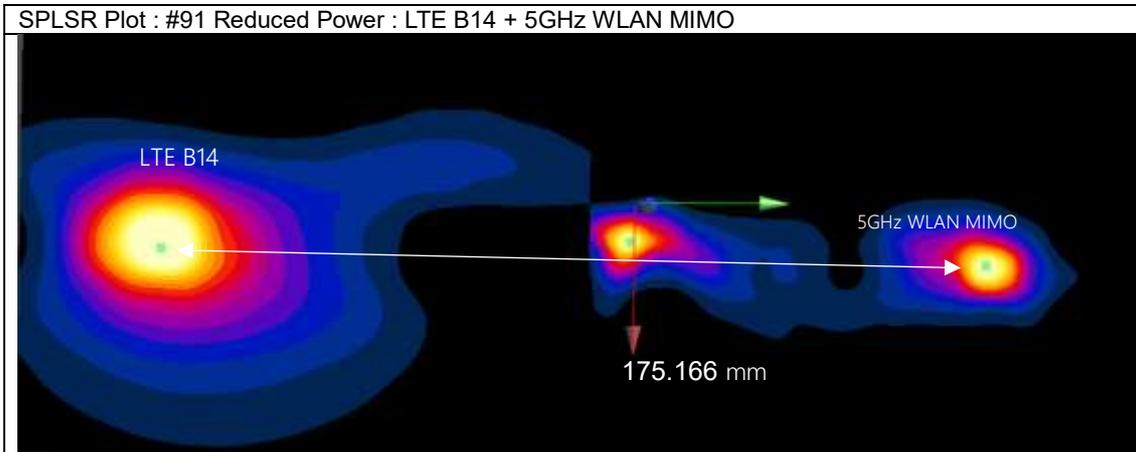


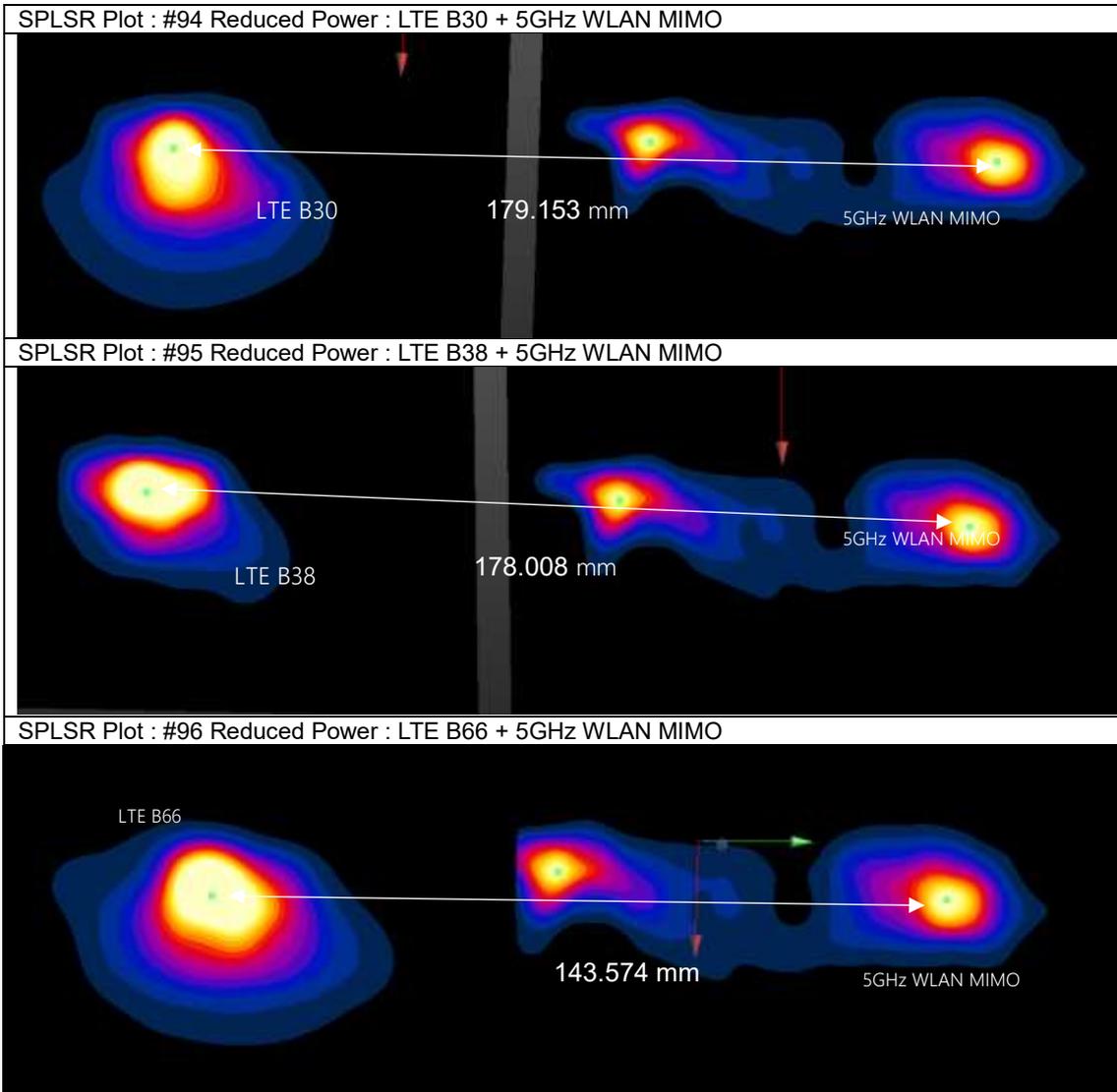


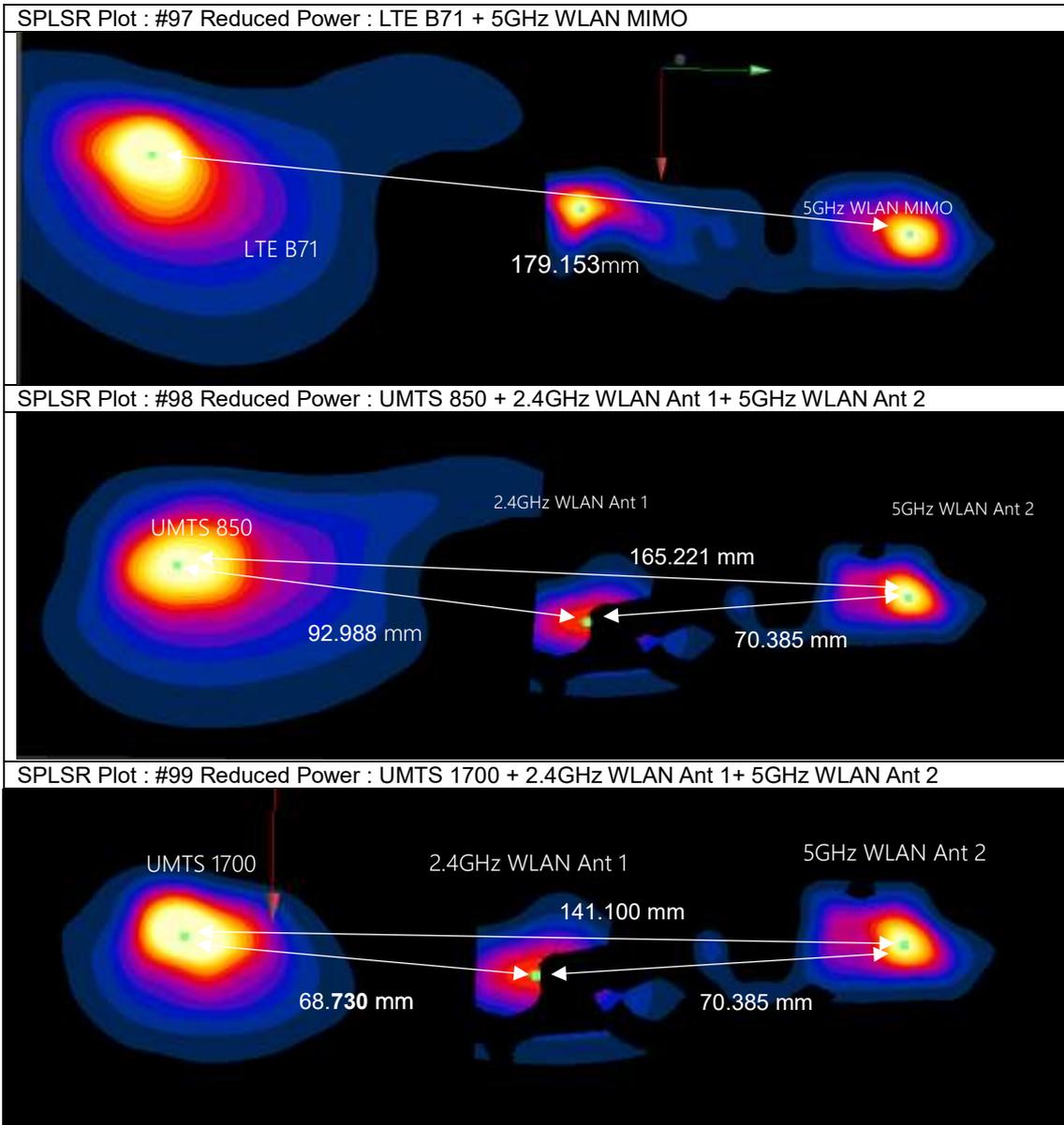


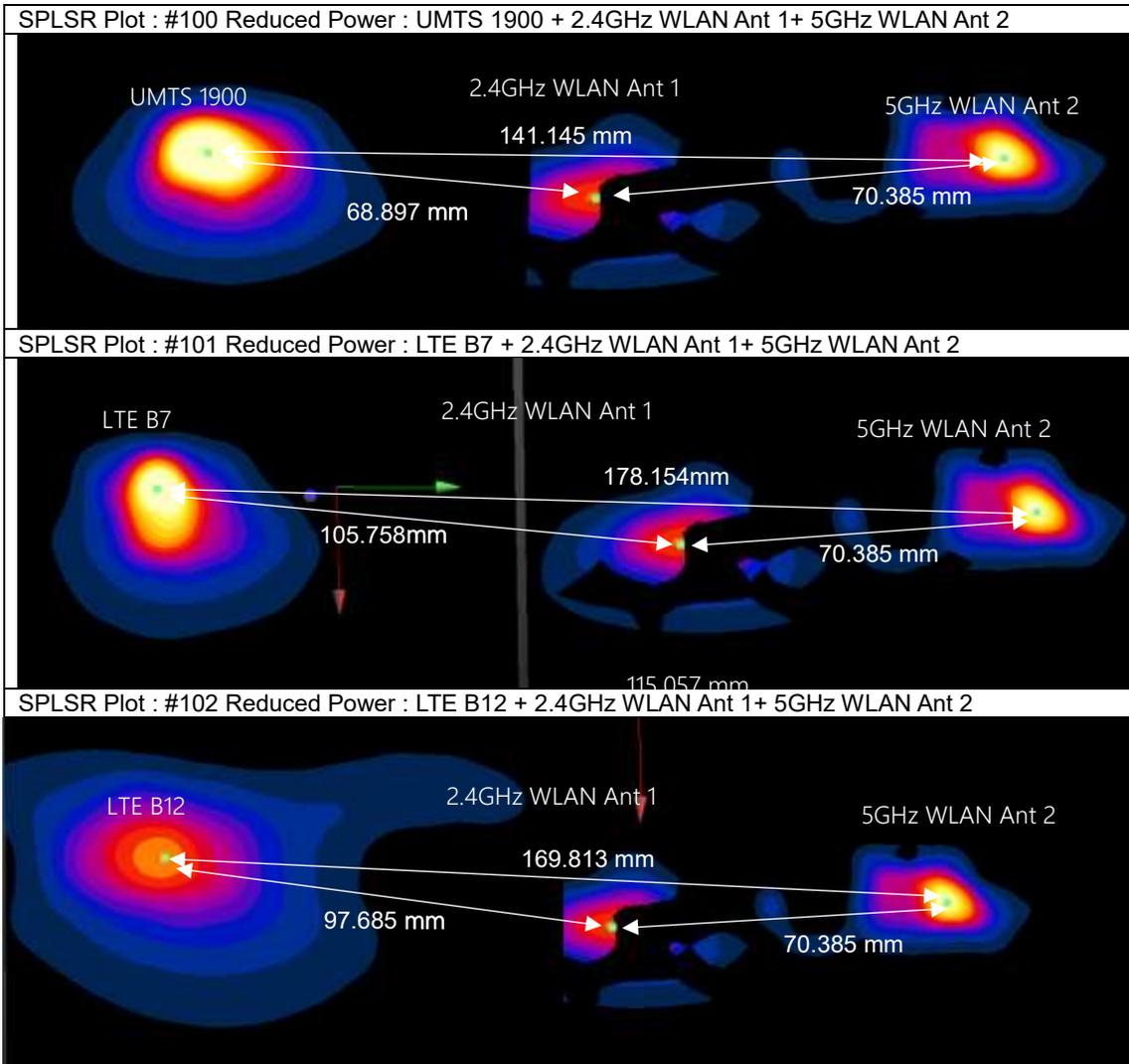


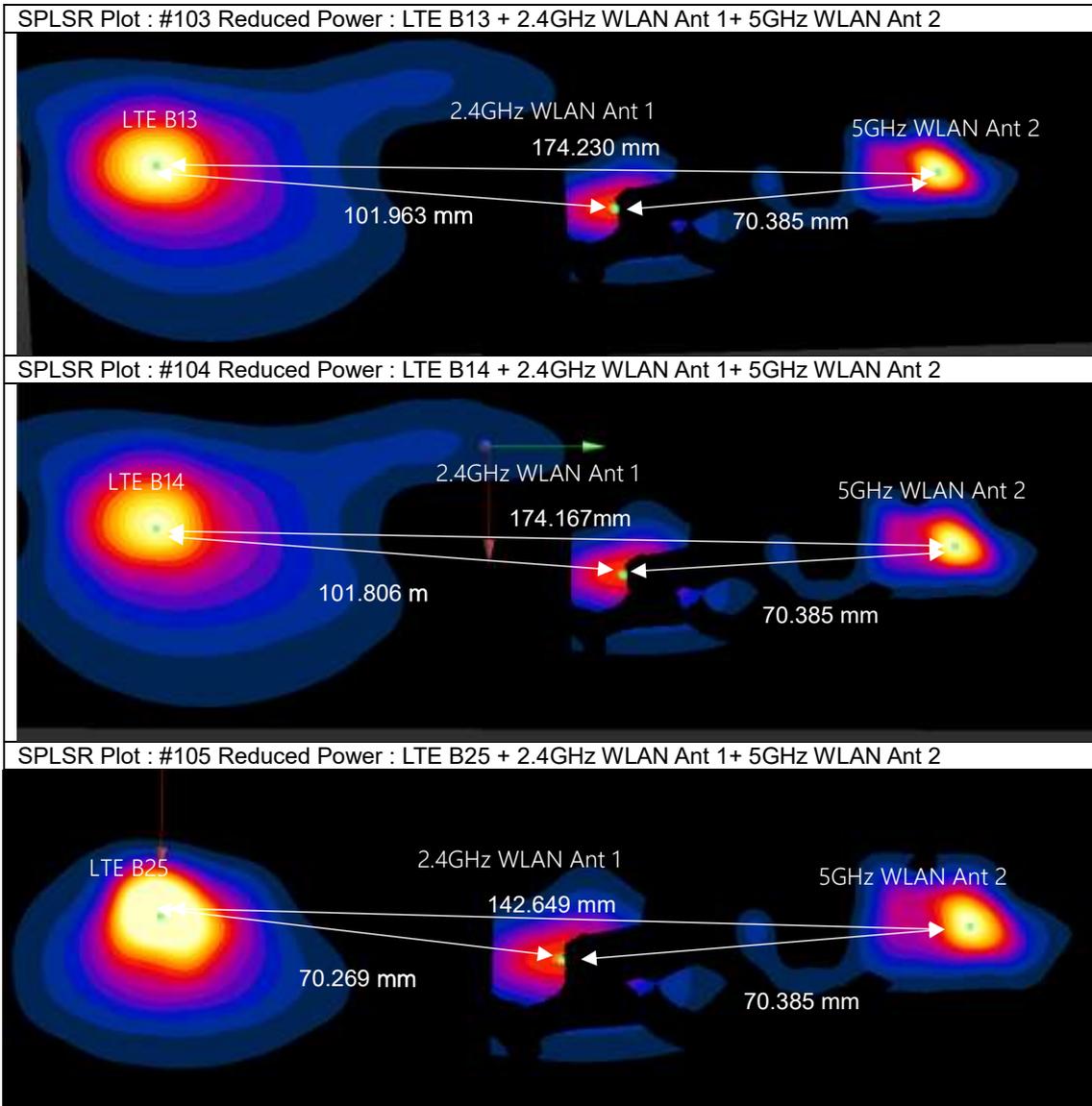


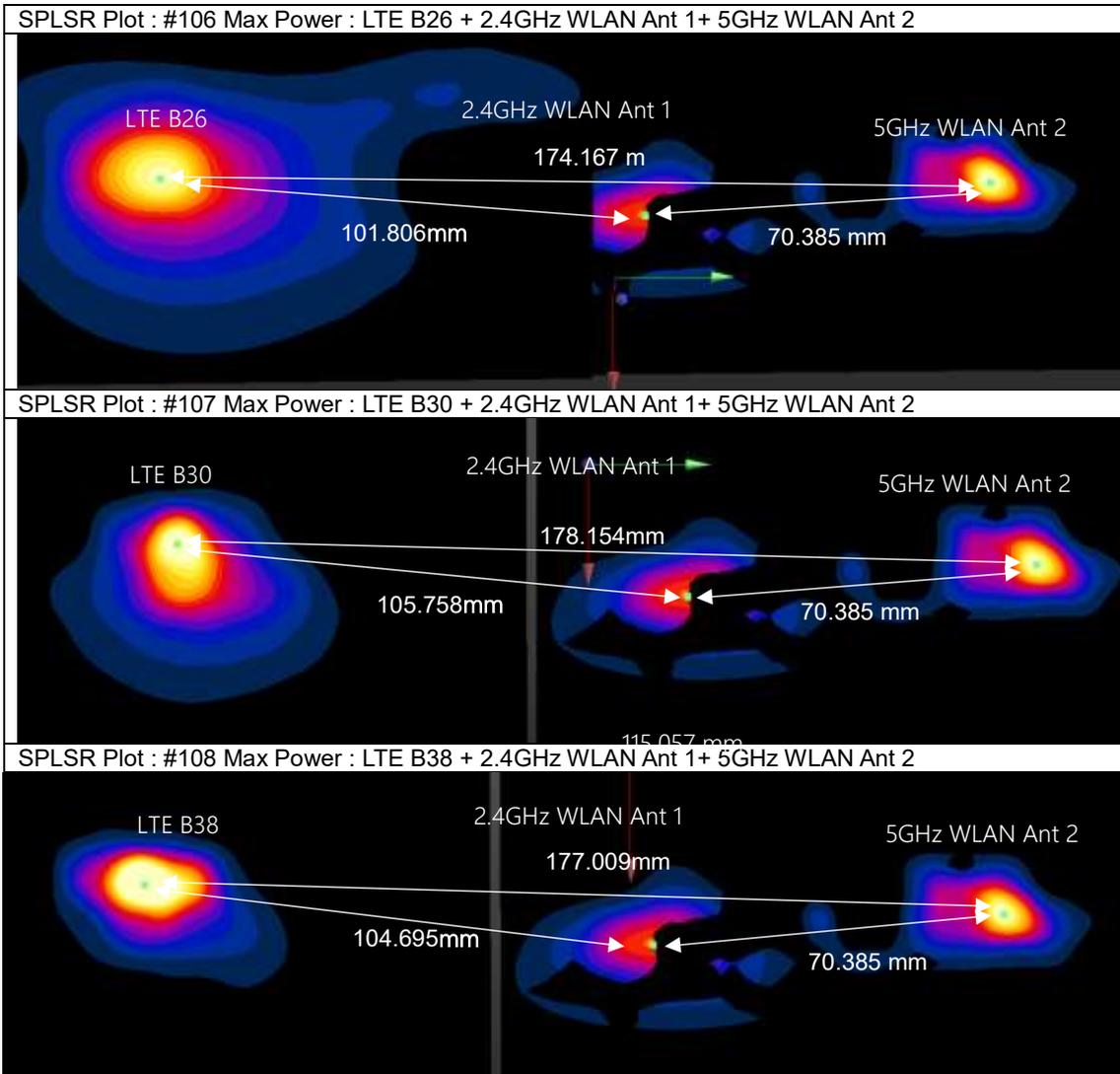


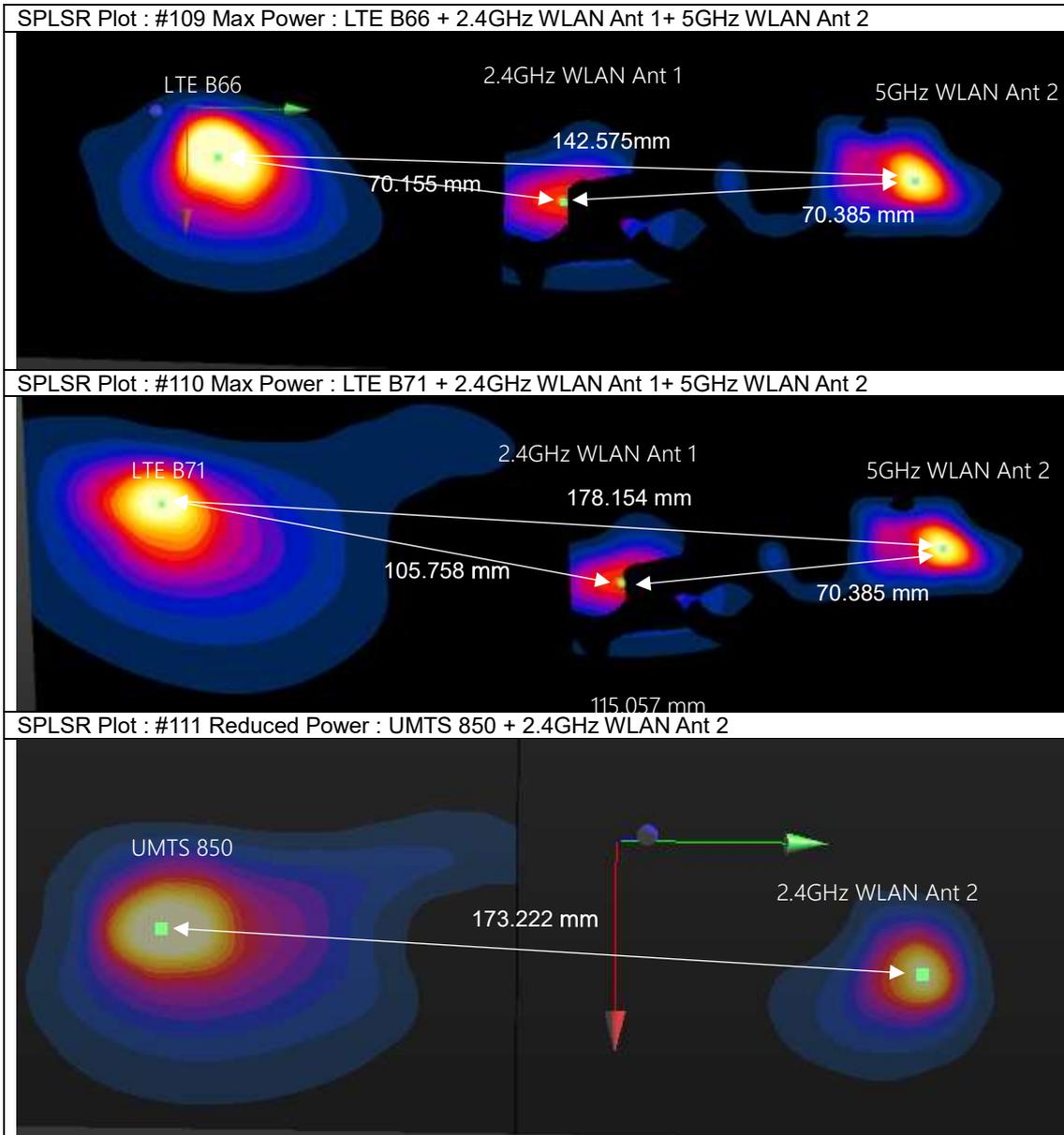


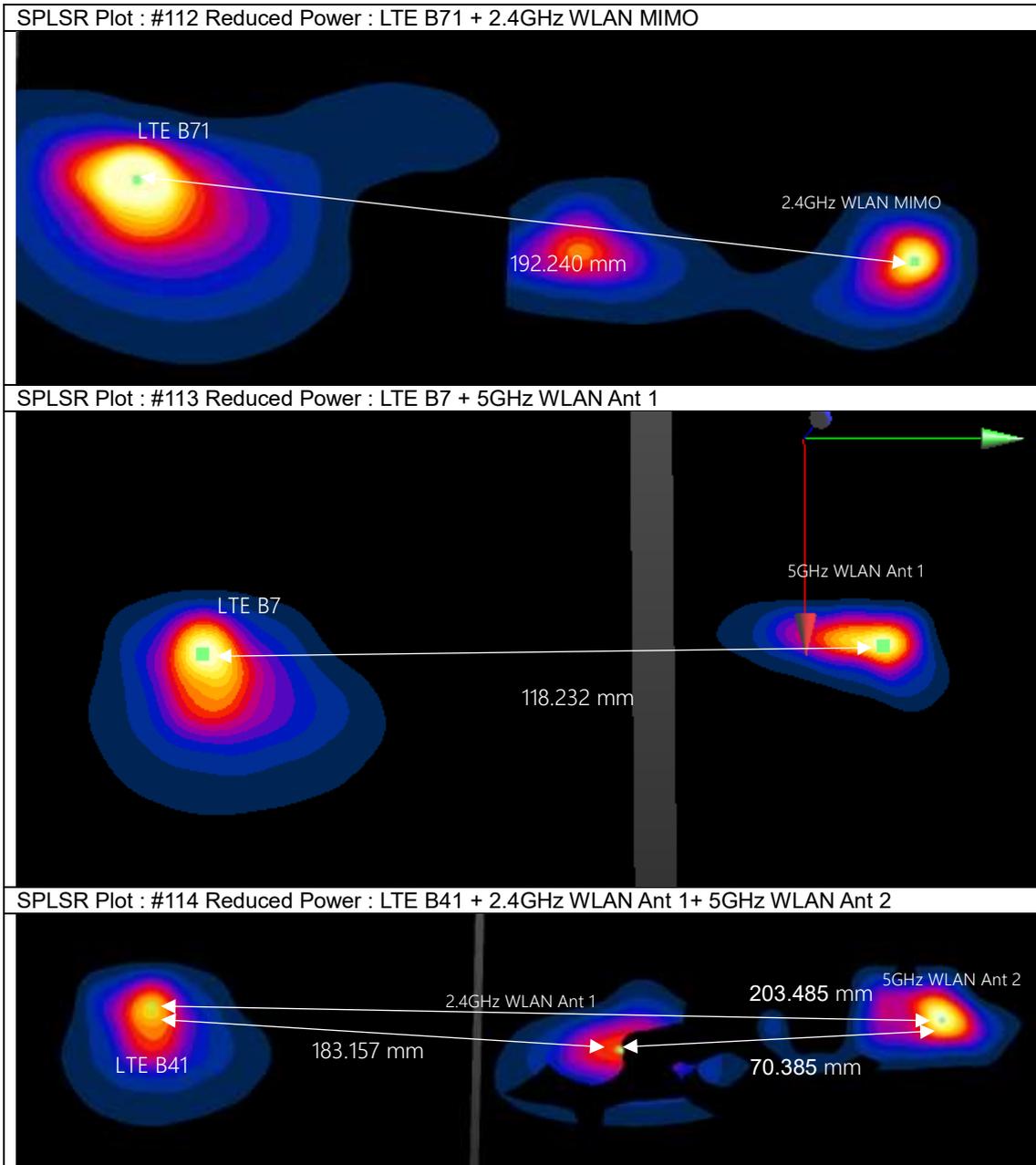












14.5 Simultaneous Transmission Conclusion

The above numerical summed SAR Results are sufficient to determine 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 IEEE1528-2013.

15. SAR Measurement Variability and Uncertainty

In accordance with KDB procedure 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz, SAR additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement variability was assessed using the following procedures for each frequency band:

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg for 1g SAR or < 2.0 W/kg for 10g SAR; steps 2) through 4) do not apply.
- 2) When the original highest measured 1g SAR is ≥ 0.80 W/kg or 10g SAR ≥ 2.0 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg for 1g SAR or ≥ 3.625 W/kg for 10g SAR (~ 10% from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg for 1g SAR or ≥ 3.75 W/kg for 10g SAR and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

SAR measurement variability Results

Frequency		Mode/Band	Configuration	Measured SAR (W/kg)	Repeated SAR (W/kg)	SAR Ratio
Mhz	Channel					
846.6	4233	UMTS 850	Rear (Active)	1.01	1.01	1.00
1 752.6	1513	UMTS 1700	Rear (Active)	1.04	1.02	1.02
782	23230	LTE Band 13	Rear (Active)	0.908	0.905	1.00
1 882.5	26365	LTE Band 25	Rear (Active)	1.09	1.08	1.01
2 310	27710	LTE Band 30	Rear (Active)	0.861	0.818	1.05
2 610	38150	LTE Band 38	Rear (Active)	1.09	1.06	1.03

16. Device Holder Perturbation Verification.

In accordance with published DUT Holder Perturbations in Oct.2016 TCB Workshop. When Highest reported SAR is over 1.2 W/kg, Holder Perturbation Verification is required for each antenna, using the highest configuration among all applicable frequency bands.

Antenna configuration	Frequency		Mode/Band	Configuration	Highest Reported SAR		Deviation (%)
	MHz	Channel			(without Device Holder)	(with Device Holder)	
					(W/kg)	(W/kg)	
Main 2 Ant	1 905	26590	LTE Band 25	Rear (Active) 1 RB Size, 0 RB Offset	1.397	1.384	1.01

17. LTE Band 41 Power Class 2 and Power class 3 Linearity

This Device Supports Power Class 2 and Power Class 3 operations for LTE band 41. The Highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL Configuration 1. Per May 2017 TCB Workshop Notes based on the device behavior, all SAR tests were performed using Power class 3. SAR with power class 2 at the highest power and available duty factor was additionally performed for the power class 2 configuration with the Highest SAR for each exposure condition.

The linearity between the power class 3 and Power class 2 SAR Results and the respective frame averaged powers was calculated to determine the results were linear.

Per May 2017 TCB Workshop, no additional SAR measurements were required since the linearity between power classes as less than 10 % and all reported SAR values were < 1.4 W/kg

LTE Band 41 Body Rear Linearity Data Table (Sensor inactive)		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	25	27
Measured Output Power[dBm]	24.01	26.18
Measured SAR[W/kg]	0.37	0.416
Measured Power[mW]	251.768	414.954
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	159.369	179.675
Gradient	0.00232	0.00232
deviation from expected linearity(%)	0.27 %	

LTE Band 41 Body Rear Linearity Data Table(sensor active)		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	13	13
Measured Output Power[dBm]	12.26	12.97
Measured SAR[W/kg]	0.548	0.424
Measured Power[mW]	16.827	19.815
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	10.651	8.580
Gradient	0.05145	0.04942
deviation from expected linearity(%)		4.11%

18. Measurement Uncertainty

The measured SAR was <1.5 W/Kg for 1g SAR and <3.75 W/Kg For 10g SAR for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE1528-2013 was not required.

19. SAR Test Equipment

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	Triple Modular Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX60	F10/5D1CA1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F13/5R4XF1/C/01	N/A	N/A	N/A
Staubli	TX60 Lspeag	F10/5D1CA1/A/01	N/A	N/A	N/A
Staubli	TX90 XLSpeag	F13/5R4XF1/A/01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-0123	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1338 1332	N/A	N/A	N/A
SPEAG	DAE4	1417	01/25/2019	Annual	01/25/2020
SPEAG	DAE4	1225	11/16/2018	Annual	11/16/2019
SPEAG	DAE4	648	05/23/2019	Annual	05/23/2020
SPEAG	E-Field Probe EX3DV4	3797	11/22/2018	Annual	11/22/2019
SPEAG	E-Field Probe EX3DV4	3967	02/01/2019	Annual	02/01/2020
SPEAG	Dipole D750V3	1014	05/27/2019	Annual	05/27/2020
SPEAG	Dipole D835V2	441	08/23/2019	Annual	08/23/2020
SPEAG	Dipole D1800V2	2d007	11/19/2018	Annual	11/19/2019
SPEAG	Dipole D1900V2	5d032	02/21/2019	Annual	02/21/2020
SPEAG	Dipole D2300V2	1010	08/26/2019	Annual	08/26/2020
SPEAG	Dipole D2450V2	743	01/28/2019	Annual	01/28/2020
SPEAG	Dipole D2600V2	1015	11/20/2018	Annual	11/20/2019
SPEAG	Dipole D5GHzV2	1253	11/22/2018	Annual	11/22/2019
Agilent	Power Meter E4419B	MY41291386	10/11/2018	Annual	10/11/2019
Agilent	Power Meter N1911A	MY45101406	09/06/2018	Annual	09/06/2019
Agilent	Power Meter N1911A	MY45101406	09/10/2019	Annual	09/10/2020
Agilent	Power Sensor 8481A	SG1091286	10/11/2018	Annual	10/11/2019
Agilent	Power Sensor 8481A	MY41090873	10/11/2018	Annual	10/11/2019
Agilent	Power Sensor N1921A	MY55220026	09/06/2018	Annual	09/06/2019
Agilent	Power Sensor N1921A	MY55220026	09/06/2019	Annual	09/06/2020
SPEAG	DAKS 3.5	1031	04/16/2019	Annual	04/16/2020
SPEAG	VNA-R140	0050813	03/11/2019	Annual	03/11/2020
Agilent	WIRELESS COMMUNICATION E5515C	MY48361100	10/02/2018	Annual	10/02/2019

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Agilent	Signal Generator N5182A	MY47070230	05/08/2019	Annual	05/08/2020
Agilent	11636B/Power Divider	58698	02/28/2019	Annual	03/06/2020
HP	11636B/Power Divider	07048	05/16/2019	Annual	05/16/2020
HP	11636B/Power Divider	06999	05/16/2019	Annual	05/16/2020
TESTO	175-H1/Thermometer	40331915309	01/29/2019	Annual	01/29/2020
TESTO	175-H1/Thermometer	40332651310	01/29/2019	Annual	01/29/2020
TESTO	175-H1/Thermometer	40331936309	01/29/2019	Annual	01/29/2020
EMPOWER	RF Power Amplifier	1011	10/11/2018	Annual	10/11/2019
MICRO LAB	LP Filter / LA-15N	10453	10/11/2018	Annual	10/11/2019
MICRO LAB	LP Filter / LA-30N	-	10/11/2018	Annual	10/11/2019
MICRO LAB	LP Filter / LA-60N	32011	10/11/2018	Annual	10/11/2019
Apitech	Attenuator (3dB) 18B-03	1	06/04/2019	Annual	06/04/2020
Agilent	Attenuator (20dB) 33340C	1642	05/08/2019	Annual	05/08/2020
Agilent	Directional Bridge	3140A03878	06/12/2019	Annual	06/12/2020
Agilent	MXA Signal Analyzer N9020A	MY50510407	10/31/2018	Annual	10/31/2019
HP	Dual Directional Coupler	16072	10/11/2018	Annual	10/11/2019
Anritsu	Radio Communication Tester MT8820C	6201074225	03/05/2019	Annual	03/05/2020
Anritsu	Radio Communication Tester MT8821C	6201502997	08/09/2019	Annual	08/09/2020
R&S	Bluetooth CBT	100272	03/04/2019	Annual	03/04/2020

1. The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Verification measurement is performed by HCT Lab. before each test. The brain/body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity (dielectric constant) of the brain/body-equivalent material.

20. Conclusion

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the ANSI/ IEEE C95.1 - 1992.

These measurements were taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

21. References

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Attachment 1. – SAR Test Plots

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.6 °C
Ambient Temperature: 20.6 °C
Test Date: 09/05/2019
Plot No.: 1

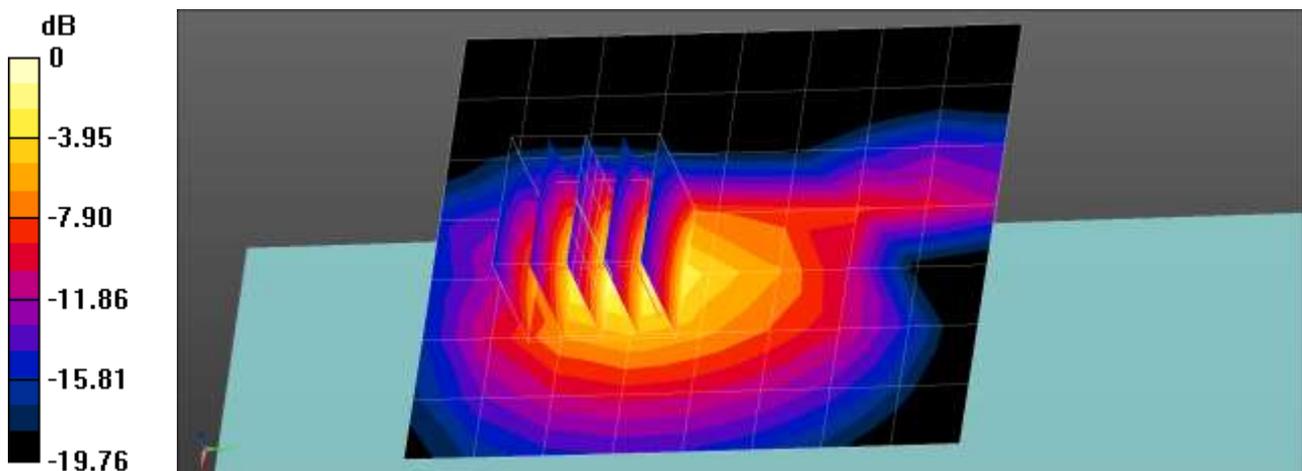
Communication System: UID 0, WCDMA850 (0); Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.969$ S/m; $\epsilon_r = 53.18$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(9.4, 9.4, 9.4); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

WCDMA5 Body Rear 4233ch Backoff 0mm Repeat/Area Scan (8x9x1): Measurement grid:
dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.39 W/kg

WCDMA5 Body Rear 4233ch Backoff 0mm Repeat/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.26 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 2.56 W/kg
SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.492 W/kg
Maximum value of SAR (measured) = 1.67 W/kg



Test Laboratory: HCT CO., LTD
 EUT Type: Note PC
 Liquid Temperature: 21.1 °C
 Ambient Temperature: 21.2 °C
 Test Date: 09/10/2019
 Plot No.: 2

Communication System: UID 0, WCDMA1700 (0); Frequency: 1752.6 MHz; Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 1752.6$ MHz; $\sigma = 1.438$ S/m; $\epsilon_r = 54.898$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY Configuration:

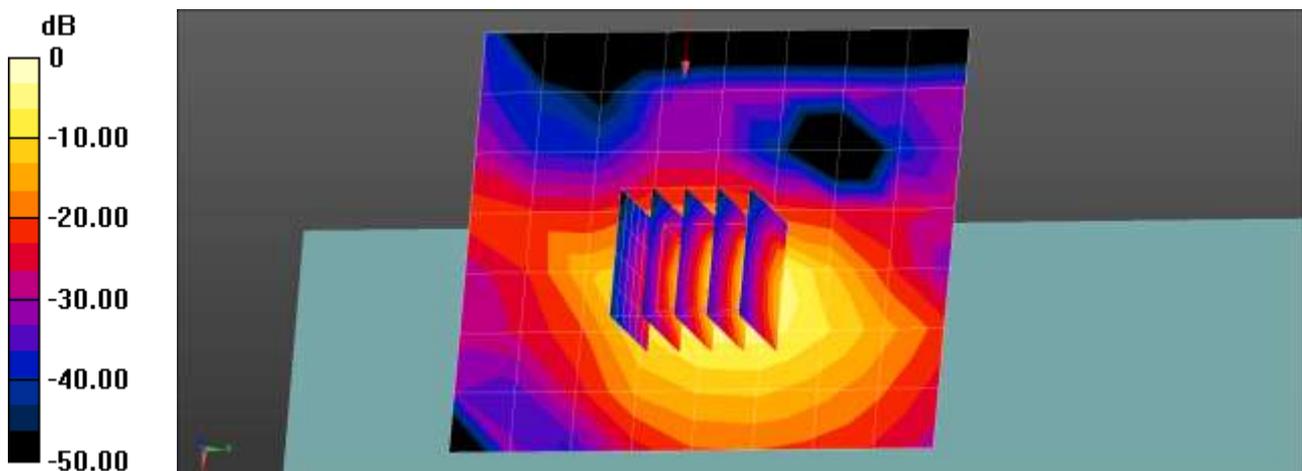
- Probe: EX3DV4 - SN3967; ConvF(7.91, 7.91, 7.91); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

WCDMA4 Body Rear 1513ch Backoff 0mm/Area Scan (8x9x1): Measurement grid:

dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 1.49 W/kg

WCDMA4 Body Rear 1513ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm
 Reference Value = 1.855 V/m; Power Drift = 0.17 dB
 Peak SAR (extrapolated) = 2.69 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.436 W/kg
 Maximum value of SAR (measured) = 1.76 W/kg



0 dB = 1.49 W/kg = 1.72 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.3 °C
Test Date: 09/11/2019
Plot No.: 3

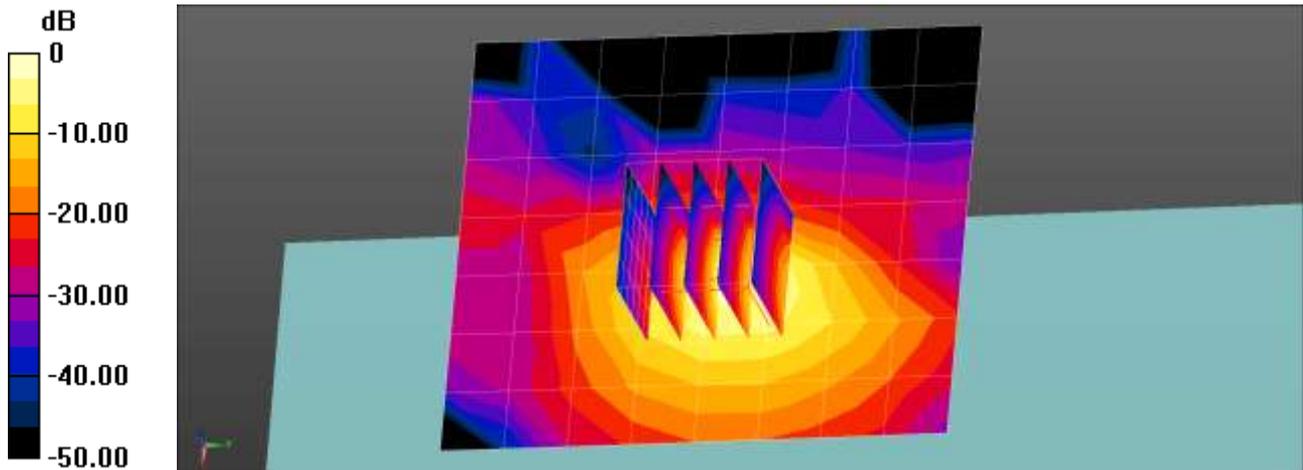
Communication System: UID 0, WCDMA Band 2 (0); Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 53.618$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.64, 7.64, 7.64); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

WCDMA2 Body Rear 9262ch Backoff 0mm/Area Scan (8x9x1): Measurement grid:
dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.57 W/kg

WCDMA2 Body Rear 9262ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid:
dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.579 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.74 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.434 W/kg
Maximum value of SAR (measured) = 2.01 W/kg



0 dB = 1.57 W/kg = 1.97 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.3 °C
Test Date: 09/11/2019
Plot No.: 4

Communication System: UID 0, WCDMA Band 2 (0); Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.565$ S/m; $\epsilon_r = 53.59$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

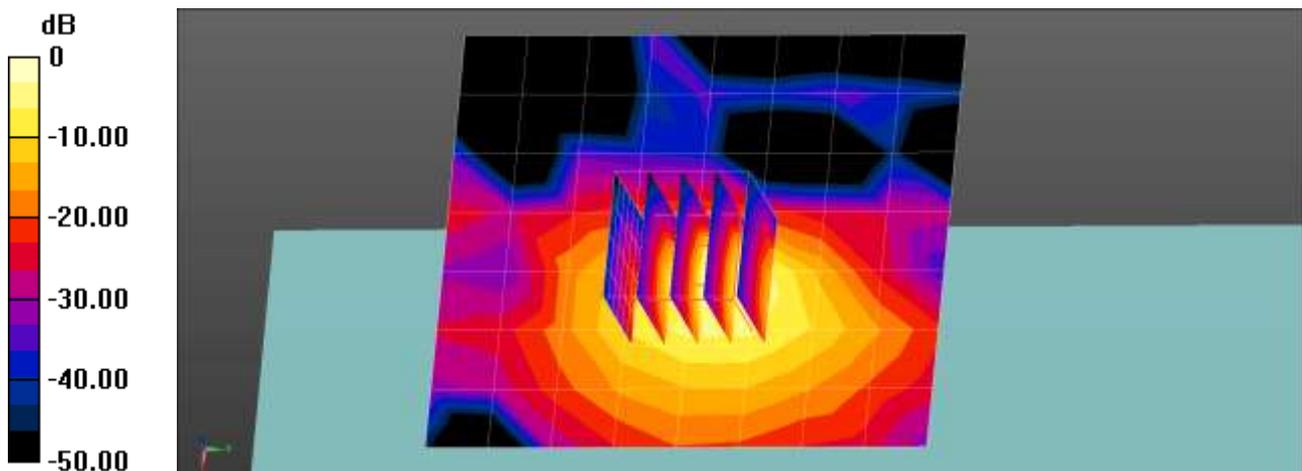
- Probe: EX3DV4 - SN3967; ConvF(7.64, 7.64, 7.64); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

WCDMA2 Body Rear 9538ch Backoff 0mm/Area Scan (8x9x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm
Maximum value of SAR (measured) = 1.63 W/kg

WCDMA2 Body Rear 9538ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

$dx=8$ mm, $dy=8$ mm, $dz=5$ mm
Reference Value = 1.110 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 2.77 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.423 W/kg
Maximum value of SAR (measured) = 2.02 W/kg



0 dB = 1.63 W/kg = 2.12 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.0 °C
Ambient Temperature: 21.0 °C
Test Date: 09/05/2019
Plot No.: 5

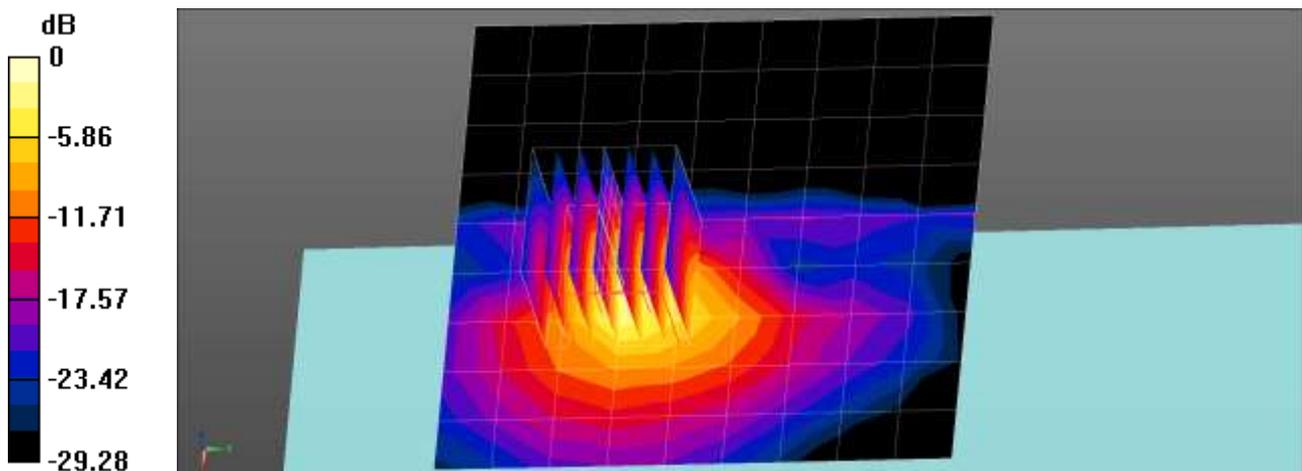
Communication System: UID 0, LTE Band 7 (0); Frequency: 2535 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2535$ MHz; $\sigma = 2.04$ S/m; $\epsilon_r = 53.442$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.05, 7.05, 7.05); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 7 Body Rear QPSK 20MHz 50RB 25offset 21100ch Backoff 0mm/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.35 W/kg

LTE Band 7 Body Rear QPSK 20MHz 50RB 25offset 21100ch Backoff 0mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.511 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 3.02 W/kg
SAR(1 g) = 0.934 W/kg; SAR(10 g) = 0.336 W/kg
Maximum value of SAR (measured) = 2.06 W/kg



0 dB = 2.06 W/kg = 3.14 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.4 °C
Test Date: 09/04/2019
Plot No.: 6

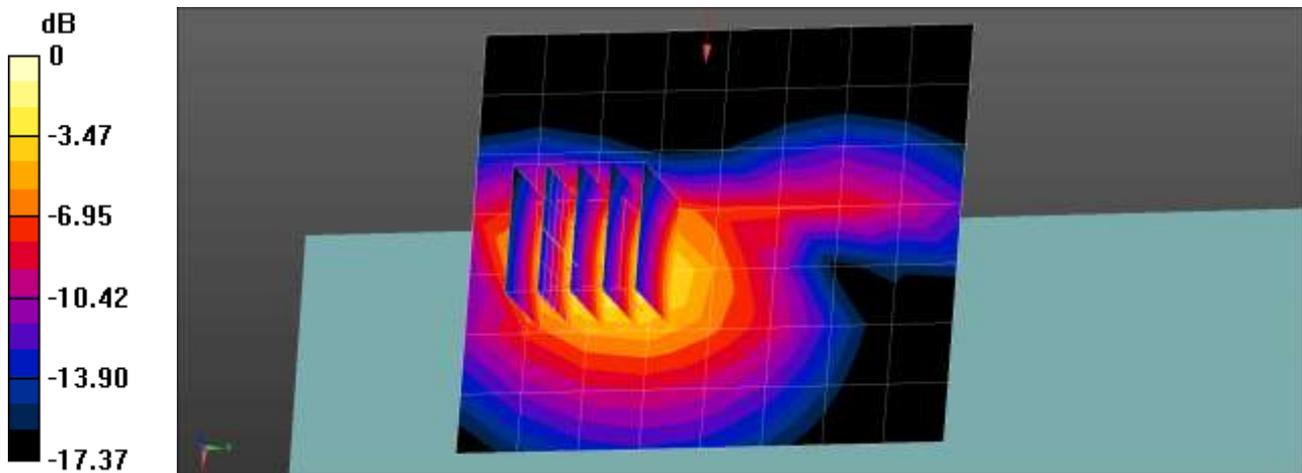
Communication System: UID 0, LTE 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.926$ S/m; $\epsilon_r = 54.893$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(9.69, 9.69, 9.69); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

LTE Band12 Body Rear QPSK 10MHz 25RB 12offset 23095ch Backoff 0mm/Area Scan (8x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.889 W/kg

LTE Band12 Body Rear QPSK 10MHz 25RB 12offset 23095ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.26 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 0.658 W/kg; SAR(10 g) = 0.332 W/kg
Maximum value of SAR (measured) = 1.08 W/kg



0 dB = 1.08 W/kg = 0.33 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.4 °C
Test Date: 09/04/2019
Plot No.: 7

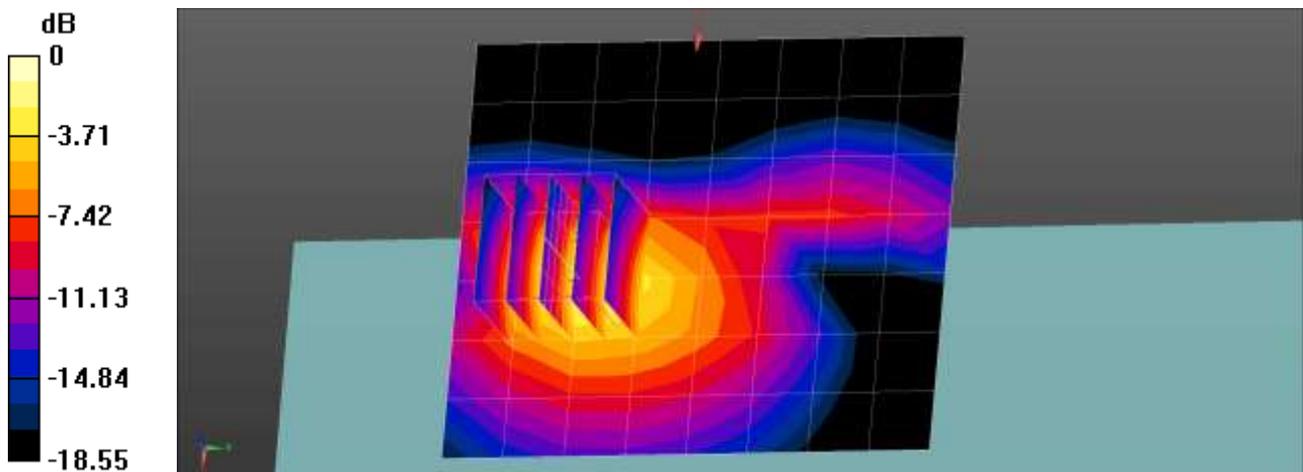
Communication System: UID 0, LTE 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 782 \text{ MHz}$; $\sigma = 1.009 \text{ S/m}$; $\epsilon_r = 54.06$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(9.69, 9.69, 9.69); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

LTE Band13 Body Rear QPSK 10MHz 25RB 12offset 23230ch Backoff 0mm/Area Scan (8x9x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 1.43 W/kg

LTE Band13 Body Rear QPSK 10MHz 25RB 12offset 23230ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 12.30 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 2.15 W/kg
SAR(1 g) = 0.908 W/kg; SAR(10 g) = 0.457 W/kg
Maximum value of SAR (measured) = 1.44 W/kg



Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.4 °C
Test Date: 09/04/2019
Plot No.: 8

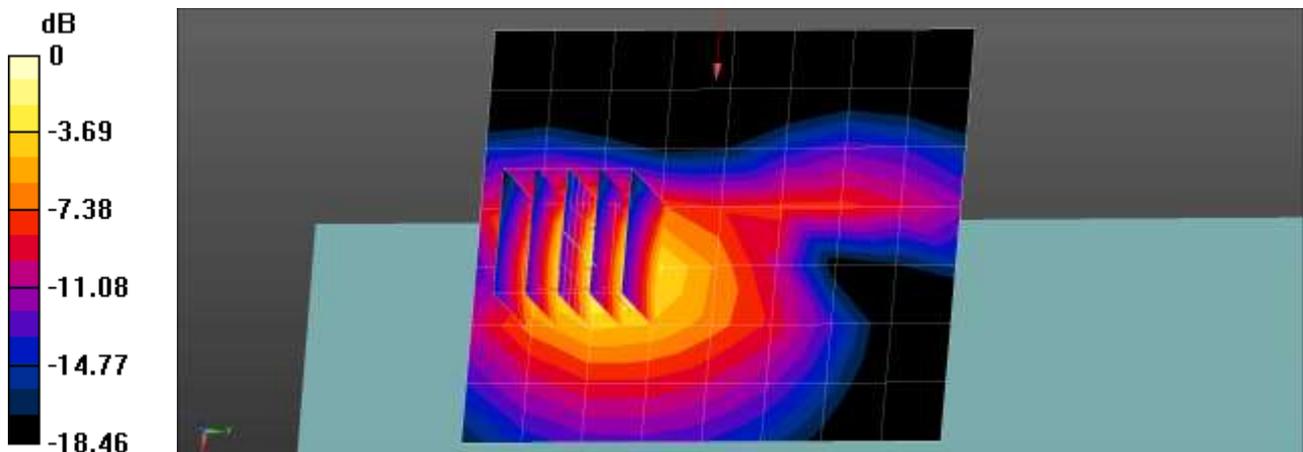
Communication System: UID 0, LTE 14 (0); Frequency: 793 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 793 \text{ MHz}$; $\sigma = 1.018 \text{ S/m}$; $\epsilon_r = 53.928$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(9.69, 9.69, 9.69); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

LTE Band14 Body Rear QPSK 10MHz 25RB 0offset 23330ch Backoff 0mm/Area Scan (8x9x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 1.42 W/kg

LTE Band14 Body Rear QPSK 10MHz 25RB 0offset 23330ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 12.33 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 2.11 W/kg
SAR(1 g) = 0.903 W/kg; SAR(10 g) = 0.456 W/kg
Maximum value of SAR (measured) = 1.43 W/kg



0 dB = 1.43 W/kg = 1.55 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.4 °C
Test Date: 09/04/2019
Plot No.: 9

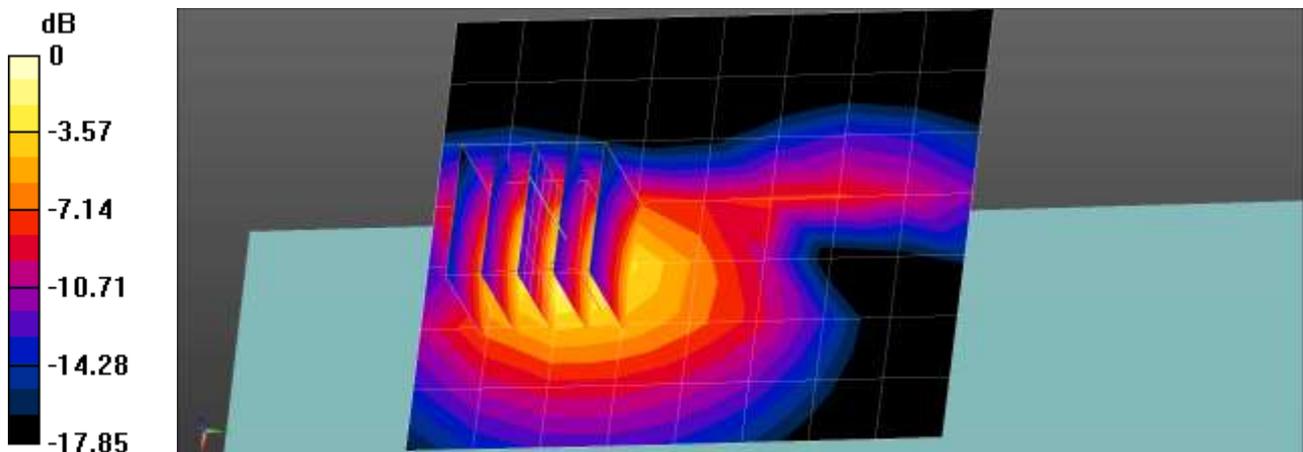
Communication System: UID 0, LTE 14 (0); Frequency: 793 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 793 \text{ MHz}$; $\sigma = 1.018 \text{ S/m}$; $\epsilon_r = 53.928$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(9.69, 9.69, 9.69); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

LTE Band14 Body Rear QPSK 10MHz 50RB 0offset 23330ch Backoff 0mm/Area Scan (8x9x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 1.37 W/kg

LTE Band14 Body Rear QPSK 10MHz 50RB 0offset 23330ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 12.17 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 2.13 W/kg
SAR(1 g) = 0.891 W/kg; SAR(10 g) = 0.446 W/kg
Maximum value of SAR (measured) = 1.36 W/kg



0 dB = 1.36 W/kg = 1.34 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.3 °C
Test Date: 09/11/2019
Plot No.: 10

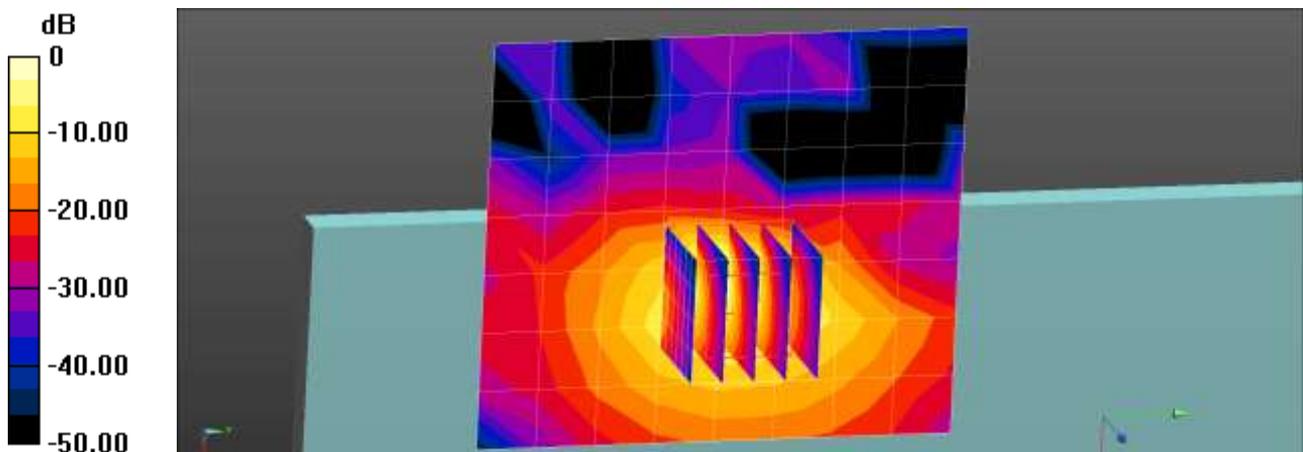
Communication System: UID 0, LTE Band 25 (0); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1905$ MHz; $\sigma = 1.562$ S/m; $\epsilon_r = 53.58$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.64, 7.64, 7.64); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

LTE Band25 Body Rear QPSK 20MHz 1RB 0offset 26590ch Backoff 0mm/Area Scan (8x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.78 W/kg

LTE Band25 Body Rear QPSK 20MHz 1RB 0offset 26590ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.851 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 2.73 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.434 W/kg
Maximum value of SAR (measured) = 2.12 W/kg



0 dB = 1.78 W/kg = 2.51 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.3 °C
Test Date: 09/11/2019
Plot No.: 11

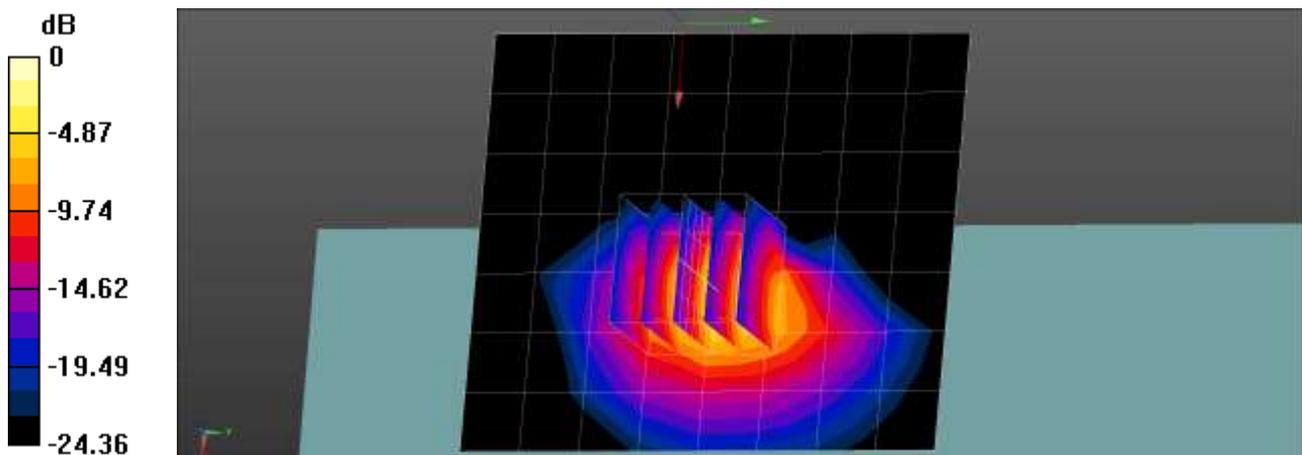
Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1882.5$ MHz; $\sigma = 1.546$ S/m; $\epsilon_r = 53.557$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.64, 7.64, 7.64); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

LTE Band25 Body Rear QPSK 20MHz 50RB 25offset 26365ch Backoff 0mm/Area Scan (8x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.87 W/kg

LTE Band25 Body Rear QPSK 20MHz 50RB 25offset 26365ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.938 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 2.78 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.446 W/kg
Maximum value of SAR (measured) = 2.15 W/kg



0 dB = 2.15 W/kg = 3.32 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.6 °C
Ambient Temperature: 20.6 °C
Test Date: 09/05/2019
Plot No.: 12

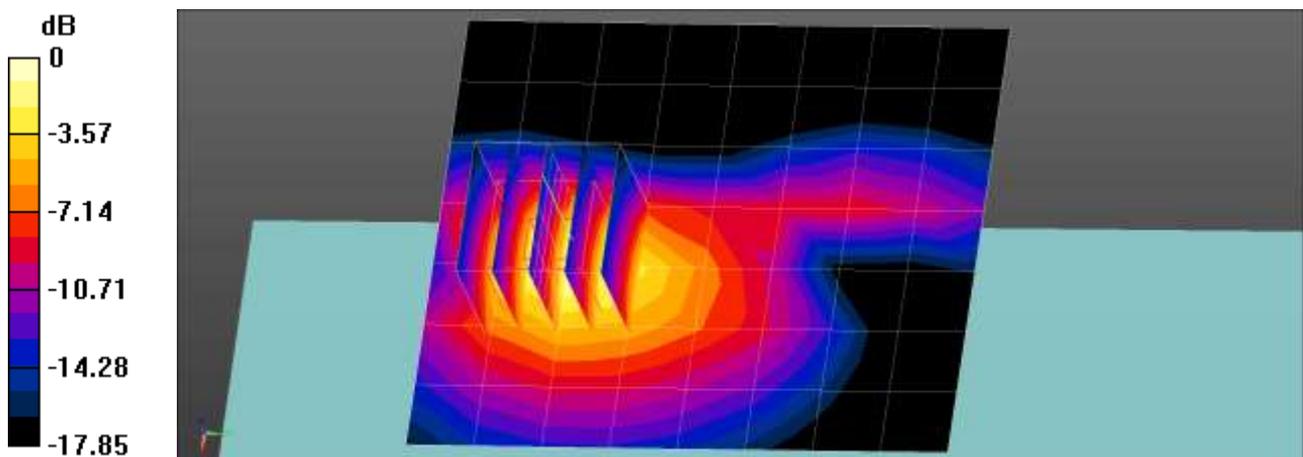
Communication System: UID 0, LTE 26 (0); Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.958$ S/m; $\epsilon_r = 53.413$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(9.4, 9.4, 9.4); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

LTE Band26 Body Rear QPSK 15MHz 36RB 18offset 26865ch Backoff 0mm/Area Scan (8x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.36 W/kg

LTE Band26 Body Rear QPSK 15MHz 36RB 18offset 26865ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.10 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 2.25 W/kg
SAR(1 g) = 0.900 W/kg; SAR(10 g) = 0.445 W/kg
Maximum value of SAR (measured) = 1.38 W/kg



0 dB = 1.38 W/kg = 1.40 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.4 °C
Test Date: 09/06/2019
Plot No.: 13

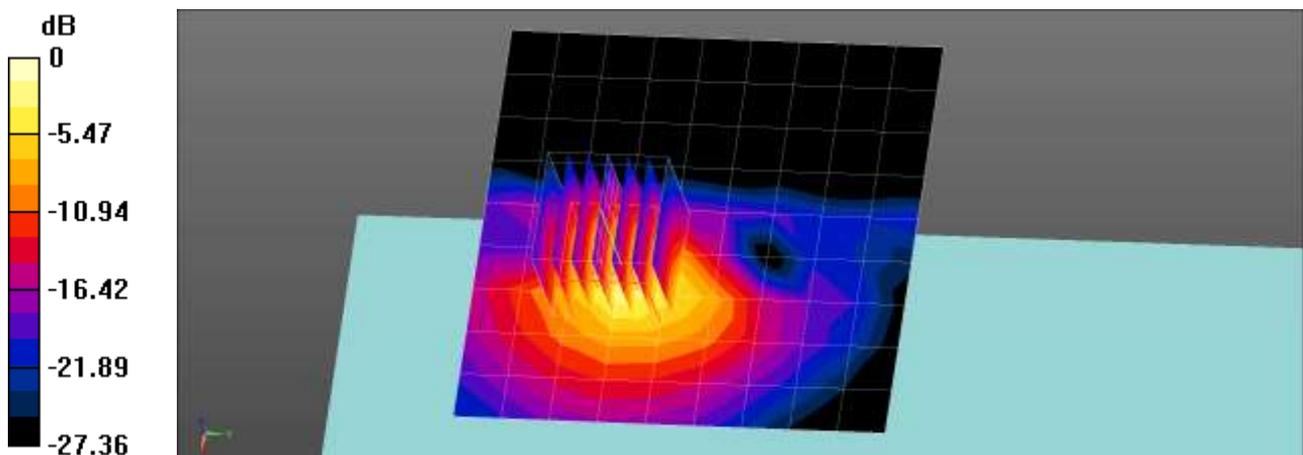
Communication System: UID 0, LTE Band30 (0); Frequency: 2310 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 2310$ MHz; $\sigma = 1.773$ S/m; $\epsilon_r = 54.139$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.26, 7.26, 7.26); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 30 Body Rear QPSK 10MHz 25RB 12offset 27710ch Backoff 0mm/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.22 W/kg

LTE Band 30 Body Rear QPSK 10MHz 25RB 12offset 27710ch Backoff 0mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.691 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 2.46 W/kg
SAR(1 g) = 0.861 W/kg; SAR(10 g) = 0.345 W/kg
Maximum value of SAR (measured) = 1.80 W/kg



0 dB = 1.80 W/kg = 2.55 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.4 °C
Test Date: 09/06/2019
Plot No.: 14

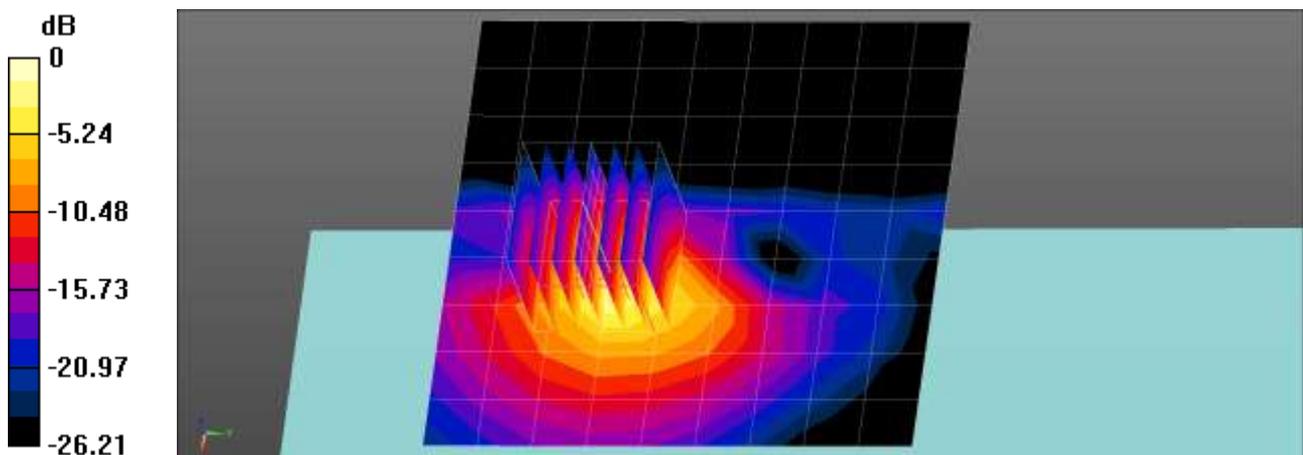
Communication System: UID 0, LTE Band30 (0); Frequency: 2310 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2310$ MHz; $\sigma = 1.773$ S/m; $\epsilon_r = 54.139$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.26, 7.26, 7.26); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 30 Body Rear QPSK 10MHz 50RB 0offset 27710ch Backoff 0mm/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.22 W/kg

LTE Band 30 Body Rear QPSK 10MHz 50RB 0offset 27710ch Backoff 0mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.854 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 2.48 W/kg
SAR(1 g) = 0.852 W/kg; SAR(10 g) = 0.341 W/kg
Maximum value of SAR (measured) = 1.82 W/kg



0 dB = 1.82 W/kg = 2.60 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.5 °C
Ambient Temperature: 20.5 °C
Test Date: 09/25/2019
Plot No.: 15

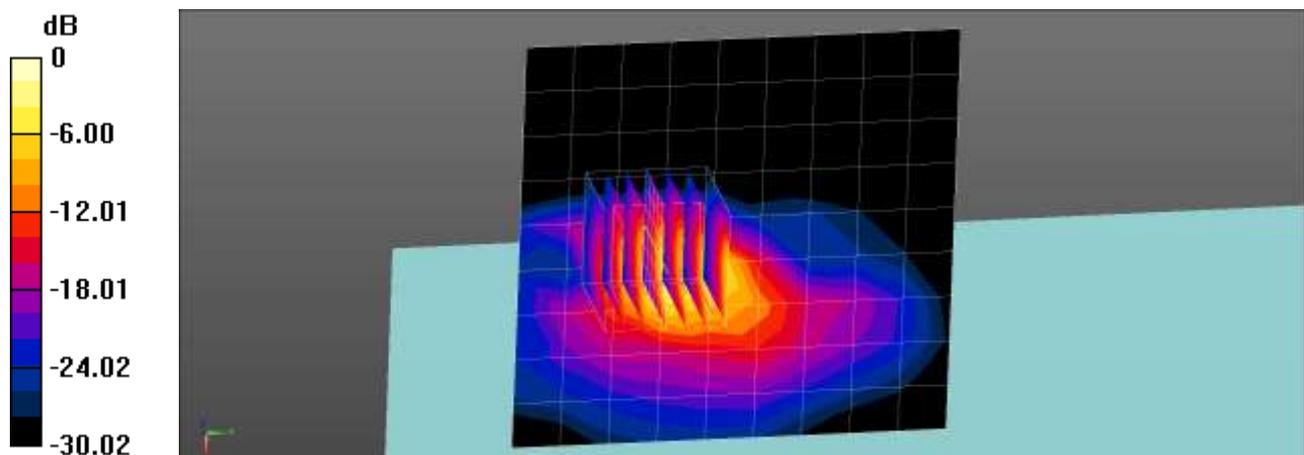
Communication System: UID 0, LTE Band 38; Frequency: 2595 MHz; Duty Cycle: 1:1.58016
Medium parameters used (interpolated): $f = 2595$ MHz; $\sigma = 2.111$ S/m; $\epsilon_r = 53.25$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.05, 7.05, 7.05); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 38 Body Rear QPSK 20MHz 1RB 0offset 38000ch Backoff 0mm/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.89 W/kg

LTE Band 38 Body Rear QPSK 20MHz 1RB 0offset 38000ch Backoff 0mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.011 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 3.07 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.344 W/kg
Maximum value of SAR (measured) = 2.27 W/kg



0 dB = 2.27 W/kg = 3.56 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.5 °C
Ambient Temperature: 20.5 °C
Test Date: 09/25/2019
Plot No.: 16

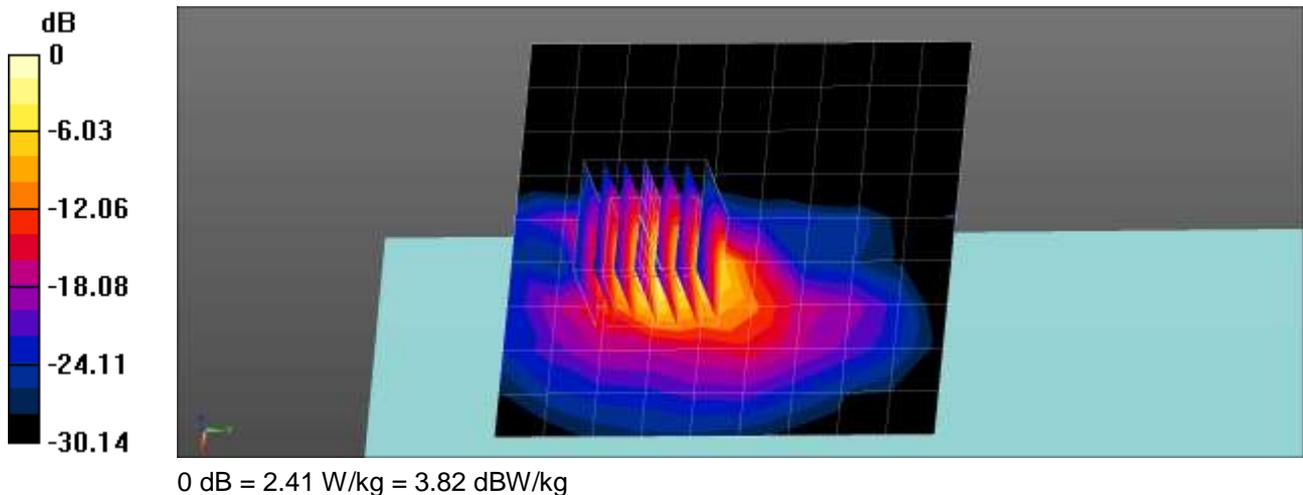
Communication System: UID 0, LTE Band 38; Frequency: 2610 MHz; Duty Cycle: 1:1.58016
Medium parameters used: $f = 2610$ MHz; $\sigma = 2.132$ S/m; $\epsilon_r = 53.187$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.05, 7.05, 7.05); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 38 Body Rear QPSK 20MHz 50RB 0offset 38150ch Backoff 0mm/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.99 W/kg

LTE Band 38 Body Rear QPSK 20MHz 50RB 0offset 38150ch Backoff 0mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.428 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.26 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.362 W/kg
Maximum value of SAR (measured) = 2.41 W/kg



Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.4 °C
Test Date: 09/06/2019
Plot No.: 17

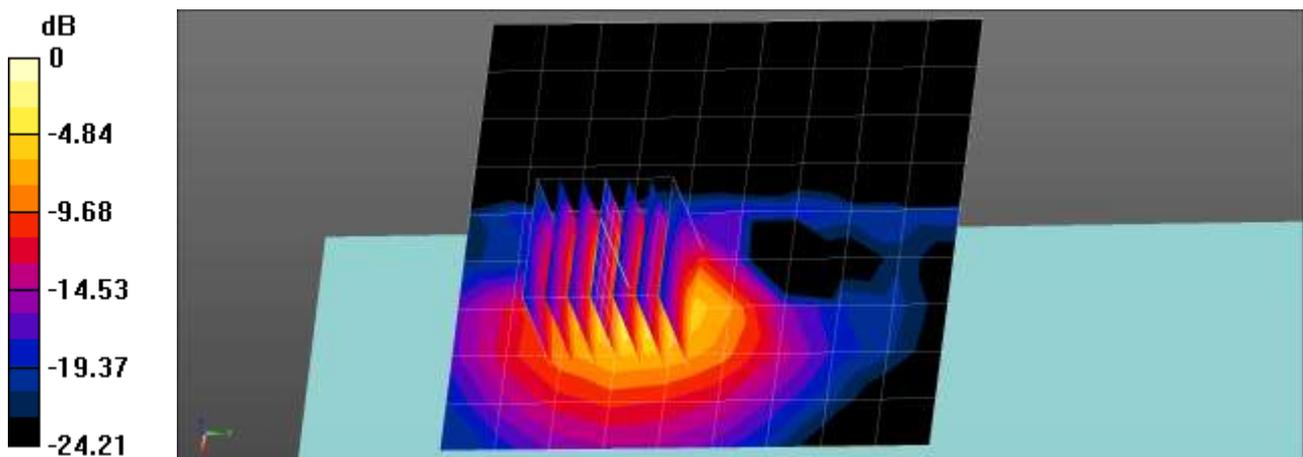
Communication System: UID 0, LTE Band40 (0); Frequency: 2310 MHz; Duty Cycle: 1:1.58016
Medium parameters used: $f = 2310$ MHz; $\sigma = 1.773$ S/m; $\epsilon_r = 54.139$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.26, 7.26, 7.26); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 40 Body Rear QPSK 10MHz 1RB 24offset 38750ch Backoff 0mm/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.462 W/kg

LTE Band 40 Body Rear QPSK 10MHz 1RB 24offset 38750ch Backoff 0mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.996 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.815 W/kg
SAR(1 g) = 0.295 W/kg; SAR(10 g) = 0.122 W/kg
Maximum value of SAR (measured) = 0.594 W/kg



0 dB = 0.594 W/kg = -2.26 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.4 °C
Test Date: 09/06/2019
Plot No.: 18

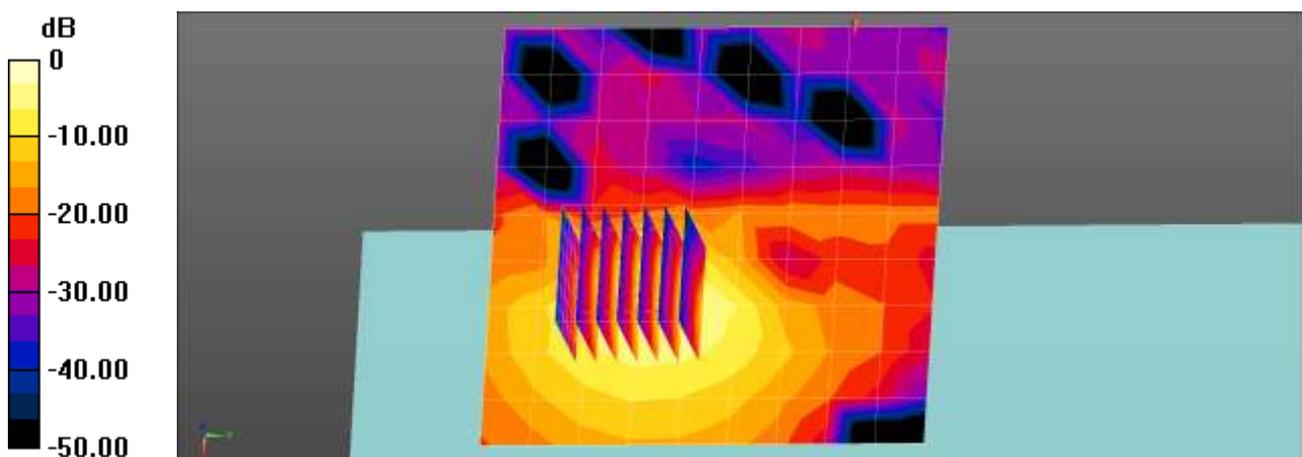
Communication System: UID 0, LTE Band40 (0); Frequency: 2310 MHz; Duty Cycle: 1:1.58016
Medium parameters used: $f = 2310$ MHz; $\sigma = 1.773$ S/m; $\epsilon_r = 54.139$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.26, 7.26, 7.26); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 40 Body Rear QPSK 10MHz 25RB 0offset 38750ch Backoff 0mm/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.377 W/kg

LTE Band 40 Body Rear QPSK 10MHz 25RB 0offset 38750ch Backoff 0mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.819 V/m; Power Drift = -0.38 dB
Peak SAR (extrapolated) = 0.665 W/kg
SAR(1 g) = 0.244 W/kg; SAR(10 g) = 0.101 W/kg
Maximum value of SAR (measured) = 0.485 W/kg



0 dB = 0.377 W/kg = -4.24 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.4 °C
Test Date: 09/06/2019
Plot No.: 19

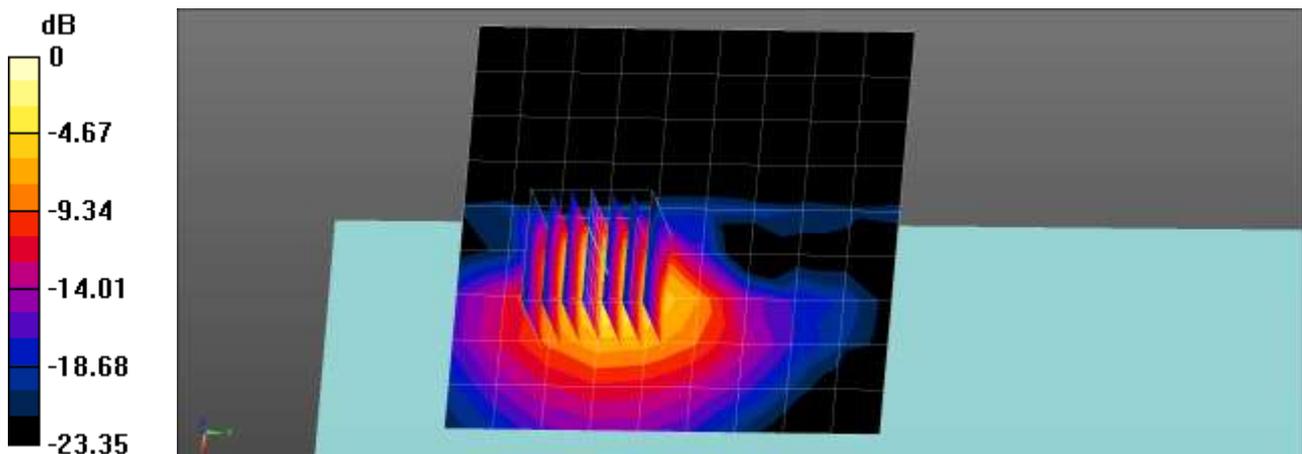
Communication System: UID 0, LTE Band40 (0); Frequency: 2355 MHz;Duty Cycle: 1:1.58016
Medium parameters used (interpolated): $f = 2355$ MHz; $\sigma = 1.839$ S/m; $\epsilon_r = 53.952$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.26, 7.26, 7.26); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 40 Body Rear QPSK 10MHz 1RB 24offset 39200ch Backoff 0mm/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.488 W/kg

LTE Band 40 Body Rear QPSK 10MHz 1RB 24offset 39200ch Backoff 0mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.878 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.920 W/kg
SAR(1 g) = 0.321 W/kg; SAR(10 g) = 0.129 W/kg
Maximum value of SAR (measured) = 0.641 W/kg



0 dB = 0.641 W/kg = -1.93 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 23.5 °C
Ambient Temperature: 23.6 °C
Test Date: 09/26/2019
Plot No.: 20

Communication System: UID 0, LTE Band 41 (0); Frequency: 2593 MHz; Duty Cycle: 1:1.58016
Medium parameters used (interpolated): $f = 2593$ MHz; $\sigma = 2.106$ S/m; $\epsilon_r = 53.224$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

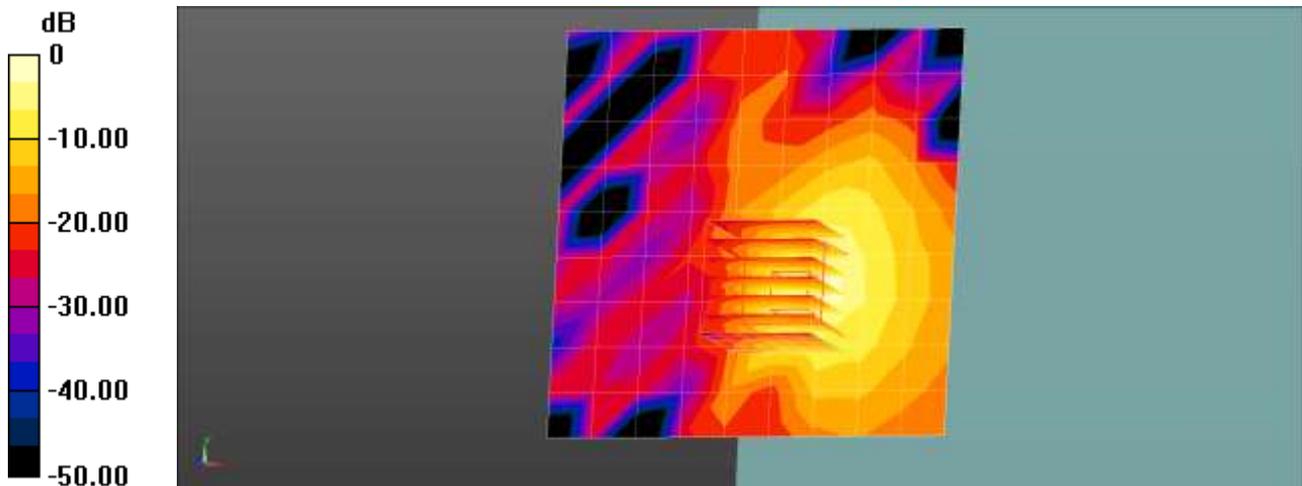
- Probe: EX3DV4 - SN3797; ConvF(7.05, 7.05, 7.05); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

ULCA PCC: 2593MHz 40620ch /SCC: 2573.2MHz 40422ch

LTE Band 41 Body Rear QPSK 20MHz 1RB 0offset 40620ch Backoff 0mm ULCA/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.613 W/kg

LTE Band 41 Body Rear QPSK 20MHz 50RB 0offset 40620ch Backoff 0mm ULCA/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.829 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.489 W/kg; SAR(10 g) = 0.175 W/kg

Maximum value of SAR (measured) = 1.11 W/kg



0 dB = 0.613 W/kg = -2.12 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.1 °C
Ambient Temperature: 21.2 °C
Test Date: 09/10/2019
Plot No.: 21

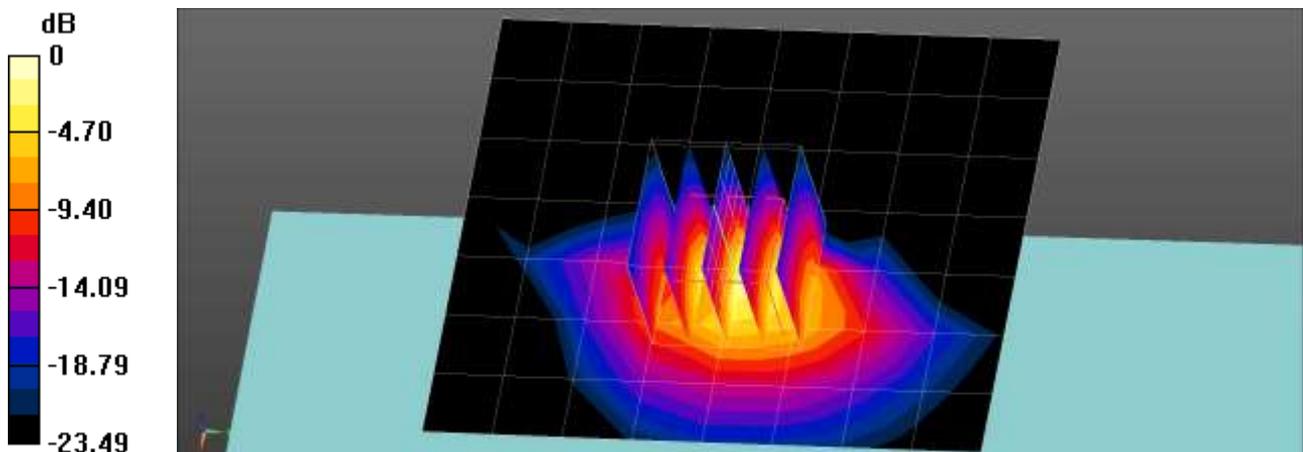
Communication System: UID 0, LTE Band 66 (0); Frequency: 1770 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1770$ MHz; $\sigma = 1.458$ S/m; $\epsilon_r = 54.794$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.91, 7.91, 7.91); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

LTE Band66 Body Rear QPSK 20MHz 50RB 0offset 132572ch Backoff 0mm/Area Scan (8x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.66 W/kg

LTE Band66 Body Rear QPSK 20MHz 50RB 0offset 132572ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.320 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 2.49 W/kg
SAR(1 g) = 1 W/kg; SAR(10 g) = 0.427 W/kg
Maximum value of SAR (measured) = 1.94 W/kg



Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.4 °C
Test Date: 09/06/2019
Plot No.: 22

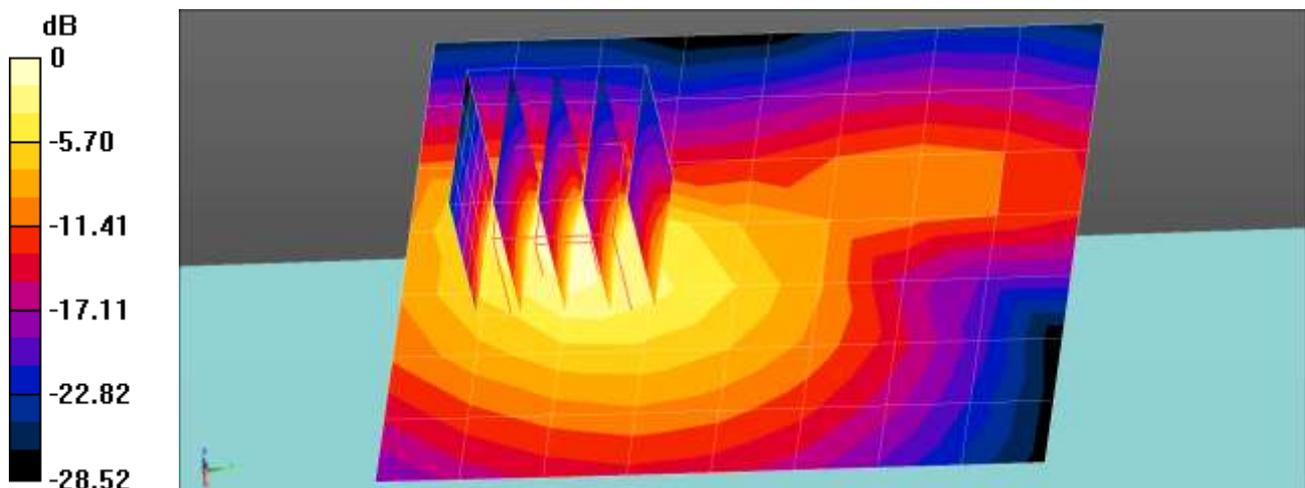
Communication System: UID 0, LTE Band 71 (0); Frequency: 673 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 673$ MHz; $\sigma = 0.91$ S/m; $\epsilon_r = 56.165$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(10.21, 10.21, 10.21); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

LTE Band71 Body Rear QPSK 20MHz 50RB 49offset 133222ch Backoff 0mm/Area Scan (8x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.26 W/kg

LTE Band71 Body Rear QPSK 20MHz 50RB 49offset 133222ch Backoff 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.970 V/m; Power Drift = 0.27 dB
Peak SAR (extrapolated) = 2.35 W/kg
SAR(1 g) = 0.832 W/kg; SAR(10 g) = 0.401 W/kg
Maximum value of SAR (measured) = 1.62 W/kg



0 dB = 1.26 W/kg = 1.00 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 22.4 °C
Ambient Temperature: 22.5 °C
Test Date: 09/16/2019
Plot No.: 23

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.88$ S/m; $\epsilon_r = 51.695$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.27, 7.27, 7.27); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2019-01-25
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

802.11b Body Rear 1Mbps 1ch Max 4mm Ant2/Area Scan (91x131x1): Interpolated grid:
dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.05 W/kg

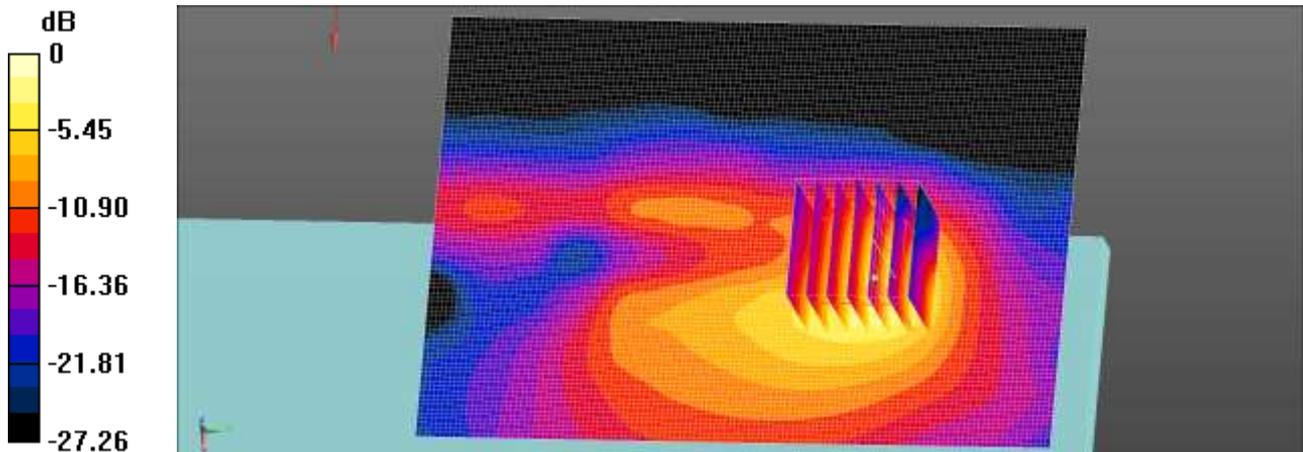
802.11b Body Rear 1Mbps 1ch Max 4mm Ant2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.498 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 0.734 W/kg; SAR(10 g) = 0.313 W/kg

Maximum value of SAR (measured) = 1.27 W/kg



0 dB = 1.27 W/kg = 1.04 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 22.4 °C
Ambient Temperature: 22.5 °C
Test Date: 09/16/2019
Plot No.: 24

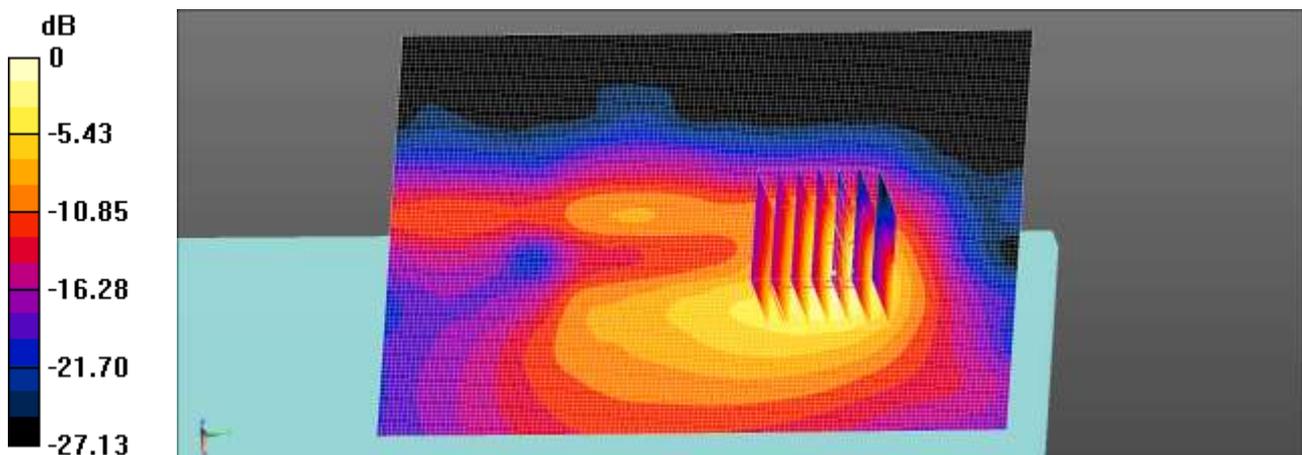
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.95$ S/m; $\epsilon_r = 51.627$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.27, 7.27, 7.27); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2019-01-25
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

802.11b Body Rear 1Mbps 11ch Max 4mm Ant2/Area Scan (91x131x1): Interpolated grid:
dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.15 W/kg

802.11b Body Rear 1Mbps 11ch Max 4mm Ant2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.375 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 0.793 W/kg; SAR(10 g) = 0.334 W/kg
Maximum value of SAR (measured) = 1.32 W/kg



0 dB = 1.32 W/kg = 1.21 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.5 °C
Test Date: 09/20/2019
Plot No.: 25

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5500 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5500$ MHz; $\sigma = 5.664$ S/m; $\epsilon_r = 47.925$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(3.99, 3.99, 3.99); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2019-01-25
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

802.11n Body Rear MCS8 100ch Max 4mm MIMO/Area Scan (101x151x1): Interpolated grid:

$dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 2.03 W/kg

802.11n Body Rear MCS8 100ch Max 4mm MIMO/Zoom Scan (7x7x7)/Cube 0:

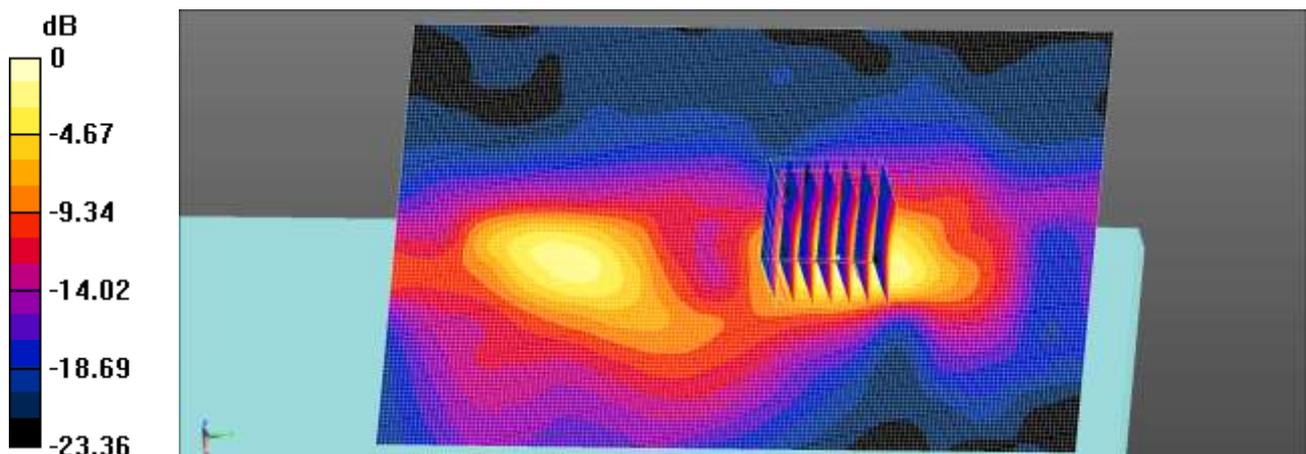
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm ; Graded Ratio:1.4

Reference Value = 3.201 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 3.15 W/kg

SAR(1 g) = 0.817 W/kg; SAR(10 g) = 0.259 W/kg

Maximum value of SAR (measured) = 2.00 W/kg



0 dB = 2.03 W/kg = 3.08 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.5 °C
Test Date: 09/20/2019
Plot No.: 26

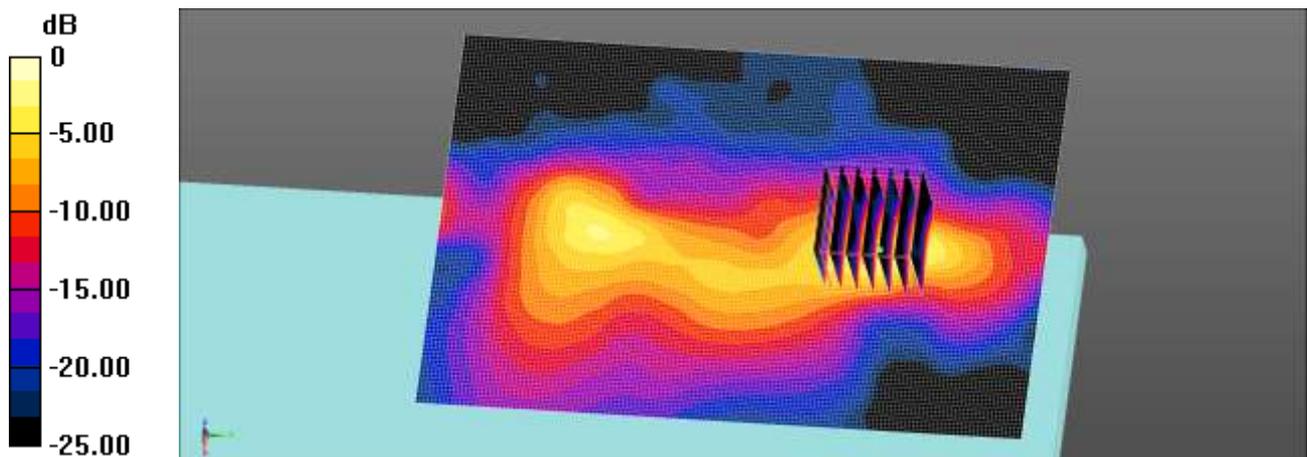
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5785 \text{ MHz}$; $\sigma = 5.901 \text{ S/m}$; $\epsilon_r = 47.396$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(4.15, 4.15, 4.15); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2019-01-25
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

802.11n Body Rear MCS8 157ch Max 4mm MIMO/Area Scan (101x151x1): Interpolated grid:
 $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$
Maximum value of SAR (interpolated) = 2.03 W/kg

802.11n Body Rear MCS8 157ch Max 4mm MIMO/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio:1.4
Reference Value = 3.917 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 3.63 W/kg
SAR(1 g) = 0.791 W/kg; SAR(10 g) = 0.217 W/kg
Maximum value of SAR (measured) = 2.09 W/kg



0 dB = 2.09 W/kg = 3.20 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Note PC
Liquid Temperature: 22.4 °C
Ambient Temperature: 22.5 °C
Test Date: 09/16/2019
Plot No.: 27

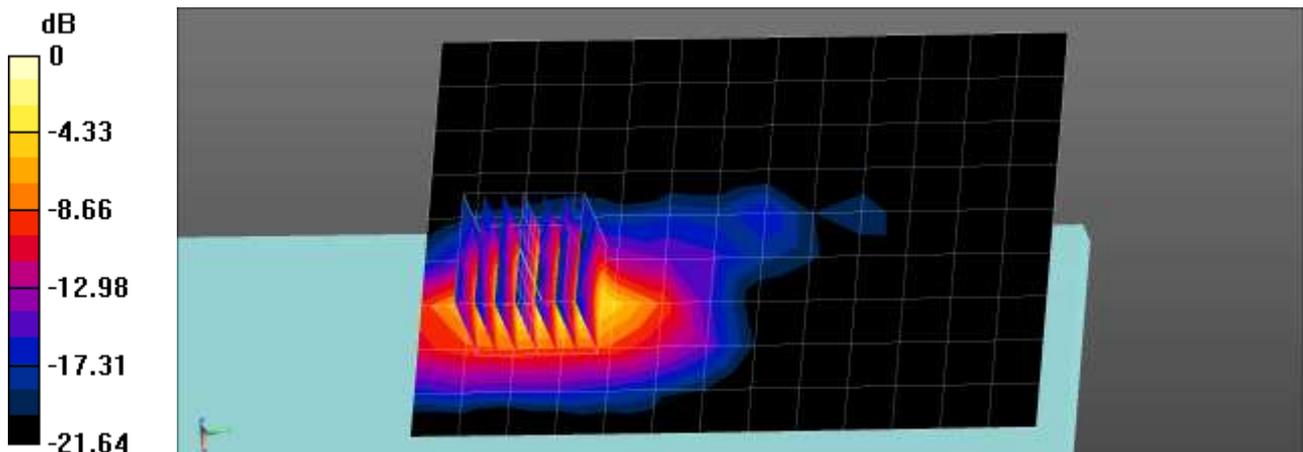
Communication System: UID 0, Bluetooth (0); Frequency: 2480 MHz; Duty Cycle: 1:1.299
Medium parameters used: $f = 2480$ MHz; $\sigma = 1.968$ S/m; $\epsilon_r = 51.573$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.27, 7.27, 7.27); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2019-01-25
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Bluetooth Body Rear DH5 78ch/Area Scan (10x14x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.209 W/kg

Bluetooth Body Rear DH5 78ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.137 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.445 W/kg
SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.064 W/kg
Maximum value of SAR (measured) = 0.313 W/kg



0 dB = 0.313 W/kg = -5.04 dBW/kg

Attachment 2. – Dipole Verification Plots

■ Verification Data (750 MHz Body)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.3 °C
Test Date: 09/04/2019

DUT: Dipole 750 MHz ; Type: D750V3

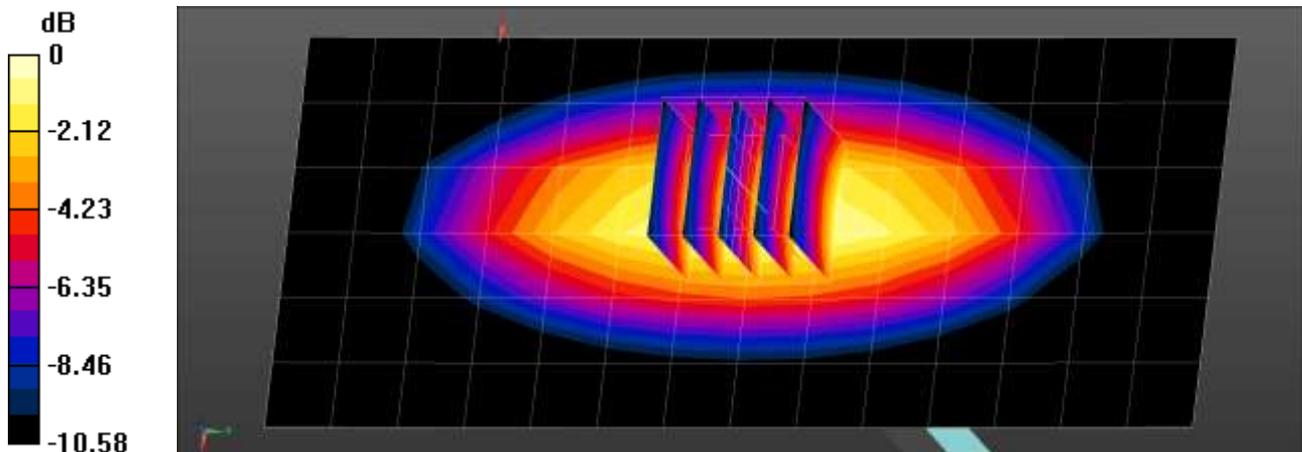
Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.972 \text{ S/m}$; $\epsilon_r = 54.383$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(9.69, 9.69, 9.69); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

Dipole/750MHz Body Verification/Area Scan (7x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.557 W/kg

Dipole/750MHz Body Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 25.22 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.685 W/kg
SAR(1 g) = 0.434 W/kg; SAR(10 g) = 0.284 W/kg
Maximum value of SAR (measured) = 0.594 W/kg



■ **Verification Data (750 MHz Body)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.4 °C
Test Date: 09/06/2019

DUT: Dipole 750 MHz ; Type: D750V3

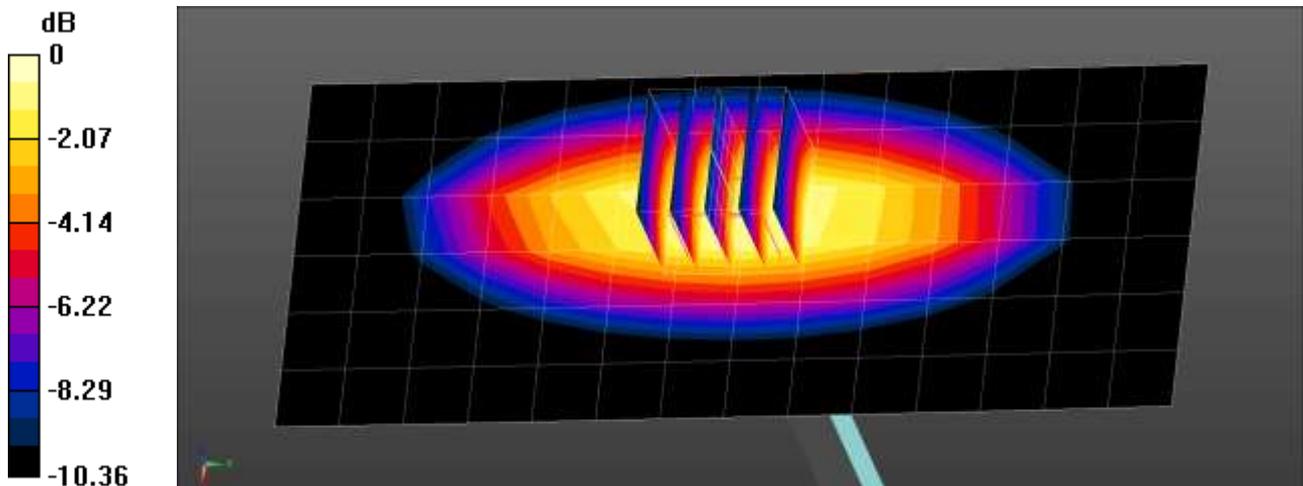
Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.963 \text{ S/m}$; $\epsilon_r = 55.515$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(9.69, 9.69, 9.69); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

Dipole/750MHz Body Verification/Area Scan (7x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.479 W/kg

Dipole/750MHz Body Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 22.59 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.625 W/kg
SAR(1 g) = 0.407 W/kg; SAR(10 g) = 0.267 W/kg
Maximum value of SAR (measured) = 0.551 W/kg



■ **Verification Data (835 MHz Body)**

Test Laboratory: HCT CO., LTD
 Input Power: 0.05 W
 Liquid Temp: 20.6 °C
 Test Date: 09/05/2019

DUT: Dipole 835 MHz; Type: D835V2

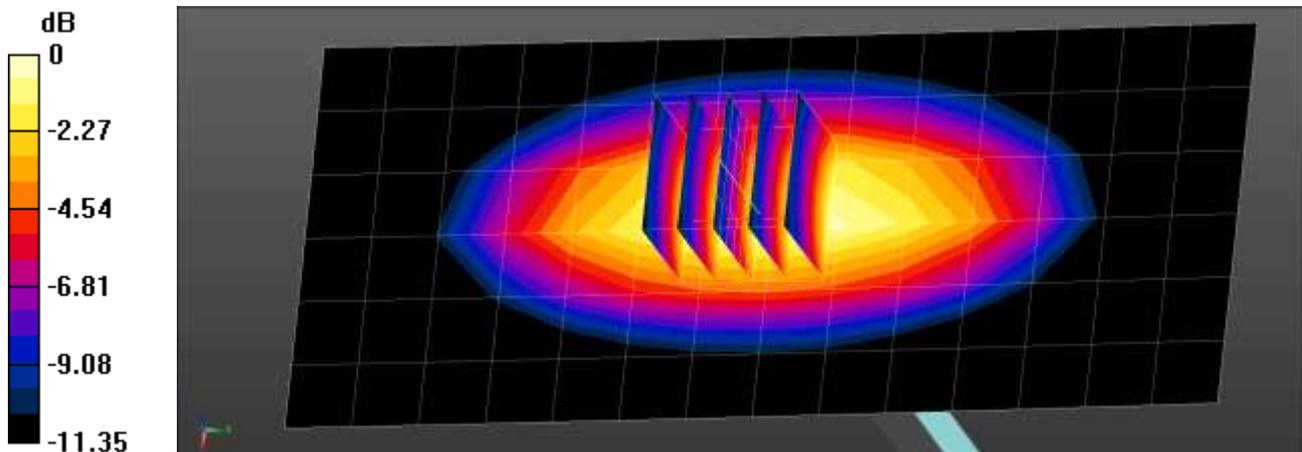
Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 835 \text{ MHz}$; $\sigma = 0.961 \text{ S/m}$; $\epsilon_r = 53.359$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(9.4, 9.4, 9.4); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

Dipole/835MHz Body Verification/Area Scan (7x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (measured) = 0.643 W/kg

Dipole/835MHz Body Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
 Reference Value = 27.06 V/m; Power Drift = 0.04 dB
 Peak SAR (extrapolated) = 0.790 W/kg
SAR(1 g) = 0.490 W/kg; SAR(10 g) = 0.315 W/kg
 Maximum value of SAR (measured) = 0.679 W/kg



0 dB = 0.679 W/kg = -1.68 dBW/kg

■ **Verification Data (1 800 MHz Body)**

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.1 °C
Test Date: 09/10/2019

DUT: Dipole 1800 MHz ; Type: D1800V2

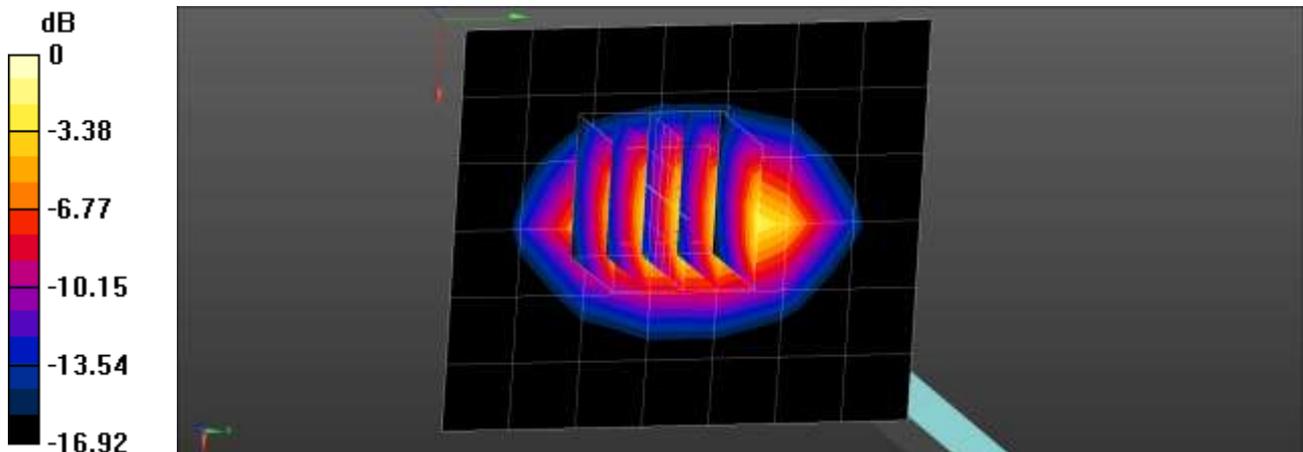
Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1800 \text{ MHz}$; $\sigma = 1.488 \text{ S/m}$; $\epsilon_r = 54.692$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.91, 7.91, 7.91); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

Dipole/1800MHz Body Verification/Area Scan (7x8x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 2.81 W/kg

Dipole/1800MHz Body Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 47.45 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.69 W/kg
SAR(1 g) = 1.97 W/kg; SAR(10 g) = 1.03 W/kg
Maximum value of SAR (measured) = 3.09 W/kg



0 dB = 3.09 W/kg = 4.90 dBW/kg

■ **Verification Data (1 900 MHz Body)**

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.2 °C
Test Date: 09/11/2019

DUT: Dipole 1900 MHz ; Type: D1900V2

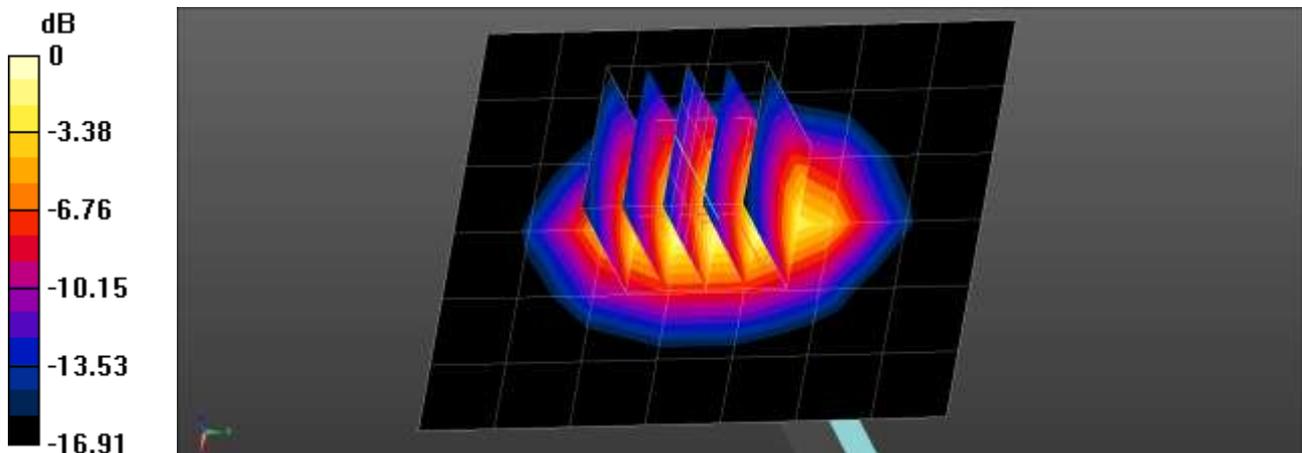
Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.556$ S/m; $\epsilon_r = 53.56$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.64, 7.64, 7.64); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2019-05-23
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (2);

Dipole/1900MHz Body Verification/Area Scan (7x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.78 W/kg

Dipole/1900MHz Body Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 46.16 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.58 W/kg
SAR(1 g) = 1.97 W/kg; SAR(10 g) = 1.04 W/kg
Maximum value of SAR (measured) = 3.02 W/kg



0 dB = 3.02 W/kg = 4.80 dBW/kg

■ Verification Data (2 300 MHz Body)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.4 °C
Test Date: 09/06/2019

DUT: Dipole 2300 MHz; Type: D2300V3

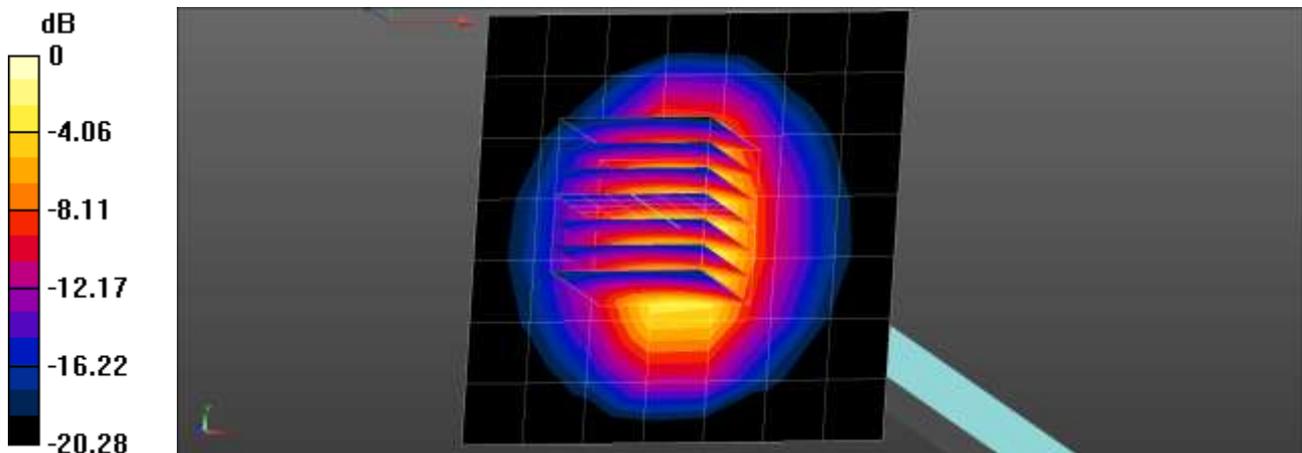
Communication System: UID 0, CW (0); Frequency: 2300 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2300$ MHz; $\sigma = 1.771$ S/m; $\epsilon_r = 54.114$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.26, 7.26, 7.26); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Dipole/2300 MHz Body Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 2.65 W/kg

Dipole/2300 MHz Body Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 48.81 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 4.72 W/kg
SAR(1 g) = 2.3 W/kg; SAR(10 g) = 1.1 W/kg
Maximum value of SAR (measured) = 3.80 W/kg



0 dB = 3.80 W/kg = 5.80 dBW/kg

■ **Verification Data (2 450 MHz Body)**

Test Laboratory: HCT CO., LTD
 Input Power: 0.05 W
 Liquid Temp: 22.4 °C
 Test Date: 09/16/2019

DUT: Dipole 2450 MHz; Type: D2450V2

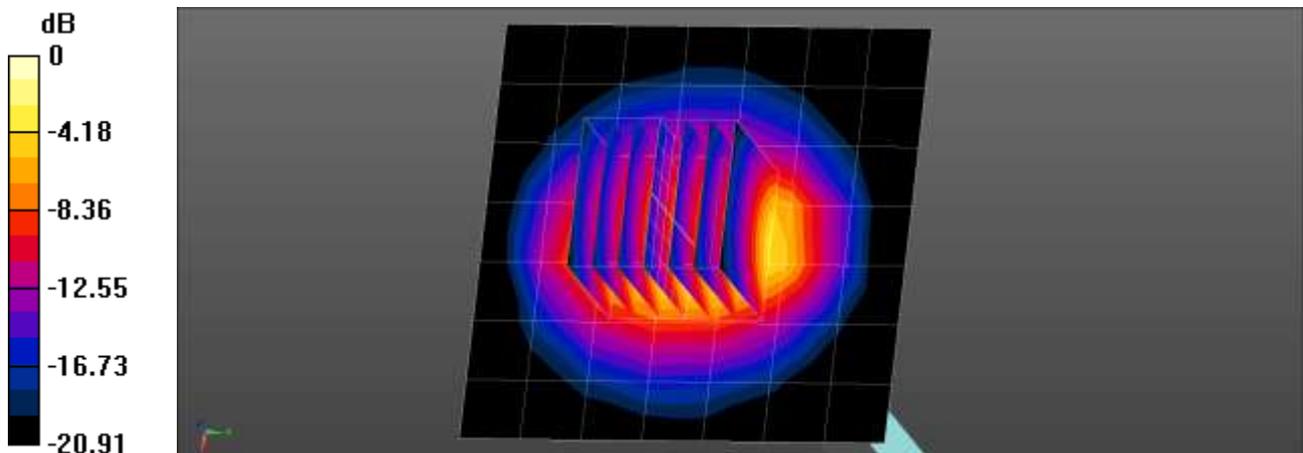
Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.941 \text{ S/m}$; $\epsilon_r = 51.658$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(7.27, 7.27, 7.27); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2019-01-25
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Dipole/2450 MHz Body Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
 Maximum value of SAR (measured) = 3.11 W/kg

Dipole/2450 MHz Body Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 45.63 V/m; Power Drift = -0.13 dB
 Peak SAR (extrapolated) = 4.78 W/kg
SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.12 W/kg
 Maximum value of SAR (measured) = 3.91 W/kg



0 dB = 3.91 W/kg = 5.92 dBW/kg

■ **Verification Data (2 600 MHz Body)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.0 °C
Test Date: 09/05/2019

DUT: Dipole 2600 MHz; Type: D2600V2

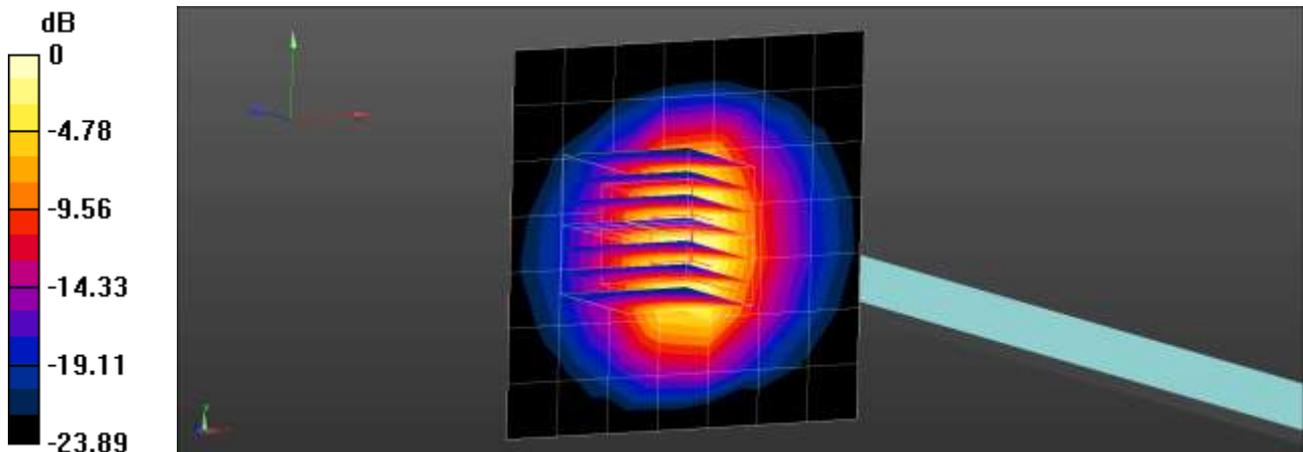
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2600$ MHz; $\sigma = 2.108$ S/m; $\epsilon_r = 53.167$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.05, 7.05, 7.05); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Dipole/2600 MHz Body Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.50 W/kg

Dipole/2600 MHz Body Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.05 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 6.32 W/kg
SAR(1 g) = 2.77 W/kg; SAR(10 g) = 1.22 W/kg
Maximum value of SAR (measured) = 4.91 W/kg



0 dB = 4.91 W/kg = 6.91 dBW/kg

■ **Verification Data (2 600 MHz Body)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.5 °C
Test Date: 09/25/2019

DUT: Dipole 2600 MHz; Type: D2600V2

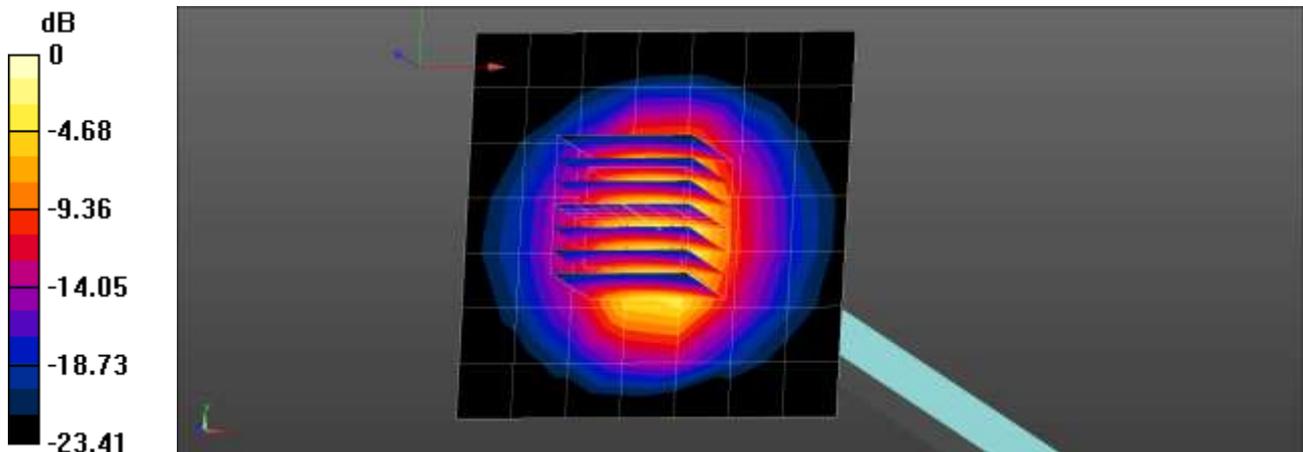
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2600 \text{ MHz}$; $\sigma = 2.108 \text{ S/m}$; $\epsilon_r = 53.208$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.05, 7.05, 7.05); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Dipole/2600 MHz Body Verification/Area Scan (8x8x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$
Maximum value of SAR (measured) = 3.53 W/kg

Dipole/2600 MHz Body Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 49.96 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 6.35 W/kg
SAR(1 g) = 2.8 W/kg; SAR(10 g) = 1.23 W/kg
Maximum value of SAR (measured) = 4.94 W/kg



0 dB = 4.94 W/kg = 6.94 dBW/kg

■ Verification Data (2 600 MHz Body)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 23.5 °C
Test Date: 09/26/2019

DUT: Dipole 2600 MHz; Type: D2600V2

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2600$ MHz; $\sigma = 2.106$ S/m; $\epsilon_r = 53.177$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.05, 7.05, 7.05); Calibrated: 2018-11-22;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2018-11-16
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

2600 MHz Body Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.87 W/kg

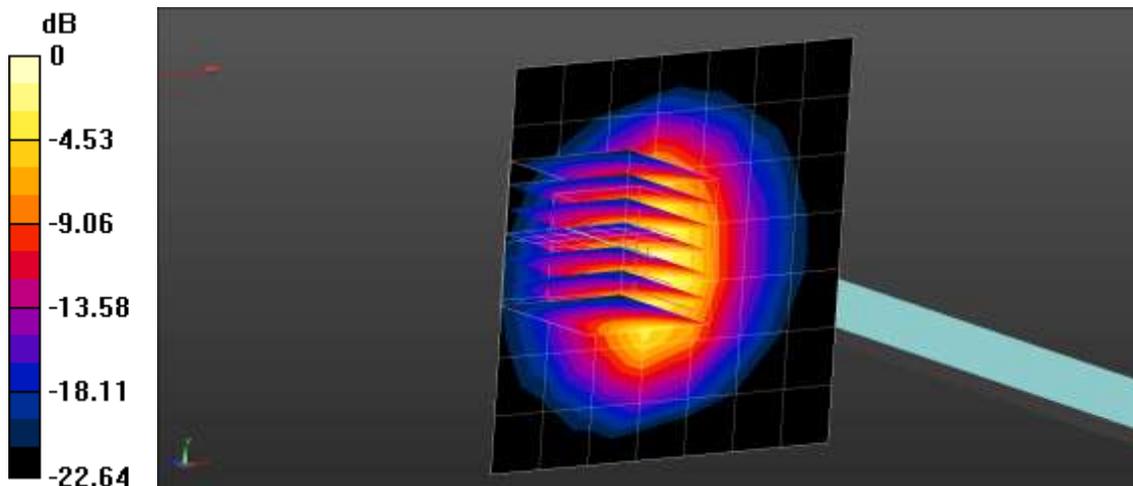
2600 MHz Body Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 42.61 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 5.57 W/kg

SAR(1 g) = 2.6 W/kg; SAR(10 g) = 1.16 W/kg

Maximum value of SAR (measured) = 4.46 W/kg



0 dB = 4.46 W/kg = 6.49 dBW/kg

■ **Verification Data (5 250 Mhz Body)**

Test Laboratory: HCT CO., LTD
 Input Power 0.05 W
 Liquid Temp: 20.4 °C
 Test Date: 09/20/2019

DUT: Dipole D5GHzV2; Type: D5GHzV2

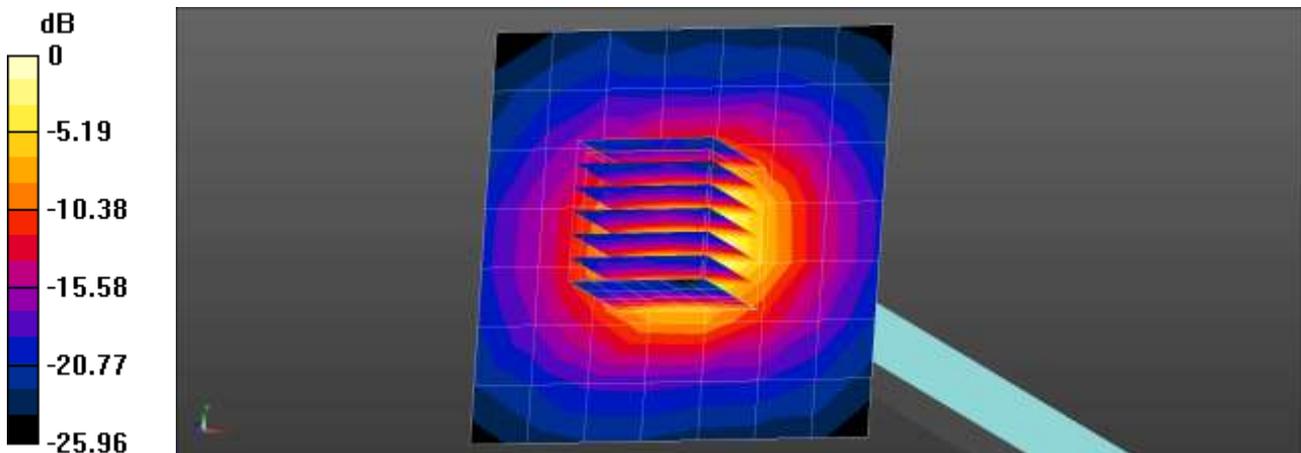
Communication System: UID 0, CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 5250 \text{ MHz}$; $\sigma = 5.354 \text{ S/m}$; $\epsilon_r = 48.087$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(4.44, 4.44, 4.44); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2019-01-25
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Dipole/5250MHz Body Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
 Maximum value of SAR (measured) = 6.84 W/kg

Dipole/5250MHz Body Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm ; Graded Ratio:1.4
 Reference Value = 48.25 V/m; Power Drift = -0.10 dB
 Peak SAR (extrapolated) = 15.9 W/kg
SAR(1 g) = 3.99 W/kg; SAR(10 g) = 1.13 W/kg
 Maximum value of SAR (measured) = 9.96 W/kg



0 dB = 6.84 W/kg = 8.35 dBW/kg

■ **Verification Data (5 600 MHz Body)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.4 °C
Test Date: 09/20/2019

DUT: Dipole D5GHzV2; Type: D5GHzV2

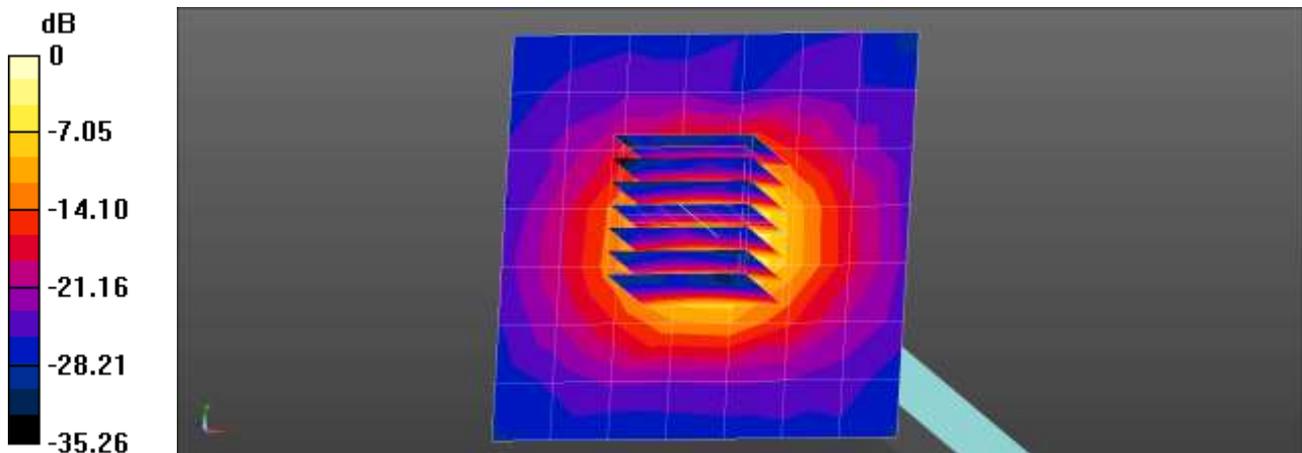
Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5600$ MHz; $\sigma = 5.751$ S/m; $\epsilon_r = 47.678$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(3.99, 3.99, 3.99); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2019-01-25
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Dipole/5600MHz Body Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 6.54 W/kg

Dipole/5600MHz Body Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm ; Graded Ratio:1.4
Reference Value = 47.78 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 17.8 W/kg
SAR(1 g) = 3.9 W/kg; SAR(10 g) = 1.04 W/kg
Maximum value of SAR (measured) = 10.3 W/kg



0 dB = 10.3 W/kg = 10.13 dBW/kg

■ Verification Data (5 750 MHz Body)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.4 °C
Test Date: 09/20/2019

DUT: Dipole D5GHzV2; Type: D5GHzV2

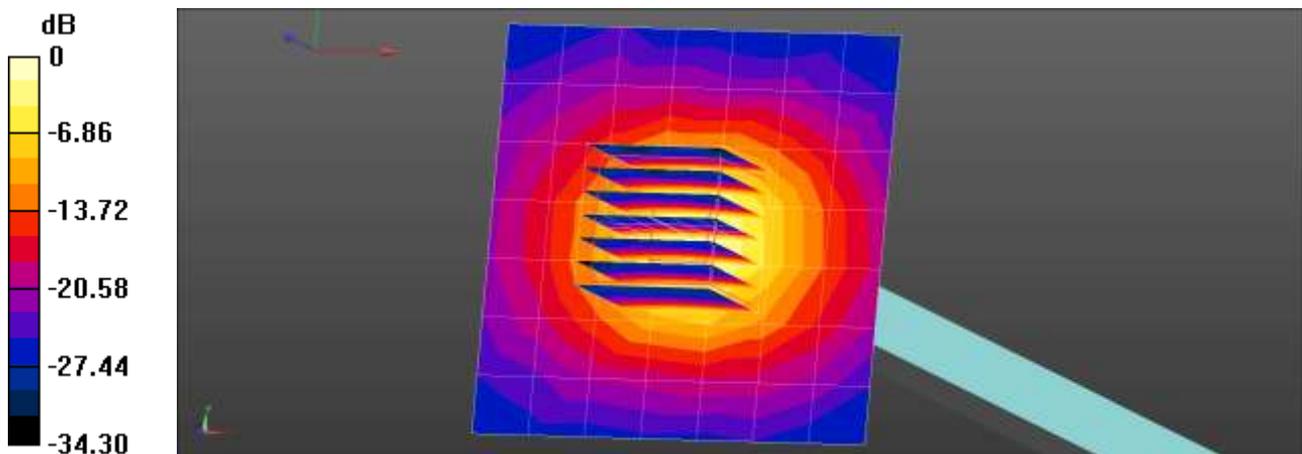
Communication System: UID 0, CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5750$ MHz; $\sigma = 6.043$ S/m; $\epsilon_r = 47.41$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3967; ConvF(4.15, 4.15, 4.15); Calibrated: 2019-02-01;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2019-01-25
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Dipole/5750MHz Body Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 6.96 W/kg

Dipole/5750MHz Body Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm ; Graded Ratio:1.4
Reference Value = 44.50 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 16.7 W/kg
SAR(1 g) = 3.68 W/kg; SAR(10 g) = 1.07 W/kg
Maximum value of SAR (measured) = 9.51 W/kg



0 dB = 9.51 W/kg = 9.78 dBW/kg

Attachment 3. – SAR Tissue Characterization

The brain and muscle mixtures consist of a viscous gel using hydrox-ethyl cellulose (HEC) gelling agent and saline solution (see Table 3.1). Preservation with a bacteriacide is added and visual inspection is made to make sure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. The mixture characterizations used for the brain and muscle tissue simulating liquids are according to the data by C. Gabriel and G. Harts grove.

Ingredients (% by weight)	Frequency (MHz)											
	750		835		1 750		1 900		2 450 – 2 700		5 200 - 5 800	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	41.1	51.7	40.45	53.06	52.6	68.8	54.9	70.17	71.88	73.2	65.52	78.66
Salt (NaCl)	1.4	0.9	1.45	0.94	0.4	0.2	0.18	0.39	0.16	0.1	0.0	0.0
Sugar	57.0	47.2	57.0	44.9	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
HEC	0.2	0	1.0	1.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Bactericide	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.97	0.0	17.24	10.67
DGBE	0.0	0.0	0.0	0.0	47	31	44.92	29.44	7.99	26.7	0.0	0.0
Diethylene glycol hexyl ether	-	-	-	-	-	-	-	-	-	-	-	-

Salt:	99 % Pure Sodium Chloride	Sugar:	98 % Pure Sucrose
Water:	De-ionized, 16M resistivity	HEC:	Hydroxyethyl Cellulose
DGBE:	99 % Di(ethylene glycol) butyl ether,[2-(2-butoxyethoxy) ethanol]		
Triton X-100(ultra-pure):	Polyethylene glycol mono[4-(1,1,3,3-tetramethylbutyl)phenyl] ether		

Composition of the Tissue Equivalent Matter

Attachment 4. – SAR System Validation

Per FCC KCB 865664 D02v01r02, SAR system validation status should be document to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in IEEE 1528-2013 and FCC KDB 865664 D01v01r04. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

SAR System No.	Probe	Probe Type	Probe		Dipole	Date	Dielectric Parameters		CW Validation			Modulation Validation		
			Calibration Point				Measured Permittivity	Measured Conductivity	Sensitivity	Probe Linearity	Probe Isotropy	MOD. Type	Duty Factor	PAR
8	3967	EX3DV4	Body	750	1014	2019-06-10	55.6	0.98	PASS	PASS	PASS	N/A	N/A	N/A
8	3967	EX3DV4	Body	835	441	2019-09-03	55.4	0.99	PASS	PASS	PASS	N/A	N/A	N/A
8	3967	EX3DV4	Body	835	441	2019-09-03	55.4	0.99	PASS	PASS	PASS	GMSK	PASS	N/A
8	3967	EX3DV4	Body	1750	2d007	2019-02-11	53.5	1.52	PASS	PASS	PASS	N/A	N/A	N/A
8	3967	EX3DV4	Body	1750	2d007	2019-02-11	53.5	1.52	PASS	PASS	PASS	GMSK	PASS	N/A
8	3967	EX3DV4	Body	1900	5d032	2019-03-04	53.3	1.53	PASS	PASS	PASS	N/A	N/A	N/A
8	3967	EX3DV4	Body	1900	5d032	2019-03-04	53.3	1.53	PASS	PASS	PASS	GMSK	PASS	N/A
3	3797	EX3DV4	Body	2300	1010	2018-12-04	52.9	1.82	PASS	PASS	PASS	N/A	N/A	N/A
8	3967	EX3DV4	Body	2450	743	2019-02-11	52.8	1.94	PASS	PASS	PASS	OFDM	N/A	PASS
3	3797	EX3DV4	Body	2600	1015	2018-12-04	52.3	2.17	PASS	PASS	PASS	N/A	N/A	N/A
3	3797	EX3DV4	Body	2600	1015	2018-12-04	52.3	2.17	PASS	PASS	PASS	TDD	PASS	N/A
8	3967	EX3DV4	Body	5250	1253	2019-02-11	48.8	5.36	PASS	PASS	PASS	OFDM	N/A	PASS
8	3967	EX3DV4	Body	5600	1253	2019-02-11	48.3	5.78	PASS	PASS	PASS	OFDM	N/A	PASS
8	3967	EX3DV4	Body	5750	1253	2019-02-11	48.4	5.95	PASS	PASS	PASS	OFDM	N/A	PASS

SAR System Validation Summary 1g

Note;

All measurement were performed using probes calibrated for CW signal only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04. SAR system were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to KDB 865664 D01v01r04.