

G.1 LTE Downlink Only Carrier Aggregation Test Selection and Setup

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers (CCs) supported by the product implementation. For those configurations required by April 2018 TCBC Workshop Notes, conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the maximum average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive. All bands required for SAR testing per FCC KDB procedures were considered. Based on the measured maximum powers below, no additional SAR tests were required for DLCA SAR configurations.

General PCC and SCC configuration selection procedure

- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)ii) of KDB 941225 D05 V01r02. All LTE bandwidth conducted powers needed for PCC uplink configuration selection can be found in RF Conducted Powers Section and LTE/NR Lower Bandwidth RF Conducted Powers Appendix. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
- To maximize aggregated bandwidth, highest channel bandwidth available for that CA combination was selected for SCC. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
- All selected PCC and SCC(s) remained fully within the uplink/downlink transmission band of the respective component carrier.

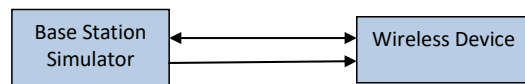


Figure G-1
DL CA Power Measurement Setup

FCC ID: BCGA2899	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX G: Page 2 of 13

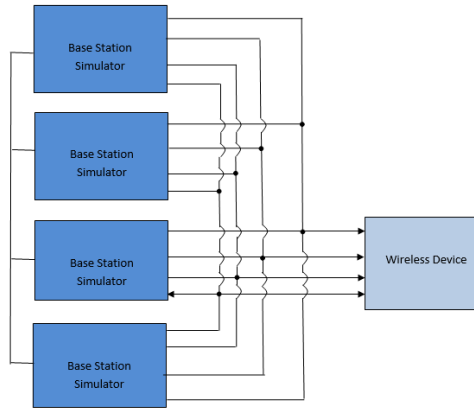


Figure G-2
DL CA with DL 4x4 MIMO Power Measurement Setup

G.2 Downlink Carrier Aggregation RF Conducted Powers

G.2.1 LTE Band 71 as PCC

Table G-3
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
				PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset			SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]		
CA 4A-71A	LTE B71	10	133172	668	64QAM	1	0	68636	622	LTE B4	20	55940	3090	-	-	-	-	-	-	-	-	-	-	-	-	19.93	20.27
CA 2A-4A-71A	LTE B71	10	133172	668	64QAM	1	0	68636	622	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	19.76	20.27
CA 4A-4A-71A	LTE B71	10	133172	668	64QAM	1	0	68636	622	LTE B4	20	2175	2132.5	LTE B4	20	2260	2150	-	-	-	-	-	-	-	-	19.76	20.27
CA 2A-66A-66A-71A	LTE B71	10	133172	668	64QAM	1	0	68636	622	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	19.31	20.27
CA 2A-66C-71A	LTE B71	10	133172	668	64QAM	1	0	68636	622	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	-	-	-	-	19.34	20.27
CA 2A-2A-7A-66A-71A	LTE B71	10	133172	668	64QAM	1	0	68636	622	LTE B66	20	66786	2145	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B7	20	3100	2655	19.91	20.27

G.2.2 LTE Band 12 as PCC

Table G-4
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
				PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset			SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]		
CA 2A-12A (1)	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	-	-	-	19.86	19.82
CA 4A-12A (1)	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	19.92	19.82
CA 4A-12A (2)	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	19.92	19.82
CA 12A-12A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B25	20	1300	1902.5	-	-	-	-	-	-	-	-	-	-	-	-	19.90	19.82
CA 12A-48A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B48	20	55940	3625	-	-	-	-	-	-	-	-	-	-	-	-	19.74	19.82
CA 12A-66A (1)	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	19.82	19.82
CA 12A-66A (2)	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	19.82	19.82
CA 2C-12A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	20	702	1940.2	-	-	-	-	-	-	-	-	19.90	19.82
CA 12A-48C	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B48	20	55940	3625	LTE B48	20	66186	2644.8	-	-	-	-	-	-	-	-	19.83	19.82
CA 2A-2A-4A-12A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	-	-	19.89	19.82
CA 2A-2A-12B	LTE B12	5	23095	707.5	16QAM	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B2	20	700	1940	-	-	-	-	19.97	19.87
CA 2A-4A-4A-12A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B4	10	2360	2150	-	-	-	-	19.88	19.82
CA 2A-3A-7A-12A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B7	20	3100	2655	-	-	-	-	19.86	19.82
CA 2A-4A-12B	LTE B12	5	23095	707.5	16QAM	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	19.87	19.47
CA 2A-12A-66C	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	-	-	-	-	19.85	19.82
CA 4A-4A-12B	LTE B12	5	23095	707.5	16QAM	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B4	20	2175	2132.5	LTE B4	10	2360	2150	LTE B66	20	66786	2145	19.90	19.47
CA 2A-2A-7A-12A-66A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B7	20	3100	2655	LTE B66	20	66786	2145	19.85	19.82
CA 2A-2A-12A-30A-66A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	19.84	19.82
CA 2A-2A-12A-66A-66A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	19.83	19.82
CA 2A-12A-30A-66A-66A	LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2190	19.83	19.82

G.2.3 LTE Band 13 as PCC

Table G-5
Maximum Output Powers

Combination	PCC Band	PCC								SCC 1				SCC 2				SCC 3				SCC 4				Power		
		PCC BW [MHz]	PCC [UL] Ch	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	LTE Tx Power with DR CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 2A-4A-13A	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	20.42	20.53
CA 2A-13A-48A	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B48	20	55900	3625	-	-	-	-	-	-	-	-	-	20.37	20.53
CA 4A-48A-13A	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B4	20	2175	2132.5	LTE B4	10	2390	2150	-	-	-	-	-	-	-	-	-	20.43	20.53
CA 13A-48A-66A	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B48	20	55900	3625	LTE B48	20	56188	3644.8	-	-	-	-	-	-	-	-	-	20.46	20.53
CA 2A-7C-13A	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2	-	-	-	-	-	20.57	20.53
CA 2A-13A-48C	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B48	20	55900	3625	LTE B48	20	56188	3644.8	-	-	-	-	-	20.55	20.53
CA 2A-13A-66B	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B66	15	66786	2145	LTE B66	5	66879	2154.3	-	-	-	-	-	20.56	20.53
CA 2A-13A-66C	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66884	2164.8	-	-	-	-	-	20.55	20.53
CA 13A-48C-66A	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B48	20	55900	3625	LTE B48	20	56188	3644.8	LTE B66	20	66786	2145	-	-	-	-	-	20.51	20.53
CA 13A-66A-66B	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B66	20	66786	2145	LTE B66	5	67160	2183.2	LTE B66	15	67263	2192.3	-	-	-	-	-	20.45	20.53
CA 13A-66A-66C	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B66	20	66786	2145	LTE B66	20	67208	2170.2	LTE B66	20	67226	2190	-	-	-	-	-	20.57	20.53
CA 2A-2A-13A-66A-66A	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	20.58	20.53	
CA 2A-7A-13A-13A-66A	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B2	20	900	1960	LTE B7	20	2850	2630	LTE B7	20	3100	2655	LTE B66	20	66536	2120	20.47	20.53	
CA 13A-48C-66A	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B48	20	55900	3625	LTE B48	20	56188	3644.8	LTE B48	20	56386	3664.6	LTE B66	20	66786	2145	20.52	20.53	
CA 13A-48E	LTE B13	10	23230	762	QPSK	1	0	5230	751	LTE B48	20	55900	3625	LTE B48	20	56386	3664.6	LTE B48	20	56386	3664.6	LTE B48	20	56386	3664.6	20.57	20.53	

G.2.4 LTE Band 14 as PCC

Table G-6
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch	PCC				SCC 1				SCC 2				SCC 3				SCC 4				Power			
				Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	LTE Tx Power with DR CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-2A-14A-30A-66A	LTE B14	5	23130	793	64QAM	1	12	5330	763	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	9620	2355	LTE B66	20	66786	2145	20.50	20.94
CA 2A-2A-14A-66A-66A	LTE B14	5	23130	793	64QAM	1	12	5330	763	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	66786	2145	20.47	20.94
CA 2A-14A-30A-66A-66A	LTE B14	5	23130	793	64QAM	1	12	5330	763	LTE B2	20	900	1960	LTE B30	10	9620	2355	LTE B66	20	66786	2145	LTE B66	20	67236	2190	20.51	20.94

G.2.5 LTE Band 5 as PCC

Table G-7
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch	PCC				PCC [DL] Channel	PCC [DL] Freq. [MHz]	SCC 1			SCC 2			SCC 3			SCC 4			LTE Tx Power with SC CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)				
				Mod.	PCC UL RB	PCC UL RB Offset				SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]						
CA 5A-7A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B7	20	3100	2655									19.98	19.98				
CA 5A-25A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B25	20	8365	1962.5									19.99	19.98				
CA 5A-43A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B43	20	65830	2553									19.97	19.98				
CA 5B (1)	LTE B5	5	20525	836.5	QPSK	1	12	2525	881.5	LTE B5	3	2488	877.6									19.79	19.93				
CA 2C-5A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940.2					19.96	19.98				
CA 4A-9B	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B5	5	2453	874.3	LTE B4	20	2175	2132.5					19.98	19.98				
CA 5B-30A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B5	5	2453	874.3	LTE B30	10	9820	2355					19.97	19.98				
CA 2A-2A-4A-5A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5		20.00	19.98			
CA 2A-4A-4A-5A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B4	15	2190	2150		19.98	19.98			
CA 2A-5A-7C	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2		19.99	19.98			
CA 2A-5A-48A-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B48	20	55900	3625	LTE B66	20	66786	2145		20.00	19.98			
CA 2A-5A-48C	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B48	20	55900	3625	LTE B48	20	56188	3644.8		19.91	19.98			
CA 2A-5B-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B5	5	2453	874.3	LTE B66	20	900	1960	LTE B66	20	66786	2145		19.99	19.98			
CA 5A-7A-66A-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B7	20	3100	2655	LTE B66	20	66786	2145	LTE B66	20	67236	2190		19.98	19.98			
CA 5A-48C-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B48	20	55900	3625	LTE B48	20	56188	3644.8	LTE B66	20	66786	2145		19.94	19.98			
CA 5A-48D	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B48	20	55900	3625	LTE B48	20	56188	3644.8	LTE B48	20	56386	3664.6		19.99	19.98			
CA 5A-66A-66B	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B66	20	66786	2145	LTE B66	15	67263	2183.2	LTE B66	5	67288	2183.2		19.98	19.98			
CA 5A-66A-66C	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	LTE B66	20	67208	2170.2		19.99	19.98			
CA 2A-2A-5A-5B-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	9820	2355	LTE B66	20	66536	2145	20.00	19.98
CA 2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	19.99	19.98
CA 2A-2A-5A-66B	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B66	15	66786	2145	LTE B66	5	66879	2154.3		20.00	19.98			
CA 2A-2A-5A-66C	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66884	2164.8		19.97	19.98			
CA 2A-5A-7A-7A-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B7	20	2950	2630	LTE B2	20	900	1960	LTE B66	20	66536	2145	LTE B66	20	66536	2120	19.98	19.98
CA 2A-5A-7A-66A-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B7	20	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	LTE B66	20	67236	2190	19.98	19.98
CA 2A-5A-7C-66A-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B7	20	900	1960	LTE B48	20	55900	3625	LTE B66	20	66786	2145	LTE B66	20	66536	2120	19.98	19.98
CA 5A-7C-66A-66A	LTE B5	10	20525	836.5	QPSK	25	12	2525	881.5	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2	LTE B66	20	66786	2145	LTE B66	20	66536	2120	19.98	19.98

G.2.9 LTE Band 30 as PCC

Table G-11
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 1			SCC 2			SCC 3			SCC 4			LTE Tx Power with DC CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)					
				PCC (UL) Freq. [MHz]	PCC (UL) RB	PCC (UL) RB Offset	SCC Band						SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band			SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]		
CA_2C-30A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B2	20	900	1960	LTE B2	20	702	1940.2	-	-	-	-	-	-	-	-	-	14.34	14.36			
CA_3B-30A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B5	10	2525	881.5	LTE B5	5	2403	874.3	-	-	-	-	-	-	-	-	-	-	14.30	14.36		
CA_3A-30A-66A-66A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B29	10	9715	722.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	-	-	-	14.34	14.36	
CA_30A-66A-66A-66A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B66	20	66936	2160	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	-	-	-	14.34	14.36	
CA_2A-2A-30A-30A-66A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	-	-	-	-	14.39	14.36
CA_2A-2A-12A-30A-66A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	14.35	14.36
CA_2A-2A-13A-30A-66A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B14	10	5190	743	LTE B66	20	66786	2145	-	-	-	-	14.40	14.36
CA_2A-2A-25A-30A-66A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B2	20	900	1960	LTE B29	10	9715	722.5	LTE B2	20	700	1940	LTE B66	20	66786	2145	-	-	-	-	14.35	14.36
CA_2A-5A-30A-66A-66A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	14.42	14.36
CA_2A-12A-30A-66A-66A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B2	20	900	1960	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	14.41	14.36
CA_2A-13A-30A-66A-66A	LTE E30	10	27750	2310	QPSK	25	12	9620	2355	LTE B2	20	900	1960	LTE B14	10	5190	743	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	14.40	14.36

G.2.10 LTE Band 7 as PCC

Table G-12
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC 1		SCC 2		SCC 3		SCC 4		LTE Tx Power with DC CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)						
				SCC BW [MHz]	SCC (DL) Channel	SCC Band	SCC BW [MHz]							SCC (DL) Channel	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel			SCC (DL) Freq. [MHz]					
CA_5A-7A	LTE B7	10	21100	2535	64QAM	1	25	3100	2655	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	-	11.09	11.79					
CA_7A-26A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B26	15	8865	876.5	-	-	-	-	-	-	-	-	-	12.04	11.79					
CA_7A-29A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B29	10	9715	722.5	-	-	-	-	-	-	-	-	-	11.89	11.79					
CA_7B	LTE B7	20	21100	2535	16QAM	1	50	530	7080	LTE B7	20	3152	2680.2	-	-	-	-	-	-	-	-	-	11.08	11.78					
CA_4A-4A-7A (1)	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	-	-	11.41	11.79				
CA_7A-7A-26A	LTE B7	10	21100	2535	64QAM	1	25	3100	2655	LTE B7	20	2850	2630	LTE B26	15	8865	876.5	-	-	-	-	-	-	11.19	11.78				
CA_2A-4A-7A-7A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B7	20	2850	2630	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	11.35	11.79		
CA_2A-7A-12A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	-	-	-	-	11.31	11.79		
CA_2A-4A-7C	LTE B7	10	21100	2535	64QAM	1	25	3100	2655	LTE B7	20	2956	2640.6	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	11.31	11.78		
CA_2A-5A-7C	LTE B7	10	21100	2535	64QAM	1	25	3100	2655	LTE B7	20	2956	2640.6	LTE B2	20	900	1960	LTE B5	10	2525	881.5	-	-	-	-	11.32	11.78		
CA_2A-7C-13A	LTE B7	10	21100	2535	64QAM	1	25	3100	2655	LTE B7	20	2956	2640.6	LTE B2	20	900	1960	LTE B13	10	5230	751	-	-	-	-	11.32	11.78		
CA_2A-7C-66A	LTE B7	10	21100	2535	64QAM	1	25	3100	2655	LTE B7	20	2956	2640.6	LTE B2	20	900	1960	LTE B66	20	66786	2145	-	-	-	-	11.36	11.78		
CA_5A-7A-66A-66A	LTE B7	10	21100	2535	64QAM	1	25	3100	2655	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	11.36	11.78		
CA_7A-7A-25A-66A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B7	20	2850	2630	LTE B25	20	8565	1902.5	LTE B66	20	67236	2190	-	-	-	-	11.32	11.79		
CA_2A-2A-7A-12A-66A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	-	-	11.39	11.79
CA_2A-2A-7A-66A-66A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	67236	2190	LTE B66	20	66786	2145	-	-	11.40	11.79
CA_2A-2A-7A-66A-71A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	67236	2190	LTE B71	20	68761	694.5	-	-	11.38	11.79
CA_2A-5A-7A-7A-66A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B7	20	3100	2655	LTE B66	20	66786	2145	-	-	11.41	11.79
CA_2A-7A-7A-13A-66A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B7	20	2850	2630	LTE B2	20	900	1960	LTE B13	10	5230	751	LTE B66	20	67236	2190	-	-	11.35	11.79
CA_2A-7A-7A-66A-66A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B7	20	2850	2630	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	11.35	11.79
CA_2A-7A-7A-66A-66A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B7	20	3100	2655	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	11.48	11.79
CA_5A-7C-66A-66A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B7	20	3100	2655	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	11.47	11.79

G.2.11 LTE Band 41 as PCC

Table G-13
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx Power with DC CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
				PCC (UL) Freq. [MHz]	PCC (UL) RB	PCC (UL) RB Offset	PCC (DL) Channel						SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]			
CA_5A-41A	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.16	14.17	
CA_41A-41A (1)	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B41	20	41490	2680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.20	14.17	
CA_41A-41C	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B41	20	41292	2660.2	LTE B41	20	41490	2680	-	-	-	-	-	-	-	-	-	-	-	-	14.14	14.17
CA_41C-41A	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B41	20	40818	2612.8	LTE B41	20	41490	2680	-	-	-	-	-	-	-	-	-	-	-	-	14.20	14.17
CA_41A-41C	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B41	20	41094	2640.4	LTE B41	20	41292	2660.2	LTE B41	20	41490	2680	-	-	-	-	-	-	-	-	14.15	14.17
CA_41C-41A	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B41	20	40422	2573.2	LTE B41	20	40818	2612.8	LTE B41	20	41490	2680	-	-	-	-	-	-	-	-	14.16	14.17
CA_41C-41C	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B41	20	40422	2573.2	LTE B41	20	41292	2660.2	LTE B41	20	41490	2680	-	-	-	-	-	-	-	-	14.17	14.17
CA_41E	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B41	20	40422	2573.2	LTE B41	20	40818	2612.8	LTE B41	20	41094	2640.4	-	-	-	-	-	-	-	-	14.17	14.17
CA_41C-41D	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B41	20	40422	2573.2	LTE B41	20	41292	2660.2	LTE B41	20	41292	2660.2	-	-	-	-	-	-	-	-	14.14	14.17
CA_41C-41E	LTE B41	20	40620	2593	QPSSK	50	25	40620	2593	LTE B41	20	40422	2573.2	LTE B41	20	40818	2612.8	LTE B41	20	41292	2660.2	LTE B41	20	41490	2680	-	-	-	-	14.12	14.17

G.3 DL CA with DL 4x4 MIMO RF Conduction Powers

This device supports downlink 4x4 MIMO operations for some LTE bands. Uplink transmission is limited to a single output stream. When carrier aggregation was applicable, the general test selection and setup procedures described in Section G.1 were applied.

Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

G.3.1 LTE 4x4 MIMO DL Standalone Powers

Table G-15
Maximum Output Powers - Antenna 1b

LTE Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Modulation	RB Size	RB Offset	4x4 DL MIMO Tx. Power [dBm]	Single Antenna Tx. Power [dBm]	Target Power [dBm]
7	5	21425	2567.5	16QAM	1	12	12.00	11.79	11.4

Table G-16
Maximum Output Powers - Antenna 2

LTE Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Modulation	RB Size	RB Offset	4x4 DL MIMO Tx. Power [dBm]	Single Antenna Tx. Power [dBm]	Target Power [dBm]
25	5	26365	1882.5	256QAM	1	12	15.05	14.91	14.5

Table G-17
Maximum Output Powers - Antenna 3b

LTE Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Modulation	RB Size	RB Offset	4x4 DL MIMO Tx. Power [dBm]	Single Antenna Tx. Power [dBm]	Target Power [dBm]
41	20	40620	2593	QPSK	50	25	14.20	14.17	14.0

Table G-18
Maximum Output Powers - Antenna 4

LTE Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Modulation	RB Size	RB Offset	4x4 DL MIMO Tx. Power [dBm]	Single Antenna Tx. Power [dBm]	Target Power [dBm]
66	10	132022	1715	16QAM	1	49	14.96	14.78	14.6
30	10	27710	2310	QPSK	25	12	14.39	14.36	14.5
48	5	56715	3697.5	64QAM	1	12	12.60	12.56	11.9

FCC ID: BCGA2899	SAR EVALUATION REPORT	Approved by: Technical Manager
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G.3.2 LTE Band 71 as PCC

Table G-19
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC 1			DL Ant. Config.	SCC 2			DL Ant. Config.	SCC 3			DL Ant. Config.	SCC 4			DL Ant. Config.	Power					
											SCC Band	SCC BW [MHz]	SCC [DL] Ch.		SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]		SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band		SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]		SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	LTxPower with DL CA Enabled	LTE Single Carrier Tx Power (dBm)
CA [4A] 71A	LTE B71	10	131172	668	64QAM	1	0	68636	622	2x2	LTE B48	20	5640	3690	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	19.98	20.27		
CA [2A] [4A] 71A	LTE B71	10	131172	668	64QAM	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	19.47	20.27	
CA [4A] [4A] 71A	LTE B71	10	131172	668	64QAM	1	0	68636	622	2x2	LTE B2	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	-	-	-	-	19.50	20.27	
CA [2A] [6A] [6A] 71A	LTE B71	10	131172	668	64QAM	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2150	4x4	-	-	-	-	19.42	20.27	
CA [2A] [6A] 71A	LTE B71	10	131172	668	64QAM	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	19.76	20.27	
CA [2A] [7A] [7A] [6A] 71A	LTE B71	10	131172	668	64QAM	1	0	68636	622	2x2	LTE B66	20	66786	2145	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B7	20	3100	2655	4x4	20.19	20.27

G.3.3 LTE Band 12 as PCC

Table G-20
Maximum Output Powers

		PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power					
Combination	PCC Band	PCC BW [MHz]	PCC [UL] Freq. [MHz]	PCC [UL] Mod.	PCC [UL] RB	PCC [UL] RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	LTE TxPower with DL CA Enabled	LTE Single Carrier Tx Power (dBm)		
CA [2A] 12A (1)	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.82	19.82	
CA [4A] 12A (1)	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.76	19.82	
CA [4A] 12A (2)	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.76	19.82	
CA [2A] 12A (2)	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.76	19.82	
CA [2A] 12A (4A)	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B48	20	55950	3625	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.89	19.82	
CA [2A] [6A] (1)	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.73	19.82	
CA [2A] [6A] (2)	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.73	19.82	
CA [2C] 12A	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	702	1940.2	4x4	-	-	-	-	-	-	-	-	-	-	-	19.81	19.82
CA [2A] [4A]	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B48	20	55950	3625	4x4	LTE B66	20	56388	3644.8	4x4	-	-	-	-	-	-	-	-	-	-	-	19.83	19.82
CA [2A] [2A] [4A] 12A	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	19.80	19.82
CA [2A] 12A 12B	LTE B12	5	23055	707.5	64QAM	1	12	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	-	-	-	-	-	-	19.87	19.82
CA [2A] [4A] [4A] 12A	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	-	19.82	19.82
CA [2A] [4A] [4A] 12A	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	LTE B7	20	3100	2655	4x4	-	-	-	-	-	-	19.87	19.82
CA [2A] [4A] 12B	LTE B12	5	23055	707.5	64QAM	1	12	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	19.47	19.47
CA [2A] 12A [6A]	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66884	2164.8	4x4	-	-	-	-	-	-	19.82	19.82
CA [4A] [4A] 12B	LTE B12	5	23055	707.5	64QAM	1	12	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	-	19.47	19.47
CA [2A] [2A] [7A] 12A [6A]	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B7	20	3100	2655	4x4	LTE B66	20	66786	2145	4x4	-	19.92	19.82
CA [2A] [2A] 12A [3A] [6A]	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	-	19.89	19.82
CA [2A] [2A] 12A [6A] [6A]	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2150	4x4	-	19.91	19.82
CA [2A] [2A] 12A [3A] [6A] [6A]	LTE B12	10	23055	707.5	QPSK	1	0	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2150	4x4	-	19.77	19.82

G.3.4 LTE Band 13 as PCC

Table G-21
Maximum Output Powers

Combination	PCC										SCC 1		SCC 2				SCC 3				SCC 4				Power									
	PCC Band	PCC BW [MHz]	PCC [UL] Freq. [MHz]	PCC [UL] Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	LTE TxPower with DL CA	LTE Single Carrier Tx Power (dBm)			
CA [2A] [4A] 13A	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	20.46	20.53	
CA [2A] 13A [4A]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B48	20	55990	3625	2x2	-	-	-	-	-	-	-	-	-	-	-	20.46	20.53	
CA [4A] [4A] 13A	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	-	-	-	-	-	-	20.47	20.53	
CA [3A] [6A] [6A]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B48	20	55990	3625	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	20.54	20.53	
CA [2A] [7C] 13A	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B7	20	2902	2625.2	4x4	-	-	-	-	-	-	20.51	20.53	
CA [2A] 13A [4B]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B48	20	55990	3625	4x4	LTE B48	20	56388	3644.8	4x4	-	-	-	-	-	-	20.48	20.53	
CA [2A] 13A [6A]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	15	66786	2145	4x4	LTE B66	5	66879	2154.3	4x4	-	-	-	-	-	-	20.55	20.53	
CA [2A] 13A [6B]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66884	2164.8	4x4	-	-	-	-	-	-	20.59	20.53	
CA [2A] 13A [4A] [6A]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	20.59	20.53	
CA [3A] [6A] [6B]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B66	20	66786	2145	4x4	LTE B66	5	67381	2182.2	4x4	LTE B66	15	67381	2192.5	4x4	-	-	-	-	-	-	20.58	20.53	
CA [3A] [6A] [6C]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67326	2150	4x4	-	-	-	-	-	-	-	-	-	-	-	20.54	20.53	
CA [2A] [2A] 13A [6A] [6A]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67326	2150	4x4	-	-	20.44	20.53
CA [2A] [7A] [7A] 13A [6A]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	2890	2630	4x4	LTE B7	20	3100	2655	4x4	LTE B66	20	69538	2120	4x4	-	-	20.52	20.53
CA [3A] [4B] [6A]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B48	20	55990	3625	4x4	LTE B48	20	56388	3644.8	4x4	LTE B48	20	56388	3644.8	4x4	LTE B66	20	66786	2145	4x4	-	-	20.48	20.53
CA [3A] [4A]	LTE B13	10	21230	782	QPSK	1	0	5230	751	2x2	LTE B48	20	55990	3625	4x4	LTE B48	20	56388	3644.8	4x4	LTE B48	20	56388	3644.8	4x4	LTE B48	20	56388	3644.8	4x4	-	-	20.50	20.53

G.3.6 LTE Band 5 as PCC

Table G-23
Maximum Output Powers

																										Power								
Combination	PCC Band	PCC BW [MHz]	PCC [UL] Freq. [MHz]	Mod.	PCC 1					SCC 1					SCC 2					SCC 3					SCC 4					LTE TxPower with DL CA Enabled	LTE Single Carrier TxPower [dBm]			
					PCC UL RB	PCC UL Offset	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Freq. [MHz]	DL Ant. Config.										
CA_5A_7A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B7	20	3300	2655	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.98		
CA_5A_25A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B25	20	8365	1962.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.99		
CA_5A_41A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B41	20	40620	2593	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.96		
CA_17C_5A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	702	1960.2	4x4	-	-	-	-	-	-	-	-	-	-	-	-	19.99	
CA_14A_5B	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B5	5	2413	874.3	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	19.99	
CA_9B_30A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B5	5	2413	874.3	2x2	LTE B30	10	9820	2355	4x4	-	-	-	-	-	-	-	-	-	-	-	-	19.98	
CA_2A_2A_2A_4A_5A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	19.96	
CA_2A_2A_4A_5A_5A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	LTE B4	20	2360	2330	4x4	-	-	-	-	-	-	-	19.95	
CA_2A_5A_7C	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3300	2655	4x4	LTE B7	20	2602	2632.2	4x4	-	-	-	-	-	-	-	19.97	
CA_2A_5A_48A_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B48	20	55990	3625	4x4	LTE B66	20	66786	2545	4x4	-	-	-	-	-	-	-	19.96	
CA_2A_5A_48C	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B48	20	55990	3625	4x4	LTE B48	20	56188	3644.8	4x4	-	-	-	-	-	-	-	19.96	
CA_2A_5B_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B5	5	2413	874.3	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2545	4x4	-	-	-	-	-	-	-	19.97	
CA_5A_7A_66A_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B7	20	3300	2655	4x4	LTE B66	20	66786	2545	4x4	LTE B66	20	67236	2590	4x4	-	-	-	-	-	-	-	19.98	
CA_5A_48C_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B48	20	55990	3625	4x4	LTE B48	20	56188	3644.8	4x4	LTE B66	20	66786	2545	4x4	-	-	-	-	-	-	-	19.98	
CA_5A_48C	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B48	20	55990	3625	4x4	LTE B48	20	56188	3644.8	4x4	LTE B48	20	56188	3644.8	4x4	-	-	-	-	-	-	-	19.99	
CA_5A_66A_66B	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B66	20	66786	2545	4x4	LTE B66	15	67051	2162.5	4x4	LTE B66	5	67058	2163.2	4x4	-	-	-	-	-	-	-	19.97	
CA_5A_66A_66C	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B66	20	66786	2545	4x4	LTE B66	20	67236	2590	4x4	LTE B66	5	67058	2163.2	4x4	-	-	-	-	-	-	-	19.94	
CA_2A_2A_5A_30A_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2545	4x4	-	-	-	19.99
CA_2A_2A_5A_66A_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2545	4x4	LTE B66	20	67236	2590	4x4	-	-	-	19.98
CA_2A_2A_5A_66B	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	15	66786	2545	4x4	LTE B66	5	66879	2544.3	4x4	-	-	-	19.97
CA_2A_2A_5A_66C	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2545	4x4	LTE B66	20	66984	2544.8	4x4	-	-	-	19.99
CA_2A_5A_7A_7A_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B7	20	3300	2655	4x4	LTE B2	20	900	1960	4x4	LTE B7	20	3312	2660.2	4x4	LTE B66	20	66538	2330	4x4	-	-	-	19.98
CA_2A_5A_30A_66A_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2545	4x4	LTE B66	20	67236	2590	4x4	-	-	-	19.98
CA_2A_5A_48A_66A_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B48	20	55990	3625	4x4	LTE B66	20	66786	2545	4x4	LTE B66	20	67236	2590	4x4	-	-	-	19.97
CA_5A_7C_66A_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B7	20	3300	2655	4x4	LTE B7	20	2962	2626.2	4x4	LTE B66	20	66786	2545	4x4	LTE B66	20	67236	2590	4x4	-	-	-	19.98
CA_5A_48C_66A_66A	LTE B5	50	20525	836.5	QPSK	25	12	2525	881.5	2x2	LTE B48	20	55990	3625	4x4	LTE B48	20	56188	3644.8	4x4	LTE B66	20	66786	2545	4x4	LTE B66	20	67236	2590	4x4	-	-	-	19.99

G.3.7 LTE Band 26 as PCC

Table G-24
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				Power				
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA_7A_26A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	2x2	LTE B7	20	3100	2655	4x4	-	-	-	-	-	-	18.48	19.37
CA_25A_26A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	2x2	LTE B25	20	8365	1962.5	4x4	-	-	-	-	-	-	18.49	19.37
CA_26A_41A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	2x2	LTE B41	20	40620	2593	4x4	-	-	-	-	-	-	19.41	19.37
CA_7A_7A_26A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	2x2	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2630	4x4	-	18.62	19.37
CA_25A_25A_26A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	2x2	LTE B25	20	8365	1962.5	4x4	LTE B25	20	8590	1985	4x4	-	18.61	19.37
CA_26A_41C	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	2x2	LTE B41	20	40620	2593	4x4	LTE B41	20	40422	2573.2	4x4	-	19.38	19.37

FCC ID: BCGA2899	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX G: Page 9 of 13

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FCC ID: BCGA2899	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX G: Page 11 of 13

FCC ID: BCGA2899	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX G: Page 12 of 13

Table G-35
Maximum Output Powers LTE Band 48

Combination	PCC										SCC 1										SCC 2										SCC 3										Power	
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [DL] Freq. [MHz]	Mod.	PCC UL RB Offset	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [UL] Freq. [MHz]	Mod.	SCC UL RB Offset	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [UL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	DL Ant. Config.	ULCA Tx Power with DL CA Enabled (dBm)	ULCA Tx Power (dBm)														
CA [48C]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	-	-	-	-	-	-	-	-	12.03	11.97													
CA [48D]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	-	-	-	11.96	11.97													
CA [48E]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97											

G.5 Downlink Carrier Aggregation with Inter-band Uplink Carrier Aggregation enabled

This device supports inter-band uplink carrier aggregation (ULCA) with additional Carrier Aggregation configurations active in the downlink. Power measurements were performed with inter-band ULCA active and additional CA configurations active in the downlink for the configuration per Fall 2017 TCB Workshop Notes.

Per FCC Guidance, additional SAR measurements for these configurations were not required since their maximum output power was not more than 0.25 dB higher than the maximum output power for with only ULCA active.

G.5.1 DL Carrier Aggregation RF Conducted Powers

Table G-36
Maximum Output Powers

	Combination	PCC										SCC 1					SCC 2					SCC 3					Antenna		Power			
		PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [DL] Freq. [MHz]	Modulation	PCC UL RB Offset	PCC [UL] Ch. Freq. [MHz]	PCC [DL] Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [UL] Freq. [MHz]	Modulation	SCC UL RB Offset	SCC [UL] Ch. Freq. [MHz]	SCC [DL] Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [UL] Freq. [MHz]	Modulation	SCC UL RB Offset	SCC [UL] Ch. Freq. [MHz]	SCC [DL] Ant. Config.	PCC Ant.	SCC Ant.	Interleaved ULCA Tx Power with eUTRA CA active [dBm]	ULCA Tx Power [dBm]	ULCA Tx Power [dBm]	PCC Target	SCC Target
CA [48C]	CA [48C]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	-	-	-	-	-	-	-	-	12.03	11.97		
CA [48D]	CA [48D]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	-	-	-	11.96	11.97		
CA [48E]	CA [48E]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48F]	CA [48F]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48G]	CA [48G]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48H]	CA [48H]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48I]	CA [48I]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48J]	CA [48J]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48K]	CA [48K]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48L]	CA [48L]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48M]	CA [48M]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48N]	CA [48N]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48O]	CA [48O]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48P]	CA [48P]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48Q]	CA [48Q]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48R]	CA [48R]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48S]	CA [48S]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48T]	CA [48T]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48U]	CA [48U]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48V]	CA [48V]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48W]	CA [48W]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48X]	CA [48X]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48Y]	CA [48Y]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [48Z]	CA [48Z]	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	12.00	11.97	
CA [49C]	CA [49C]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	-	-	-	12.00	11.97		
CA [49D]	CA [49D]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	-	-	-	12.00	11.97		
CA [49E]	CA [49E]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49F]	CA [49F]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49G]	CA [49G]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49H]	CA [49H]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49I]	CA [49I]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49J]	CA [49J]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49K]	CA [49K]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49L]	CA [49L]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49M]	CA [49M]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49N]	CA [49N]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49O]	CA [49O]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49P]	CA [49P]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49Q]	CA [49Q]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49R]	CA [49R]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	
CA [49S]	CA [49S]	LTE B49	20	56405	3666.5	QPSK	50	56405	3666.5	4x4	LTE B49	20	56603	3686.3	QPSK	50	0	56603	3686.3	4x4	LTE B49	20	56403	3706.3	4x4	LTE B49	20	56403	3706.3	12.00	11.97	

G.5.2 DL Carrier Aggregation with DL 4x4 MIMO RF Conducted Powers

Note: 4x4 DL MIMO is only operating in the downlink. Uplink transmission is limited to a single output stream for each component carrier of ULCA.

Table G-37
Maximum Output Powers

	Combination	PCC										SCC 1										SCC 2										SCC 3										Power		Power	
		PCC Band	PCC BW [MHz]	PCC [UL] Ch. Freq. [MHz]	PCC [DL] Freq. [MHz]	Modulation	PCC UL RB Offset	PCC [UL] Ch. Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch. Freq. [MHz]	SCC [UL] Freq. [MHz]	Modulation	SCC UL RB Offset	SCC [UL] Ch. Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch. Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch. Freq. [MHz]	DL Ant. Config.	ULCA Tx Power with DL CA Enabled [dBm]	ULCA Tx Power [dBm]																		
CA [48C]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	-	-	-	-	-	12.03	11.97																		
CA [48D]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	-	11.96	11.97																	
CA [48E]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48F]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48G]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48H]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48I]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48J]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48K]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48L]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48M]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48N]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48O]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48P]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48Q]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48R]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48S]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48T]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48U]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48V]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48W]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48X]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48Y]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [48Z]	LTE B48	LTE B48	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B48	20	56203	3686.3	4x4	LTE B48	20	56203	3686.3	4x4	12.00	11.97													
CA [49A]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49B]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49C]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49D]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49E]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49F]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49G]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49H]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49I]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49J]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49K]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49L]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49M]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49N]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49O]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49P]	LTE B49	LTE B49	20	56207	3646.7	QPSK	50	56207	3646.7	4x4	LTE B49	20	56405	3666.5	QPSK	50	0	56405	3666.5	4x4	LTE B49	20	56203	3686.3	4x4	LTE B49	20	56203	3686.3	4x4	12.00	11.97													
CA [49Q]	LTE B49	LTE B49	20	56207	3646.7																																								