

APPENDIX F: DOWNLINK LTE CA RF CONDUCTED POWERS

1.1 LTE Downlink Only Carrier Aggregation Test Reduction Methodology

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number of component carriers (CCs) supported by the product implementation. Per April 2018 TCBC Workshop Notes, the following test reduction methodology was applied to determine the combinations required for conducted power measurements.

LTE DLCA Test Reduction Methodology:

- The supported combinations were arranged by the number of component carriers in columns.
- Any limitations on the PCC or SCC for each combination were identified alongside the combination (e.g. CA_2A-2A-4A-12A, but B12 can only be configured as a SCC).
- Power measurements were performed for "supersets" (LTE CA combinations with multiple components carriers) and any "subsets" (LTE CA combinations with fewer component carriers) that were not completely covered by the supersets.
- Only subsets that have the exact same components as a superset were excluded for measurement.
- When there were certain restrictions on component carriers that existed in the superset that were not applied for the subset, the subset configuration was additionally evaluated.
- Both inter-band and intra-band downlink carrier aggregation scenarios were considered.
- Downlink CA combinations for SISO and 4x4 Downlink MIMO operations were measured independently, per May 2017 TCBC Workshop notes.

Table 1 – Example of Exclusion Table for SISO Configurations

Index	ZCC	Supported Channel Bandwidth (MHz)		Restriction	Completely Covered by Measurement Superset
		CC1	CC2		
CCC RM1	CA [2C]	5, 10, 15, 20	5, 10, 15, 20	CCC RM1	No
CCC RM2	CA [2A]-2A	5, 10, 15, 20	5, 10, 15, 20	CCC RM2	No
CCC RM3	CA [2A]-2A	5, 10, 15, 20	5, 10, 15, 20	CCC RM3	No
CCC RM4	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM4	No
CCC RM5	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM5	No
CCC RM6	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM6	No
CCC RM7	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM7	No
CCC RM8	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM8	No
CCC RM9	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM9	No
CCC RM10	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM10	No
CCC RM11	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM11	No
CCC RM12	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM12	No
CCC RM13	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM13	No
CCC RM14	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM14	No
CCC RM15	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM15	No
CCC RM16	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM16	No
CCC RM17	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM17	No
CCC RM18	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM18	No
CCC RM19	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM19	No
CCC RM20	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM20	No
CCC RM21	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM21	No
CCC RM22	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM22	No
CCC RM23	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM23	No
CCC RM24	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM24	No
CCC RM25	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM25	No
CCC RM26	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM26	No
CCC RM27	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM27	No
CCC RM28	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM28	No
CCC RM29	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM29	No
CCC RM30	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM30	No
CCC RM31	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM31	No
CCC RM32	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM32	No
CCC RM33	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM33	No
CCC RM34	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM34	No
CCC RM35	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM35	No
CCC RM36	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM36	No
CCC RM37	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM37	No
CCC RM38	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM38	No
CCC RM39	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM39	No
CCC RM40	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM40	No
CCC RM41	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM41	No
CCC RM42	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM42	No
CCC RM43	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM43	No
CCC RM44	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM44	No
CCC RM45	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM45	No
CCC RM46	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM46	No
CCC RM47	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM47	No
CCC RM48	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM48	No
CCC RM49	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM49	No
CCC RM50	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM50	No
CCC RM51	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM51	No
CCC RM52	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM52	No
CCC RM53	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM53	No
CCC RM54	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM54	No
CCC RM55	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM55	No
CCC RM56	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM56	No
CCC RM57	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM57	No
CCC RM58	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM58	No
CCC RM59	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM59	No
CCC RM60	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM60	No
CCC RM61	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM61	No
CCC RM62	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM62	No
CCC RM63	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM63	No
CCC RM64	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM64	No
CCC RM65	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM65	No
CCC RM66	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM66	No
CCC RM67	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM67	No
CCC RM68	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM68	No
CCC RM69	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM69	No
CCC RM70	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM70	No
CCC RM71	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM71	No
CCC RM72	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM72	No
CCC RM73	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM73	No
CCC RM74	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM74	No
CCC RM75	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM75	No
CCC RM76	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM76	No
CCC RM77	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM77	No
CCC RM78	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM78	No
CCC RM79	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM79	No
CCC RM80	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM80	No
CCC RM81	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM81	No
CCC RM82	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM82	No
CCC RM83	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM83	No
CCC RM84	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM84	No
CCC RM85	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM85	No
CCC RM86	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM86	No
CCC RM87	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM87	No
CCC RM88	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM88	No
CCC RM89	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM89	No
CCC RM90	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM90	No
CCC RM91	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM91	No
CCC RM92	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM92	No
CCC RM93	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM93	No
CCC RM94	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM94	No
CCC RM95	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM95	No
CCC RM96	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM96	No
CCC RM97	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM97	No
CCC RM98	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM98	No
CCC RM99	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM99	No
CCC RM100	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM100	No

Table 2 – Example of Exclusion Table for 4x4 Downlink MIMO Configurations

Index	ZCC	Supported Channel Bandwidth (MHz)		Restriction	Completely Covered by Measurement Superset
		CC1	CC2		
CCC RM1	CA [2C]	5, 10, 15, 20	5, 10, 15, 20	CCC RM1	No
CCC RM2	CA [2A]-2A	5, 10, 15, 20	5, 10, 15, 20	CCC RM2	No
CCC RM3	CA [2A]-12A	5, 10, 15, 20	5, 10, 15, 20	No	
CCC RM4	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	CCC RM5	No
CCC RM5	CA [2A]-14A (2)	5, 10, 15, 20	5, 10, 15, 20	No	
CCC RM6	CA [2A]-5A	5, 10, 15, 20	5, 10	No	
CCC RM7	CA [2A]-12A (1)	5, 10, 15, 20	5, 10	CCC RM8	No
CCC RM8	CA [2A]-5A	5, 10, 15, 20	5, 10	CCC RM9	No
CCC RM9	CA [2A]-12A (1)	5, 10, 15, 20	5, 10	CCC RM10	No
CCC RM10	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM11	No
CCC RM11	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM12	No
CCC RM12	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM13	No
CCC RM13	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM14	No
CCC RM14	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM15	No
CCC RM15	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM16	No
CCC RM16	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM17	No
CCC RM17	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM18	No
CCC RM18	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM19	No
CCC RM19	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM20	No
CCC RM20	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM21	No
CCC RM21	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM22	No
CCC RM22	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM23	No
CCC RM23	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM24	No
CCC RM24	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM25	No
CCC RM25	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM26	No
CCC RM26	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM27	No
CCC RM27	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM28	No
CCC RM28	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM29	No
CCC RM29	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM30	No
CCC RM30	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM31	No
CCC RM31	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM32	No
CCC RM32	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM33	No
CCC RM33	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM34	No
CCC RM34	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM35	No
CCC RM35	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM36	No
CCC RM36	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM37	No
CCC RM37	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM38	No
CCC RM38	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM39	No
CCC RM39	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM40	No
CCC RM40	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM41	No
CCC RM41	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM42	No
CCC RM42	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM43	No
CCC RM43	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM44	No
CCC RM44	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM45	No
CCC RM45	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM46	No
CCC RM46	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM47	No
CCC RM47	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM48	No
CCC RM48	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM49	No
CCC RM49	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM50	No
CCC RM50	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM51	No
CCC RM51	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM52	No
CCC RM52	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM53	No
CCC RM53	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM54	No
CCC RM54	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM55	No
CCC RM55	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM56	No
CCC RM56	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM57	No
CCC RM57	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM58	No
CCC RM58	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM59	No
CCC RM59	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM60	No
CCC RM60	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM61	No
CCC RM61	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM62	No
CCC RM62	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM63	No
CCC RM63	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM64	No
CCC RM64	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM65	No
CCC RM65	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM66	No
CCC RM66	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM67	No
CCC RM67	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM68	No
CCC RM68	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM69	No
CCC RM69	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM70	No
CCC RM70	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM71	No
CCC RM71	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM72	No
CCC RM72	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM73	No
CCC RM73	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM74	No
CCC RM74	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM75	No
CCC RM75	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM76	No
CCC RM76	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM77	No
CCC RM77	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM78	No
CCC RM78	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM79	No
CCC RM79	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM80	No
CCC RM80	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM81	No
CCC RM81	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM82	No
CCC RM82	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM83	No
CCC RM83	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM84	No
CCC RM84	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM85	No
CCC RM85	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM86	No
CCC RM86	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM87	No
CCC RM87	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM88	No
CCC RM88	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM89	No
CCC RM89	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM90	No
CCC RM90	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM91	No
CCC RM91	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM92	No
CCC RM92	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM93	No
CCC RM93	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM94	No
CCC RM94	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM95	No
CCC RM95	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM96	No
CCC RM96	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM97	No
CCC RM97	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM98	No
CCC RM98	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM99	No
CCC RM99	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM100	No
CCC RM100	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM101	No
CCC RM101	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM102	No
CCC RM102	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM103	No
CCC RM103	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM104	No
CCC RM104	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM105	No
CCC RM105	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM106	No
CCC RM106	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM107	No
CCC RM107	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM108	No
CCC RM108	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM109	No
CCC RM109	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM110	No
CCC RM110	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM111	No
CCC RM111	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM112	No
CCC RM112	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM113	No
CCC RM113	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM114	No
CCC RM114	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM115	No
CCC RM115	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM116	No
CCC RM116	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM117	No
CCC RM117	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM118	No
CCC RM118	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM119	No
CCC RM119	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM120	No
CCC RM120	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM121	No
CCC RM121	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM122	No
CCC RM122	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM123	No
CCC RM123	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM124	No
CCC RM124	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM125	No
CCC RM125	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM126	No
CCC RM126	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM127	No
CCC RM127	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM128	No
CCC RM128	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM129	No
CCC RM129	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM130	No
CCC RM130	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM131	No
CCC RM131	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM132	No
CCC RM132	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM133	No
CCC RM133	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM134	No
CCC RM134	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM135	No
CCC RM135	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM136	No
CCC RM136	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM137	No
CCC RM137	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM138	No
CCC RM138	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM139	No
CCC RM139	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM140	No
CCC RM140	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM141	No
CCC RM141	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM142	No
CCC RM142	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM143	No
CCC RM143	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM144	No
CCC RM144	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM145	No
CCC RM145	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM146	No
CCC RM146	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM147	No
CCC RM147	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM148	No
CCC RM148	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM149	No
CCC RM149	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM150	No
CCC RM150	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM151	No
CCC RM151	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM152	No
CCC RM152	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM153	No
CCC RM153	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM154	No
CCC RM154	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM155	No
CCC RM155	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM156	No
CCC RM156	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM157	No
CCC RM157	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM158	No
CCC RM158	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM159	No
CCC RM159	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM160	No
CCC RM160	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM161	No
CCC RM161	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM162	No
CCC RM162	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM163	No
CCC RM163	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM164	No
CCC RM164	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM165	No
CCC RM165	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM166	No
CCC RM166	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM167	No
CCC RM167	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM168	No
CCC RM168	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM169	No
CCC RM169	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM170	No
CCC RM170	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM171	No
CCC RM171	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM172	No
CCC RM172	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM173	No
CCC RM173	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM174	No
CCC RM174	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM175	No
CCC RM175	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM176	No
CCC RM176	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM177	No
CCC RM177	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM178	No
CCC RM178	CA [2A]-13A	5, 10, 15, 20	5, 10	CCC RM179	No
CCC RM179	CA [2A]-13A	5			

1.2 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.

This device supports LAA with downlink carrier aggregation only. It uses carrier aggregation in the downlink to combine LTE in the unlicensed spectrum (i.e. LTE Band 46) with LTE in the licensed band (served as PCC). All uplink communications and acknowledgements on the PCC remain identical to specifications when downlink carrier aggregation is inactive.

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. 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.

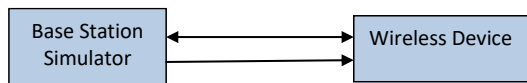


Figure 1
DL CA Power Measurement Setup

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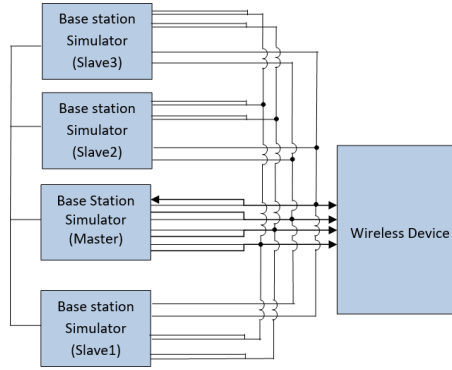


Figure 2
DL CA with DL 4x4 MIMO Power Measurement Setup

1.3 Downlink Carrier Aggregation RF Conducted Powers

1.3.1 LTE Band 12 as PCC

Table 1
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	PCC				SCC 1			SCC 2			SCC 3			Power	
					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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	-	-	-	-	25.00	25.04
CA 2A-12A-30A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	25.07	25.04
CA 2A-2A-7A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	25.00	25.04
CA 2A-7A-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	25.06	25.04

1.3.2 LTE Band 13 as PCC

Table 2
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	PCC				SCC 1			SCC 2			SCC 3			Power	
					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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	-	-	-	-	25.28	25.00
CA 4A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B4	20	2175	2132.5	-	-	-	-	25.99	25.00
CA 13A-66A	LTE B13	5	23230	782	QPSK	1	24	5230	751	LTE B66	20	66786	2145	-	-	-	-	25.11	25.11
CA 2A-13A-66A	LTE B13	5	23230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B66	20	66786	2145	25.16	25.11
CA 13A-66A-66A	LTE B13	5	23230	782	QPSK	1	24	5230	751	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.18	25.11
CA 2A-7A-7A-13A	LTE B13	5	23230	782	QPSK	1	24	5230	751	LTE B2	20	900	1960	LTE B7	20	3100	2655	25.17	25.11

1.3.3 LTE Band 5 as PCC

Table 3
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	PCC				SCC 1			SCC 2			SCC 3			Power	
					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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 5A-7A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B7	20	3100	2655	-	-	-	-	25.38	25.33
CA 5A-38A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B38	20	38000	2595	-	-	-	-	25.24	25.33
CA 5A-7A-7A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B7	20	3100	2655	LTE B7	20	2850	2630	25.39	25.33
CA 5A-7C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B7	20	3100	2655	LTE B7	20	2850	2635.2	25.41	25.33
CA 5A-66C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B66	20	66096	2145	LTE B66	20	66094	2154.8	25.28	25.33
CA 2A-4A-5A-30A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	25.25	25.33
CA 2A-2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	25.30	25.33
CA 2A-5A-30A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	25.35	25.33
CA 2A-5A-30A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	25.30	25.33

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1.3.4 LTE Band 66 as PCC

Table 4
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC										SCC 1										SCC 2										SCC 3										SCC 4										SCC 5										Power	
			SCC BW [MHz]	SCC (DL) Freq. [MHz]	Mod.	PCC UAR RB	PCC UAR 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]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	UE Tx Power [dBm]	LTE Single Carrier Power [dBm]																													
CA_2A-2Aa	LTE-B86	20	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	1866	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.20	21.20																													
CA_13A-6Aa (1)	LTE-B20	20	13252.7	1770	QPSK	1	0	47088	2170	LTE-B20	20	6000	737.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.17	21.17																												
CA_13A-6Aa (2)	LTE-B86	20	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	737.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.17	21.17																												
CA_6Bb	LTE-B86	5	13252.7	1745	QPSK	1	0	46788	2145	LTE-B86	10	6000	2157.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.08	21.08																												
CA_5A-6Bb	LTE-B86	20	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	2150.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.05	21.05																												
CA_13A-6Aa-6Aa	LTE-B86	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	1813.5	5210	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	1813.5	5210	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	1813.5	5210	21.05	21.05																									
CA_4Aa-6Aa	LTE-B86	20	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	21.05	21.05																								
CA_4C-6Aa	LTE-B86	20	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	20	6000	5557.5	1866	21.05	21.05																								
CA_2A-2Aa-6Bb	LTE-B86	20	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	2150.2	1866	20	6000	1866	1813.5	5210	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	1866	1813.5	5210	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	1866	1813.5	5210	21.05	21.05																	
CA_2A-2Aa-6Aa-6Aa	LTE-B86	20	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	2150.2	1866	20	6000	1866	1813.5	5210	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	1866	1813.5	5210	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	1866	1813.5	5210	21.05	21.05																	
CA_2A-2Aa-6Aa-6Aa-6Aa	LTE-B86	20	13252.7	1770	QPSK	1	0	47088	2170	LTE-B86	20	6000	2150.2	18																																																		

1.3.5 LTE Band 30 as PCC

Table 5
Maximum Output Powers

[illegible]

1.3.6 LTE Band 7 as PCC

Table 6
Maximum Output Powers

[illegible]

1.3.7 LTE Band 41 as PCC

Table 7
Maximum Output Powers

Combination	PCC									SCC 1				Power	
	PCC Band	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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 41C (1)	LTE B41	5	39750	2506	QPSK	1	24	39750	2506	LTE B41	20	39867	2517.7	24.63	24.65

1.4 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 1.2 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.

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1.4.1 LTE 4x4 MIMO DL Standalone Powers

Table 8
Maximum Output Powers

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	20	132572	1770	QPSK	1	0	23.18	23.21	23.0
25	3	26675	1913.5	QPSK	1	7	23.34	23.30	23.0
7	15	20825	2507.5	QPSK	1	36	23.68	23.53	23.0
30	5	27710	2310	QPSK	1	12	23.87	23.78	23.2
41	5	39750	2506	QPSK	1	24	24.77	24.65	24.0

1.4.2 LTE Band 12 as PCC

Table 9
Maximum Output Powers

Combination	PCC Band	PCC										SCC 1				SCC 2				SCC 3				Power			
		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.	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 [2A]-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	25.19	25.04
CA [2A]-12A-30A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	2x2	-	-	-	-	-	25.02	25.04
CA [2A]-12A-[30A]	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	-	-	-	-	-	24.86	25.04
CA [2A]-12A-[30A]	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	4x4	-	-	-	-	-	24.98	25.04
CA [2A]-2A-7A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B7	20	3100	2655	2x2	25.24	25.04
CA [2A]-2A-[7A]-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	2x2	LTE B2	20	700	1940	2x2	LTE B7	20	3100	2655	4x4	25.29	25.04
CA [2A]-2A-7A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B7	20	3100	2655	2x2	25.21	25.04
CA [2A]-2A-[7A]-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B7	20	3100	2655	4x4	25.24	25.04
CA [2A]-[2A]-7A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B7	20	3100	2655	4x4	25.07	25.04
CA [2A]-7A-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	2x2	25.04	25.04
CA [2A]-7A-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B2	20	900	1960	2x2	LTE B7	20	3100	2655	4x4	25.09	25.04
CA [2A]-[7A]-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	2x2	LTE B12	5	5047	732.7	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	25.10	25.04

1.4.3 LTE Band 13 as PCC

Table 10
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				SCC 2				SCC 3				Power				
											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 Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA [2A]-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	25.24	25.05	
CA [4A]-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	25.20	25.05
CA [2A]-13A-66A	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	-	-	-	-	-	25.14	25.11
CA [2A]-13A-[66A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B2	20	900	1960	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	25.18	25.11
CA [2A]-13A-[66A]	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	25.10	25.11
CA [13A]-[66A]-66A	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	2x2	-	-	-	-	-	25.23	25.11
CA [2A]-7A-13A	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	2x2	LTE B7	20	2850	2630	2x2	24.89	25.11
CA [2A]-[7A]-13A	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B2	20	900	1960	2x2	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2630	2x2	25.09	25.11
CA [2A]-[7A]-13A	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2630	2x2	24.98	25.11
CA [2A]-[2A]-[7A]-13A	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B2	20	900	1960	2x2	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2630	4x4	25.11	25.11
CA [2A]-[2A]-[7A]-13A	LTE B13	5	23230	782	QPSK	1	24	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2630	4x4	25.11	25.11

1.4.4 LTE Band 5 as PCC

Table 11
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
										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]
CA [5A]-7A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B7	20	3100	2655	4x4	-	-	-	-	-	-	-	-	-	-	-	25.26	25.31
CA [2A]-4A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	-	25.44	25.31
CA [2A]-4A-5A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	25.40	25.31
CA [4A]-5A-[30A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B4	20	2175	2132.5	2x2	LTE B30	10	9820	2355	4x4	-	-	-	-	-	-	24.97	25.31
CA [5A]-7A-7A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2630	2x2	-	-	-	-	-	-	25.22	25.31
CA [5A]-7A-7A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2630	4x4	-	-	-	-	-	-	25.30	25.31
CA [5A]-7C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B7	20	3100	2655	4x4	LTE B7	20	2850	2632	4x4	-	-	-	-	-	-	25.24	25.31
CA [5A]-66C	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2144.8	4x4	-	-	-	-	-	-	25.27	25.31
CA [2A]-5A-30A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	2x2	LTE B66	20	66786	2145	2x2	24.92	25.31	
CA [2A]-5A-30A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	2x2	24.97	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	2x2	LTE B66	20	66786	2145	4x4	25.00	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	2x2	25.01	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.94	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.91	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.90	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.89	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.88	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.87	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.86	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.85	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.84	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.83	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.82	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.81	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.80	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.79	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.78	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.77	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.76	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.75	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.74	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.73	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.72	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.71	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.70	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.69	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.68	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.67	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.66	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.65	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.64	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.63	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.62	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.61	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.60	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.59	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.58	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	24.57	25.31	
CA [2A]-5A-30A-[66A]	LTE B5	10	20525	836.5																								

1.4.5 LTE Band 66 as PCC

Table 12
Maximum Output Powers

Cable	PCC Band	PCC BW [MHz]	PCC [kHz]	PCC [dBm]	Mod	PCC Uplink RB	PCC Uplink RB Offset	PCC [dBm]	PCC [dBm]	DL Ant. Config	SCS 1				SCS 2				SCS 3				SCS 4				Power
											SCS [kHz]	DL Ant. Config	SCS [kHz]	SCS [dBm]	DL Ant. Config	SCS [kHz]	SCS [dBm]	DL Ant. Config	SCS [kHz]	SCS [dBm]	DL Ant. Config						
CA-2A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A	LTE-BW	20	1252.72	1770	QPSK	1	0	870558	2320	222	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	LTE-B2	20	880	1560	44A	23.12	23.12
CA-2A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-16A-1																											

1.4.6 LTE Band 30 as PCC

Table 13
Maximum Output Powers

Combination	PCC Band	PCC										SCC 1				SCC 2				SCC 3				Power			
		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.	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 2A-4A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	23.78	23.78
CA 12A-12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	23.72	23.78
CA 2A-12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	2x2	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	23.76	23.78
CA 12A-12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	23.75	23.78
CA 2A-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	2x2	LTE B29	10	9715	722.5	2x2	-	-	-	-	-	23.71	23.78
CA 4A-5A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B4	20	2175	2132.5	2x2	LTE B5	10	2525	881.5	2x2	-	-	-	-	-	23.74	23.78
CA 4A-12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B4	20	2175	2132.5	2x2	LTE B12	10	5095	737.5	2x2	-	-	-	-	-	23.78	23.78
CA 4A-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B4	20	2175	2132.5	2x2	LTE B29	10	9715	722.5	2x2	-	-	-	-	-	23.76	23.78
CA 12A-4A-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	LTE B29	10	9715	722.5	2x2	23.74	23.78
CA 12A-14A-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	LTE B29	10	9715	722.5	2x2	23.69	23.78
CA 12A-5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	2x2	23.72	23.78
CA 2A-5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	2x2	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	2x2	23.74	23.78
CA 2A-5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	2x2	23.77	23.78
CA 12A-5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	4x4	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	2x2	23.79	23.78
CA 2A-5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	2x2	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	2x2	23.74	23.78
CA 12A-5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	4x4	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	2x2	23.77	23.78
CA 12A-12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	23.69	23.78
CA 2A-12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	2x2	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	23.69	23.78
CA 2A-12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	2x2	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	23.74	23.78
CA 12A-12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	23.75	23.78
CA 2A-12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	23.73	23.78
CA 12A-12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	23.72	23.78
CA 12A-12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	23.81	23.78
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.68	23.78
CA 2A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.80	23.78
CA 2A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.71	23.78
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.74	23.78
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.70	23.78
CA 2A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.79	23.78
CA 2A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.73	23.78
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.74	23.78
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.78	23.78
CA 5A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.75	23.78
CA 5A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.72	23.78
CA 5A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.76	23.78
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.72	23.78
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.73	23.78
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.71	23.78
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	LTE B12	10	5095	737.5	2x2	LTE B66	20	66786	2145	2x2	LTE B66	20	66786	2145	2x2	23.76	23.78

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1.4.8 LTE Band 41 as PCC

Table 15
Maximum Output Powers

Combination	PCC										SCC 1					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.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA [41C] (1)	LTE B41	5	39750	2506	QPSK	1	24	39750	2506	4x4	LTE B41	20	39867	2517.7	4x4	24.62	24.65

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