

APPENDIX G: LTE DOWNLINK CA RF CONDUCTED POWERS

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 G-1 – Example of Exclusion Table for SISO Configurations

Index	CC	Supported Channel Bandwidth (MHz)	Restriction	Completely Covered by Measurement Superset	Index	CC	Supported Channel Bandwidth (MHz)	Restriction	Completely Covered by Measurement Superset	Index	CC	Supported Channel Bandwidth (MHz)	Restriction	Completely Covered by Measurement Superset	Index	CC	Supported Channel Bandwidth (MHz)	Restriction	Completely Covered by Measurement Superset
CC1	CA_2A	5, 10, 15, 20		Yes	CC24	CA_2A-2A-4A	5, 10, 15, 20		Yes	CC41	CA_2A-2A-4A	5, 10, 15, 20		Yes	CC58	CA_2A-2A-4A-6A	5, 10, 15, 20		Yes
CC2	CA_2A-2A	5, 10, 15, 20		Yes	CC25	CA_2A-2A-4A-6A	5, 10, 15, 20		Yes	CC42	CA_2A-2A-4A-6A-8A	5, 10, 15, 20		Yes	CC59	CA_2A-2A-4A-6A-8A-10A	5, 10, 15, 20		Yes
CC3	CA_2A-2A-2A	5, 10, 15, 20		Yes	CC26	CA_2A-2A-4A-6A-8A	5, 10, 15, 20		Yes	CC43	CA_2A-2A-4A-6A-8A-10A	5, 10, 15, 20		Yes	CC60	CA_2A-2A-4A-6A-8A-10A-12A	5, 10, 15, 20		Yes
CC4	CA_2A-2A-2A-2A	5, 10, 15, 20		Yes	CC27	CA_2A-2A-4A-6A-8A-10A	5, 10, 15, 20		Yes	CC44	CA_2A-2A-4A-6A-8A-10A-12A	5, 10, 15, 20		Yes	CC61	CA_2A-2A-4A-6A-8A-10A-12A-14A	5, 10, 15, 20		Yes
CC5	CA_2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC28	CA_2A-2A-4A-6A-8A-10A-12A	5, 10, 15, 20		Yes	CC45	CA_2A-2A-4A-6A-8A-10A-12A-14A	5, 10, 15, 20		Yes	CC62	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A	5, 10, 15, 20		Yes
CC6	CA_2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC29	CA_2A-2A-4A-6A-8A-10A-12A-14A	5, 10, 15, 20		Yes	CC46	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A	5, 10, 15, 20		Yes	CC63	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A	5, 10, 15, 20		Yes
CC7	CA_2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC30	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A	5, 10, 15, 20		Yes	CC47	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A	5, 10, 15, 20		Yes	CC64	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A	5, 10, 15, 20		Yes
CC8	CA_2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC31	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A	5, 10, 15, 20		Yes	CC48	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A	5, 10, 15, 20		Yes	CC65	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A	5, 10, 15, 20		Yes
CC9	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC32	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A	5, 10, 15, 20		Yes	CC49	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A	5, 10, 15, 20		Yes	CC66	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A	5, 10, 15, 20		Yes
CC10	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC33	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A	5, 10, 15, 20		Yes	CC50	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A	5, 10, 15, 20		Yes	CC67	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A	5, 10, 15, 20		Yes
CC11	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC34	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A	5, 10, 15, 20		Yes	CC51	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A	5, 10, 15, 20		Yes	CC68	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A	5, 10, 15, 20		Yes
CC12	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC35	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A	5, 10, 15, 20		Yes	CC52	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A	5, 10, 15, 20		Yes	CC69	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A	5, 10, 15, 20		Yes
CC13	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC36	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A	5, 10, 15, 20		Yes	CC53	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A	5, 10, 15, 20		Yes	CC70	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A	5, 10, 15, 20		Yes
CC14	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC37	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A	5, 10, 15, 20		Yes	CC54	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A	5, 10, 15, 20		Yes	CC71	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A	5, 10, 15, 20		Yes
CC15	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC38	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A	5, 10, 15, 20		Yes	CC55	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A	5, 10, 15, 20		Yes	CC72	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A	5, 10, 15, 20		Yes
CC16	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC39	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A	5, 10, 15, 20		Yes	CC56	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A	5, 10, 15, 20		Yes	CC73	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A	5, 10, 15, 20		Yes
CC17	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC40	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A	5, 10, 15, 20		Yes	CC57	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A	5, 10, 15, 20		Yes	CC74	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A	5, 10, 15, 20		Yes
CC18	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC41	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A	5, 10, 15, 20		Yes	CC58	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A	5, 10, 15, 20		Yes	CC75	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A	5, 10, 15, 20		Yes
CC19	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC42	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A	5, 10, 15, 20		Yes	CC59	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A	5, 10, 15, 20		Yes	CC76	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A	5, 10, 15, 20		Yes
CC20	CA_2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A-2A	5, 10, 15, 20		Yes	CC43	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A	5, 10, 15, 20		Yes	CC60	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A	5, 10, 15, 20		Yes	CC77	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A-46A	5, 10, 15, 20		Yes
CC21	CA_2A-2A	5, 10, 15, 20		Yes	CC44	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A	5, 10, 15, 20		Yes	CC61	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A-46A	5, 10, 15, 20		Yes	CC78	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A-46A-48A	5, 10, 15, 20		Yes
CC22	CA_2A-2A	5, 10, 15, 20		Yes	CC45	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A-46A	5, 10, 15, 20		Yes	CC62	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A-46A-48A	5, 10, 15, 20		Yes	CC79	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A-46A-48A-50A	5, 10, 15, 20		Yes
CC23	CA_2A-2A	5, 10, 15, 20		Yes	CC46	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A-46A-48A	5, 10, 15, 20		Yes	CC63	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A-46A-48A-50A	5, 10, 15, 20		Yes	CC80	CA_2A-2A-4A-6A-8A-10A-12A-14A-16A-18A-20A-22A-24A-26A-28A-30A-32A-34A-36A-38A-40A-42A-44A-46A-48A-50A-52A	5, 10, 15, 20		Yes

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

Index	2CC	Supported Channel Bandwidth (MHz)		Restriction	Completely Covered by Measurement Superset	Index	3CC	Supported Channel Bandwidth (MHz)			Restriction	Completely Covered by Measurement Superset	Index	4CC	Supported Channel Bandwidth (MHz)				Restriction	Completely Covered by Measurement Superset	
		CC1	CC2					CC1	CC2	CC3					CC1	CC2	CC3	CC4			
CC#RM1	CA_2A	5, 10, 15, 20	5, 10, 15, 20		CC#RM6	CC#RM1	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No		CC#RM1	CA_2A-1B-6A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No		
CC#RM2	CA_2A-2A	5, 10, 15, 20	5, 10, 15, 20		CC#RM7	CC#RM2	CA_2A-2A-5A	5, 10, 15, 20	5, 10, 15, 20	5, 10	No		CC#RM2	CA_2A-5B-2A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20	No	
CC#RM3	CA_2A-2A-2A	5, 10, 15, 20	5, 10, 15, 20		No	CC#RM3	CA_2A-2A-12A	5, 10, 15, 20	5, 10, 15, 20	5, 10	No		CC#RM3	CA_2A-5A-6A	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15	5, 10, 15	No	
CC#RM4	CA_2A-2A-12A	5, 10, 15, 20	5, 10, 15, 20		CC#RM5	CC#RM4	CA_2A-2A-13A	5, 10, 15, 20	5, 10, 15, 20	5, 10	No		CC#RM4	CA_2A-5A-5A	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15	5, 10, 15	No	
CC#RM5	CA_2A-2A-14A-7A	5, 10, 15, 20	5, 10, 15, 20		CC#RM6	CC#RM5	CA_2A-2A-30A	5, 10, 15, 20	5, 10, 15, 20	5, 10	No		CC#RM5	CA_2A-5A-6A-6C	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	
CC#RM6	CA_2A-2A-5A	5, 10, 15, 20	5, 10		CC#RM8	CC#RM6	CA_2C-6A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No		CC#RM6	CA_2A-5A-6A-6C	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No	
CC#RM7	CA_2A-2A-1A-11	5, 10, 15, 20	5, 10		CC#RM9	CC#RM7	CA_2C-6A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No										
CC#RM8	CA_2A-2A-3A	5, 10, 15, 20	5, 10		CC#RM9	CC#RM8	CA_2C-11A-6A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No										
CC#RM9	CA_2A-2A-7A	5, 10	5, 10		CC#RM10	CC#RM9	CA_2A-2A-6A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No										
CC#RM10	CA_2A-2A-9A-7	5, 10, 15, 20	5, 10		CC#RM12	CC#RM10	CA_2A-2A-6A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No										
CC#RM11	CA_2A-2A-20A	5, 10	5, 10		CC#RM13	CC#RM11	CA_2A-2A-7A-7A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No										
CC#RM12	CA_2A-2A-6A-2	5, 10, 15, 20	5, 10, 15, 20		CC#RM14	CC#RM12	CA_2A-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10	B29 SCC Only										
CC#RM13	CA_2A-6A-2	5, 10, 15, 20	5, 10, 15, 20		CC#RM15	CC#RM13	CA_2A-4A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No										
CC#RM14	CA_2A-6A-4	5, 10, 15, 20	5, 10, 15, 20		CC#RM16	CC#RM14	CA_2A-5A-7	5, 10, 15, 20	5, 10, 15, 20	5, 10	CC#RM16										
CC#RM15	CA_2A-6A	5, 10, 15, 20	5, 10, 15, 20		CC#RM17	CC#RM15	CA_2A-5A-6A	5, 10, 15, 20	5, 10	5, 10, 15, 20	No										
CC#RM16	CA_2A-7A	5, 10, 15, 20	5, 10, 15, 20		CC#RM18	CC#RM16	CA_2A-5A-6A	5, 10, 15, 20	5, 10	5, 10, 15, 20	No										
CC#RM17	CA_2A-6A-6A-4	5, 10	5, 10, 15, 20		CC#RM19	CC#RM17	CA_2A-12A-6A	5, 10, 15, 20	5, 10	5, 10, 15, 20	No										
CC#RM18	CA_1A-6A-6A	5, 10	5, 10, 15, 20		CC#RM20	CC#RM18	CA_2A-13A-6A	5, 10, 15, 20	5, 10	5, 10, 15, 20	No										
CC#RM19	CA_1A-6A-6A	5, 10	5, 10, 15, 20		CC#RM21	CC#RM19	CA_2A-13A-6A	5, 10, 15, 20	5, 10	5, 10, 15, 20	No										
CC#RM20	CA_1A-6A-6A	5, 10, 15	5, 10, 15		CC#RM22	CC#RM20	CA_2A-30A-6A	5, 10, 15, 20	5, 10	5, 10, 15, 20	No										
CC#RM21	CA_1A-6A-6C	5, 10, 15, 20	5, 10, 15, 20		CC#RM23	CC#RM21	CA_2A-6A-6B	5, 10, 15, 20	5, 10, 15	5, 10, 15	CC#RM23										
CC#RM22	CA_1A-6A-6A	5, 10, 15, 20	5, 10, 15, 20		CC#RM24	CC#RM22	CA_2A-6A-6B	5, 10, 15, 20	5, 10, 15	5, 10, 15	CC#RM24										
CC#RM23	CA_1A-6A-6A	5, 10, 15, 20	5, 10, 15, 20		CC#RM25	CC#RM23	CA_2A-6A-6B	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM25										
					CC#RM26	CC#RM24	CA_2A-6A-6C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM26										
					CC#RM27	CC#RM25	CA_2A-6A-6C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM27										
					CC#RM28	CC#RM26	CA_2A-6A-6A-6A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No										
					CC#RM29	CC#RM27	CA_2A-6A-6A-6A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No										
						CC#RM30	CA_2A-6A-6A-6A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	No										

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.

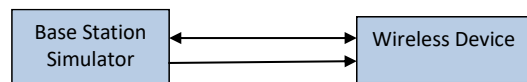


Figure G-1
DL CA Power Measurement Setup

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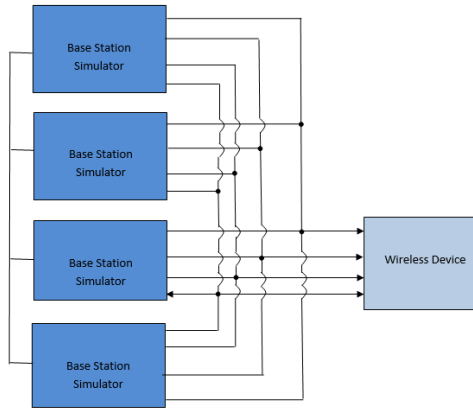


Figure G-2
DL CA with DL 4x4 MIMO Power Measurement Setup

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				SCC 1				SCC 2				SCC 3				SCC 4				Power					
			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 DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 4B-71A	LTE B71	20	13297	680.5	SCQAM	1	50	68761	634.5	LTE B4B	20	50000	3625	-	-	-	-	-	-	-	-	-	-	-	-	-	19.18	18.95
CA 2A-4A-71A	LTE B71	20	13297	680.5	SCQAM	1	50	68761	634.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	19.13	18.95
CA 4A-71A	LTE B71	20	13297	680.5	SCQAM	1	50	68761	634.5	LTE B4	20	2175	2132.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	19.46	18.95
CA 2A-66A-66A-71A	LTE B71	20	13297	680.5	SCQAM	1	50	68761	634.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2150	-	-	-	-	-	19.49	18.95
CA 5A-66C-71A	LTE B71	20	13297	680.5	SCQAM	1	50	68761	634.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	65984	2164.8	-	-	-	-	-	19.04	18.95
CA 2A-2A-7A-66A-71A	LTE B71	20	13297	680.5	SCQAM	1	50	68761	634.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B7	20	3100	2655	LTE B66	20	66786	2145	19.08	18.95	

G.2.2 LTE Band 12 as PCC

Table G-4
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC				SCC 1				SCC 2				SCC 3				SCC 4				Power						
			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 DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)		
CA 2A-12A (1)	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	-	-	-	-	18.61	18.59	
CA 4A-12A (1)	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	-	18.61	18.59	
CA 4A-12A (2)	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	-	18.61	18.59	
CA 12A-75A	LTE B12	20	23095	707.5	SCQAM	1	49	5095	737.5	LTE B25	20	1865	1902.5	-	-	-	-	-	-	-	-	-	-	-	-	-	18.62	18.59	
CA 12A-48A	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B48	20	50000	3625	-	-	-	-	-	-	-	-	-	-	-	-	-	18.73	18.59	
CA 12A-66A (1)	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	-	18.10	18.59	
CA 12A-66A (2)	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	-	18.10	18.59	
CA 2C-12A	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	LTE B2	20	702	1940.2	-	-	-	-	-	-	-	-	-	18.17	18.59	
CA 12A-48C	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B48	20	50000	3625	LTE B48	20	56388	3644.6	-	-	-	-	-	-	-	-	-	18.21	18.59	
CA 2A-2A-4A-12A	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	-	-	-	-	18.00	18.59
CA 2A-2A-12B	LTE B12	5	23095	707.5	SCQAM	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B2	20	700	1940	-	-	-	-	-	-	17.85	18.57
CA 2A-4A-4A-12A	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B4	20	2250	2150	-	-	-	-	-	-	18.05	18.59
CA 2A-4A-7A-12A	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B7	20	3100	2655	-	-	-	-	-	-	18.05	18.59
CA 2A-4A-12B	LTE B12	5	23095	707.5	SCQAM	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	-	17.97	18.57
CA 2A-12A-66C	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66786	2145	-	-	-	-	-	-	18.04	18.59
CA 4A-4A-12B	LTE B12	5	23095	707.5	SCQAM	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B4	20	2175	2132.5	LTE B4	10	2250	2150	-	-	-	-	-	-	17.93	18.57
CA 2A-2A-7A-12A-66A	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B7	20	3100	2655	LTE B66	20	66786	2145	-	18.70	18.59	
CA 2A-2A-12A-30A-66A	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	3620	3355	LTE B66	20	66786	2145	-	18.27	18.59	
CA 2A-2A-12A-66A-66A	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	66786	2145	-	18.23	18.59	
CA 2A-12A-30A-66A-66A	LTE B12	10	23095	707.5	SCQAM	1	49	5095	737.5	LTE B2	20	900	1960	LTE B30	10	3620	3355	LTE B66	20	66786	2145	LTE B66	20	66786	2145	-	18.14	18.59	

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G.2.3 LTE Band 13 as PCC

Table G-5
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Channel	PCC [UL] Freq. [MHz]	PCC				SCC Band	SCC 1			SCC 2			SCC Band	SCC 3			SCC 4			LTE Tx Power with DC CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]			
					Modulation	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel		PCC [DL] Freq. [MHz]	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC BW [MHz]	SCC [DL] Channel		SCC [DL] Freq. [MHz]	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC BW [MHz]	SCC [DL] Channel			SCC [DL] Freq. [MHz]		
CA 2A-4A-13A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	-	18.57	18.65		
CA 2A-13A-4A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B4B	20	55990	3625	-	-	-	-	-	-	18.63	18.65		
CA 2A-13A-6A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B4B	20	55990	3625	-	-	-	-	-	-	18.68	18.65		
CA 13A-4B-6A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B4B	20	55990	3625	LTE B6B	20	66786	2145	-	-	-	-	-	-	18.68	18.65		
CA 2A-7C-13A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2	-	-	-	18.65	18.65	
CA 2A-13A-4B	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B4B	20	55990	3625	LTE B4B	20	56188	3644.8	-	-	-	18.58	18.65	
CA 2A-13A-6B	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B6B	15	66786	2145	LTE B6B	5	66779	2154.3	-	-	-	18.69	18.65	
CA 2A-13A-4B	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B6B	20	66786	2145	LTE B6B	20	66984	2164.8	-	-	-	18.66	18.65	
CA 13A-4B-6A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B4B	20	55990	3625	LTE B4B	20	56188	3644.8	LTE B6B	20	66786	2145	-	-	-	18.66	18.65	
CA 13A-6B-6A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B6B	20	66786	2145	LTE B6B	5	67268	2163.2	LTE B6B	15	67261	2162.5	-	-	-	18.68	18.65	
CA 13A-6B-4B	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B6B	20	66786	2145	LTE B6B	20	67038	2170.2	LTE B6B	20	67236	2190	-	-	-	18.47	18.65	
CA 2A-13A-6B-6A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	18.67	18.65
CA 2A-7A-7A-13A-6A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B7	20	2850	2630	LTE B7	20	3100	2655	LTE B6B	20	66536	2120	18.69	18.65
CA 13A-4B-6A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B4B	20	55990	3625	LTE B4B	20	56188	3644.8	LTE B4B	20	56386	3664.8	LTE B6B	20	66786	2145	18.74	18.65
CA 13A-4B-6A	LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B4B	20	55990	3625	LTE B4B	20	56188	3644.8	LTE B4B	20	56386	3664.8	LTE B4B	20	56386	3664.8	18.79	18.65

G.2.4 LTE Band 14 as PCC

Table G-6
Maximum Output Powers

Combination	PCC Band	PCC										SCC 1			SCC 2			SCC 3			SCC 4			Power			
		PCC BW [MHz]	PCC [DL] Channel	PCC [UL] Freq. [MHz]	Modulation	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 DC CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-2A-3A-3A-6A	LTE B14	10	23330	793	QPSK	25	12	5130	763	LTE B2	20	900	1960	LTE B2	20	900	1960	LTE B2B	10	9820	2355	LTE B6B	20	66786	2145	18.57	18.48
CA 2A-2A-1A-6A-6A	LTE B14	10	23330	793	QPSK	25	12	5130	763	LTE B2	20	900	1960	LTE B2	20	900	1960	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	18.69	18.65
CA 2A-1A-3A-6A-6A	LTE B14	10	23330	793	QPSK	25	12	5130	763	LTE B2	20	900	1960	LTE B2B	10	9820	2355	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	18.57	18.48

G.2.5 LTE Band 5 as PCC

Table G-7
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 DC CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)		
CA 5A-7A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B7	20	3100	2655	-	-	-	-	-	-	-	-	-	-	-	-	17.60	17.38		
CA 5A-2A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2B	20	8865	1962.5	-	-	-	-	-	-	-	-	-	-	-	-	17.48	17.38		
CA 5A-41A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B41	20	40020	2593	-	-	-	-	-	-	-	-	-	-	-	-	17.59	17.38		
CA 5B (1)	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B5	3	2486	877.6	-	-	-	-	-	-	-	-	-	-	-	-	17.62	17.38		
CA 2C-5A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940.2	-	-	-	-	-	-	-	-	17.25	17.38		
CA 4A-5B	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B5	10	2453	874.3	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	17.13	17.38		
CA 5B-30A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B5	10	2453	874.3	LTE B2B	10	9820	2355	-	-	-	-	-	-	-	-	17.17	17.38		
CA 2A-2A-4A-5A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	-	-	-	18.88	17.38	
CA 2A-4A-4A-5A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B4	10	2250	2150	-	-	-	-	-	18.86	17.38	
CA 2A-5A-7C	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2	-	-	-	-	-	18.95	17.38	
CA 3A-5A-8A-6A-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B4B	20	55990	3625	LTE B6B	20	66786	2145	-	-	-	-	-	18.80	17.38	
CA 2A-5A-4B	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B4B	20	55990	3625	LTE B4B	20	56188	3644.8	-	-	-	-	-	17.14	17.38	
CA 2A-5B-6B	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B5	10	2453	874.3	LTE B5	20	700	1940	LTE B6B	20	66786	2145	-	-	-	-	-	18.89	17.38	
CA 5A-7A-6A-6A-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B7	20	3100	2655	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	-	-	-	-	-	18.87	17.38	
CA 5A-4B-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B4B	20	55990	3625	LTE B4B	20	56188	3644.8	LTE B4B	20	56386	3664.8	-	-	-	-	-	18.94	17.38	
CA 5A-6B-6B	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B6B	20	66786	2145	LTE B6B	15	67261	2163.2	LTE B6B	5	67168	2163.2	-	-	-	-	-	18.93	17.38	
CA 5A-6B-6B	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	LTE B6B	20	67038	2170.2	-	-	-	-	-	17.08	17.38	
CA 2A-2A-5A-3A-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B2B	10	9820	2355	LTE B6B	20	66786	2145	17.25	17.38		
CA 2A-5A-5A-6A-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	17.27	17.38		
CA 2A-2A-5A-6B	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B6B	15	66786	2145	LTE B6B	5	66879	2164.3	17.26	17.38		
CA 2A-5A-7A-7A-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B7	20	2850	2630	LTE B7	20	3100	2655	LTE B7	20	3152	2660.2	LTE B6B	20	66536	2120	17.15	17.38		
CA 2A-5A-3A-6A-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B2	20	900	1960	LTE B2B	10	9820	2355	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	17.17	17.38		
CA 2A-5A-8A-6A-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B7	20	3100	2655	LTE B4B	20	55990	3625	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	16.88	17.38		
CA 5A-6B-6A-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	17.13	17.38		
CA 5A-6B-6A-6A	LTE B5	5	20525	836.5	16QAM	1	12	2525	881.5	LTE B7	20	3100	2655	LTE B4B	20	55990	3644.8	LTE B6B	20	66786	2145	LTE B6B	20	67236	2190	16.86	17.38		

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 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	10	26365	1882.5	16QAM	1	25	13.12	13.38	13.3
48	5	56715	3697.5	16QAM	1	12	12.65	12.80	11.8

Table G-16
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]
7	10	20800	2505	16QAM	1	25	12.93	13.12	12.7
30	10	27710	2310	QPSK	25	12	13.85	13.73	13.6
41	5	39750	2506	QPSK	1	12	14.31	14.29	14.0

Table G-17
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	5	132322	1745	16QAM	1	12	12.89	13.11	12.5

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G.3.2 LTE Band 71 as PCC

Table G-18
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	PCC						SCC 1				SCC 2				SCC 3				SCC 4				Power						
					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 Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA (4A)-71A	LTE B71	20	133297	680.5	16QAM	1	50	68763	634.5	2x2	LTE B48	20	55990	3625	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.66	19.95	
CA (2A)-(4A)-71A	LTE B71	20	133297	680.5	16QAM	1	50	68763	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	19.54	19.95
CA (4A)-(4A)-71A	LTE B71	20	133297	680.5	16QAM	1	50	68763	634.5	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.87	19.95	
CA (2A)-(6A)-(4A)-71A	LTE B71	20	133297	680.5	16QAM	1	50	68763	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B16	20	66789	2545	4x4	LTE B66	20	62736	2500	4x4	-	-	-	-	-	-	19.70	19.95
CA (2A)-(4A)-(6A)-71A	LTE B71	20	133297	680.5	16QAM	1	50	68763	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66789	2545	4x4	LTE B66	20	66984	2544.8	4x4	-	-	-	-	-	-	19.73	19.95
CA (2A)-(2A)-(2A)-(4A)-71A	LTE B71	5	133147	665.5	16QAM	1	12	68613	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B7	20	1200	2050	4x4	LTE B48	20	66789	2545	4x4	-	19.74	19.95

G.3.3 LTE Band 12 as PCC

Table G-19
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] 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 Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA (2A)-(2A)-(1)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.95	18.59	
CA (4A)-(2A)-(1)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.92	18.59	
CA (2A)-(2A)-(1)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B48	20	55990	3625	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.57	18.59	
CA (2A)-(4A)-(1)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B48	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.93	18.59	
CA (2A)-(2A)-(2)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	702	1940.2	4x4	-	-	-	-	-	-	-	-	-	-	-	18.23	18.59
CA (2A)-(4A)-(1)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B48	20	55990	3625	4x4	LTE B48	20	56188	3644.8	4x4	-	-	-	-	-	-	-	-	-	-	-	18.68	18.59
CA (2A)-(2A)-(4A)-(2A)	LTE B12	5	23095	707.5	16QAM	1	12	5095	737.5	2x2	LTE B12	5	5047	737.7	2x2	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	18.33	18.57
CA (2A)-(4A)-(2A)-(1)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	LTE B7	20	1200	2050	4x4	-	-	-	-	-	-	18.40	18.59
CA (2A)-(4A)-(1)-(2A)	LTE B12	5	23095	707.5	16QAM	1	12	5095	737.5	2x2	LTE B12	5	5047	737.7	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	18.49	18.57
CA (2A)-(2A)-(4A)-(1)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B48	20	66786	2145	4x4	LTE B48	20	66786	2145	4x4	-	-	-	-	-	-	18.36	18.59
CA (4A)-(4A)-(2A)	LTE B12	6	23095	707.5	16QAM	1	12	5095	737.5	2x2	LTE B12	6	5047	737.7	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2150	2150	4x4	-	-	-	-	-	-	18.50	18.57
CA (2A)-(2A)-(2A)-(2A)-(4A)-(4A)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B7	20	1200	2050	4x4	LTE B48	20	66786	2145	4x4	-	18.50	18.59
CA (2A)-(2A)-(2A)-(4A)-(4A)-(4A)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B30	10	1820	2360	4x4	LTE B48	20	66786	2145	4x4	-	18.27	18.59
CA (2A)-(2A)-(2A)-(4A)-(4A)-(4A)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B48	20	66786	2145	4x4	LTE B48	20	66786	2145	4x4	-	18.52	18.59
CA (2A)-(2A)-(2A)-(4A)-(4A)-(4A)	LTE B12	10	23095	707.5	16QAM	1	49	5095	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	1820	2360	4x4	LTE B48	20	66786	2145	4x4	LTE B48	20	66786	2145	4x4	-	18.48	18.59

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G.3.4 LTE Band 13 as PCC

Table G-20
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				SCC 4				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.	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]-13A	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2122.5	4x4	-	-	-	-	-	-	-	-	-	-	18.74	18.85		
CA [2A][13A][48A]	LTE B03	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B48	20	35590	3625	2x2	-	-	-	-	-	-	-	-	-	-	-	18.58	18.85	
CA [4A][4A]-13A	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B4	20	2175	2122.5	4x4	LTE B4	20	2350	2150	4x4	-	-	-	-	-	-	-	-	-	-	-	18.84	18.85	
CA [13A][48A][66A]	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B48	20	35590	3625	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	18.89	18.85	
CA [2A][7C]-13A	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	3100	2655	4x4	LTE B7	20	2902	2635.2	4x4	-	-	-	-	-	-	18.69	18.85	
CA [2A][13A][8C]	LTE B13	10	23230	782	QPSK	1	25	5230	751	4x4	LTE B2	20	900	1960	2x2	LTE B48	20	35590	3625	4x4	LTE B48	20	36188	3644.8	4x4	-	-	-	-	-	-	18.54	18.85	
CA [2A][13A][66C]	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66884	2164.8	4x4	-	-	-	-	-	-	18.50	18.85	
CA [2A][13A][66C]	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66884	2164.8	4x4	-	-	-	-	-	-	18.50	18.85	
CA [13A][48C][66A]	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B48	20	35590	3625	4x4	LTE B48	20	36188	3644.8	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	18.48	18.85	
CA [13A][66A][66C]	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67168	2183.2	4x4	LTE B66	20	67261	2192.5	4x4	-	-	-	-	-	-	18.56	18.85	
CA [13A][66A][66C]	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67038	2170.2	4x4	LTE B66	20	67236	2190	4x4	-	-	-	-	-	-	18.53	18.85	
CA [2A][2A][13A][66A][66A]	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	-	18.77	18.85
CA [2A][2A][13A][66A][66A]	LTE B03	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	2650	2550	4x4	LTE B7	20	2902	2655	4x4	LTE B48	20	36036	2120	4x4	-	-	18.66	18.85
CA [13A][48B][66A]	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B48	20	35590	3625	4x4	LTE B48	20	36338	3644.8	4x4	LTE B48	20	36386	3654.8	4x4	LTE B66	20	66786	2145	4x4	-	-	18.81	18.85
CA [13A][48B][66A]	LTE B13	10	23230	782	QPSK	1	25	5230	751	2x2	LTE B48	20	35590	3625	4x4	LTE B48	20	36338	3644.8	4x4	LTE B48	20	36386	3654.8	4x4	LTE B48	20	36386	3654.8	4x4	-	-	18.53	18.85

G.3.5 LTE Band 14 as PCC

Table G-21
Maximum Output Powers

PCC										SCC 1					SCC 2					SCC 3					SCC 4					Power			
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 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 Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]	
CA [2A][2A][14A][30A][66A]	LTE B14	10	23330	793	QPSK	25	12	5330	763	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B30	10	3820	2395	4x4	LTE B66	20	66786	2145	4x4	-	18.50	18.49
CA [2A][2A][14A][66A][66A]	LTE B14	10	23330	793	QPSK	25	12	5330	763	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	18.46	18.49
CA [2A][14A][30A][66A][66A]	LTE B14	10	23330	793	QPSK	25	12	5330	763	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	3820	2395	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	-	18.47	18.49

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G.3.8 LTE Band 66 as PCC

Table G-24
Maximum Output Powers

[illegible]

G.3.9 LTE Band 25 as PCC

Table G-25
Maximum Output Powers

Combination		PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power					
		PCC Band	PCC BW [MHz]	PCC (UL Ch.)	PCC (DL 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.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx Power with DC-Ctx Enabled [dBm]	LTE Single Carrier Power [dBm]
CA SA (25A)	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	10	2525	881.5	2x2																	21.05	19.08
CA 32A (25A)	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B17	10	5095	732.5	2x2																	12.81	11.88
CA 25A (25A)	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	10	5095	732.5	2x2																	12.81	11.88
CA (25A) (25A) 26A	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	5	8865	876.5	2x2												11.51	11.58
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B41	20	40620	2093	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B41	20	40620	2093	4x4	LTE B41	20	40620	2093	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4x4	LTE B20	20	8340	1940	4x4	LTE B20	20	8340	1940	4x4												12.84	11.88
CA (25A) (25A) 41C	LTE B20	10	26365	182.5	1560M			8305	1962.5	4																							

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G.4 Additional Downlink Carrier Aggregation with Uplink Carrier Aggregation Enabled

This device supports uplink carrier aggregation (ULCA) with additional Carrier Aggregation configurations active in the downlink. Power measurements were performed with 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 CA_7C, CA_41C, or CA_48C ULCA active.

G.4.1 Additional DL Carrier Aggregation RF Conducted Powers with Uplink Carrier Aggregation Enabled

Table G-30
Maximum Output Powers LTE Band 41

Combination	PCC Band	PCC										SCC 1										SCC 2										SCC 3										SCC 4										Power	
		PCC BW [MHz]	PCC [DL] 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]	Mod	SCC UL# RB	SCC UL# RB Offset	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]	ULCA Tx Power with DL CA Enabled (dBm)	ULCA Tx Power (dBm)																	
CA 41C-41A	LTE B41	20	41400	2080	QPSK	50	0	41400	2080	LTE B41	20	41200	2080.2	QPSK	50	0	41200	2080.2	LTE B41	20	40800	2080	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	13.45	13.45															
CA 41D-41A	LTE B41	20	41400	2080	QPSK	50	0	41400	2080	LTE B41	20	41200	2080.2	QPSK	50	0	41200	2080.2	LTE B41	20	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	13.45	13.45																	
CA 41C-41C	LTE B41	20	41400	2080	QPSK	50	0	41400	2080	LTE B41	20	41200	2080.2	QPSK	50	0	41200	2080.2	LTE B41	20	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	13.45	13.45																	
CA 41C	LTE B41	20	41400	2080	QPSK	50	0	41400	2080	LTE B41	20	41200	2080.2	QPSK	50	0	41200	2080.2	LTE B41	20	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	13.45	13.45																	
CA 41C-41D	LTE B41	20	41400	2080	QPSK	50	0	41400	2080	LTE B41	20	41200	2080.2	QPSK	50	0	41200	2080.2	LTE B41	20	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	13.45	13.45																	
CA 41C-41C	LTE B41	20	41400	2080	QPSK	50	0	41400	2080	LTE B41	20	41200	2080.2	QPSK	50	0	41200	2080.2	LTE B41	20	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	LTE B41	20	40800	2080	41000	2080.4	13.45	13.45																	

Table G-31
Maximum Output Powers LTE Band 48

	PCC									SCC 1									SCC 2					SCC 3			Power			
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]	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [UL] Freq. [MHz]	Mod.	SCC UL # RB	SCC UL RB Offset	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [UL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [UL] Freq. [MHz]	ULCA Tx Power with DL CA Enabled (dBm)	ULCA Tx Power (dBm)		
CA 48D	LTE B48	20	56640	3690	QPSK	50	0	56640	3690	LTE B48	20	56442	3670.2	QPSK	50	50	56442	3670.2	LTE B48	20	56244	3650.4	-	-	-	-	-	-	12.67	12.64
CA 48E	LTE B48	20	56640	3690	QPSK	50	0	56640	3690	LTE B48	20	56442	3670.2	QPSK	50	50	56442	3670.2	LTE B48	20	56244	3650.4	LTE B48	20	56046	3630.6	-	-	12.66	12.64

G.4.2 Additional 4x4 MIMO DL Carrier Aggregation RF Conducted Powers with Uplink Carrier Aggregation Enabled

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-32
Maximum Output Powers LTE Band 7

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 (UL) Ch.	SCC (UL) Freq. [MHz]	Mod	SCC UL # RB	SCC UL RB Offset	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	ULCA Tx.Power with DL CA Enabled (dBm)	ULCA Tx Power (dBm)
CA [7C]	LTE B7	20	21350	2560	QPSK	50	0	3350	2680	4x4	LTE B7	20	21152	2540.2	QPSK	50	50	3152	2660.2	4x4	12.66	12.60

Table G-33
Maximum Output Powers LTE Band 41

Combination	PCC										SCC 1										SCC 2										SCC 3										Power																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	PCC Band	PCC BW [MHz]	PCC [DL] 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]	Mod	SCC UL# RB	SCC UL# RB Offset	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.	ULCA Tx Power with DL CA Enabled (dBm)	ULCA Tx Power (dBm)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
CA 41C-41A	LTE B41	20	41400	2080	QPSK	50	0	41400	2080	4x4	LTE B41	20	41200	2080.2	QPSK	50	0	41200	2080.2	4x4	LTE B41	20	41000	2080.4	4x4	LTE B41	20	40800	2080	4x4	LTE B41	20	40600	2060.2	4x4	LTE B41	20	40400	2040.4	4x4	LTE B41	20	40200	2020.6	4x4	LTE B41	20	40000	2000.8	4x4	LTE B41	20	39800	1981.0	4x4	LTE B41	20	39600	1961.2	4x4	LTE B41	20	39400	1941.4	4x4	LTE B41	20	39200	1921.6	4x4	LTE B41	20	39000	1901.8	4x4	LTE B41	20	38800	1882.0	4x4	LTE B41	20	38600	1862.2	4x4	LTE B41	20	38400	1842.4	4x4	LTE B41	20	38200	1822.6	4x4	LTE B41	20	38000	1802.8	4x4	LTE B41	20	37800	1783.0	4x4	LTE B41	20	37600	1763.2	4x4	LTE B41	20	37400	1743.4	4x4	LTE B41	20	37200	1723.6	4x4	LTE B41	20	37000	1703.8	4x4	LTE B41	20	36800	1684.0	4x4	LTE B41	20	36600	1664.2	4x4	LTE B41	20	36400	1644.4	4x4	LTE B41	20	36200	1624.6	4x4	LTE B41	20	36000	1604.8	4x4	LTE B41	20	35800	1585.0	4x4	LTE B41	20	35600	1565.2	4x4	LTE B41	20	35400	1545.4	4x4	LTE B41	20	35200	1525.6	4x4	LTE B41	20	35000	1505.8	4x4	LTE B41	20	34800	1486.0	4x4	LTE B41	20	34600	1466.2	4x4	LTE B41	20	34400	1446.4	4x4	LTE B41	20	34200	1426.6	4x4	LTE B41	20	34000	1406.8	4x4	LTE B41	20	33800	1387.0	4x4	LTE B41	20	33600	1367.2	4x4	LTE B41	20	33400	1347.4	4x4	LTE B41	20	33200	1327.6	4x4	LTE B41	20	33000	1307.8	4x4	LTE B41	20	32800	1288.0	4x4	LTE B41	20	32600	1268.2	4x4	LTE B41	20	32400	1248.4	4x4	LTE B41	20	32200	1228.6	4x4	LTE B41	20	32000	1208.8	4x4	LTE B41	20	31800	1189.0	4x4	LTE B41	20	31600	1169.2	4x4	LTE B41	20	31400	1149.4	4x4	LTE B41	20	31200	1129.6	4x4	LTE B41	20	31000	1109.8	4x4	LTE B41	20	30800	1090.0	4x4	LTE B41	20	30600	1070.2	4x4	LTE B41	20	30400	1050.4	4x4	LTE B41	20	30200	1030.6	4x4	LTE B41	20	30000	1010.8	4x4	LTE B41	20	29800	991.0	4x4	LTE B41	20	29600	971.2	4x4	LTE B41	20	29400	951.4	4x4	LTE B41	20	29200	931.6	4x4	LTE B41	20	29000	911.8	4x4	LTE B41	20	28800	892.0	4x4	LTE B41	20	28600	872.2	4x4	LTE B41	20	28400	852.4	4x4	LTE B41	20	28200	832.6	4x4	LTE B41	20	28000	812.8	4x4	LTE B41	20	27800	793.0	4x4	LTE B41	20	27600	773.2	4x4	LTE B41	20	27400	753.4	4x4	LTE B41	20	27200	733.6	4x4	LTE B41	20	27000	713.8	4x4	LTE B41	20	26800	694.0	4x4	LTE B41	20	26600	674.2	4x4	LTE B41	20	26400	654.4	4x4	LTE B41	20	26200	634.6	4x4	LTE B41	20	26000	614.8	4x4	LTE B41	20	25800	595.0	4x4	LTE B41	20	25600	575.2	4x4	LTE B41	20	25400	555.4	4x4	LTE B41	20	25200	535.6	4x4	LTE B41	20	25000	515.8	4x4	LTE B41	20	24800	496.0	4x4	LTE B41	20	24600	476.2	4x4	LTE B41	20	24400	456.4	4x4	LTE B41	20	24200	436.6	4x4	LTE B41	20	24000	416.8	4x4	LTE B41	20	23800	397.0	4x4	LTE B41	20	23600	377.2	4x4	LTE B41	20	23400	357.4	4x4	LTE B41	20	23200	337.6	4x4	LTE B41	20	23000	317.8	4x4	LTE B41	20	22800	298.0	4x4	LTE B41	20	22600	278.2	4x4	LTE B41	20	22400	258.4	4x4	LTE B41	20	22200	238.6	4x4	LTE B41	20	22000	218.8	4x4	LTE B41	20	21800	199.0	4x4	LTE B41	20	21600	179.2	4x4	LTE B41	20	21400	159.4	4x4	LTE B41	20	21200	139.6	4x4	LTE B41	20	21000	119.8	4x4	LTE B41	20	20800	99.0	4x4	LTE B41	20	20600	79.2	4x4	LTE B41	20	20400	59.4	4x4	LTE B41	20	20200	39.6	4x4	LTE B41	20	20000	19.8	4x4	LTE B41	20	19800	0.0	4x4	LTE B41	20	19600	-19.8	4x4	LTE B41	20	19400	-39.6	4x4	LTE B41	20	19200	-59.4	4x4	LTE B41	20	19000	-79.2	4x4	LTE B41	20	18800	-99.0	4x4	LTE B41	20	18600	-119.8	4x4	LTE B41	20	18400	-139.6	4x4	LTE B41	20	18200	-159.4	4x4	LTE B41	20	18000	-179.2	4x4	LTE B41	20	17800	-199.0	4x4	LTE B41	20	17600	-219.8	4x4	LTE B41	20	17400	-239.6	4x4	LTE B41	20	17200	-259.4	4x4	LTE B41	20	17000	-279.2	4x4	LTE B41	20	16800	-299.0	4x4	LTE B41	20	16600	-319.8	4x4	LTE B41	20	16400	-339.6	4x4	LTE B41	20	16200	-359.4	4x4	LTE B41	20	16000	-379.2	4x4	LTE B41	20	15800	-399.0	4x4	LTE B41	20	15600	-419.8	4x4	LTE B41	20	15400	-439.6	4x4	LTE B41	20	15200	-459.4	4x4	LTE B41	20	15000	-479.2	4x4	LTE B41	20	14800	-499.0	4x4	LTE B41	20	14600	-519.8	4x4	LTE B41	20	14400	-539.6	4x4	LTE B41	20	14200	-559.4	4x4	LTE B41	20	14000	-579.2	4x4	LTE B41	20	13800	-599.0	4x4	LTE B41	20	13600	-619.8	4x4	LTE B41	20	13400	-639.6	4x4	LTE B41	20	13200	-659.4	4x4	LTE B41	20	13000	-679.2	4x4	LTE B41	20	12800	-699.0	4x4	LTE B41	20	12600	-719.8	4x4	LTE B41	20	12400	-739.6	4x4	LTE B41	20	12200	-759.4	4x4	LTE B41	20	12000	-779.2	4x4	LTE B41	20	11800	-799.0	4x4	LTE B41	20	11600	-819.8	4x4	LTE B41	20	11400	-839.6	4x4	LTE B41	20	11200	-859.4	4x4	LTE B41	20	11000	-879.2	4x4	LTE B41	20	10800	-899.0	4x4	LTE B41	20	10600	-919.8	4x4	LTE B41	20	10400	-939.6	4x4	LTE B41	20	10200	-959.4	4x4	LTE B41	20	10000	-979.2	4x4	LTE B41	20	9800	-999.0	4x4	LTE B41	20	9600	-1019.8	4x4	LTE B41	20	9400	-1039.6	4x4	LTE B41	20	9200	-1059.4	4x4	LTE B41	20	9000	-1079.2	4x4	LTE B41	20	8800	-1099.0	4x4	LTE B41	20	8600	-1119.8	4x4	LTE B41	20	8400	-1139.6	4x4	LTE B41	20	8200	-1159.4	4x4	LTE B41	20	8000	-1179.2	4x4	LTE B41	20	7800	-1199.0	4x4	LTE B41	20	7600	-1219.8	4x4	LTE B41	20	7400	-1239.6	4x4	LTE B41	20	7200	-1259.4	4x4	LTE B41	20	7000	-1279.2	4x4	LTE B41	20	6800	-1299.0	4x4	LTE B41	20	6600	-1319.8	4x4	LTE B41	20	6400	-1339.6	4x4	LTE B41	20	6200	-1359.4	4x4	LTE B41	20	6000	-1379.2	4x4	LTE B41	20	5800	-1399.0	4x4	LTE B41	20	5600	-1419.8	4x4	LTE B41	20	5400	-1439.6	4x4	LTE B41	20	5200	-1459.4	4x4	LTE B41	20	5000	-1479.2	4x4	LTE B41	20	4800	-1499.0	4x4	LTE B41	20	4600	-1519.8	4x4	LTE B41	20	4400	-1539.6	4x4	LTE B41	20	4200	-1559.4	4x4	LTE B41	20	4000	-1579.2	4x4	LTE B41	20	3800	-1599.0	4x4	LTE B41	20	3600	-1619.8	4x4	LTE B41	20	3400	-1639.6	4x4	LTE B41	20	3200	-1659.4	4x4	LTE B41	20	3000	-1679.2	4x4	LTE B41	20	2800	-1699.0	4x4	LTE B41	20	2600	-1719.8	4x4	LTE B41	20	2400	-1739.6	4x4	LTE B41	20	2200	-1759.4	4x4	LTE B41	20	2000	-1779.2	4x4	LTE B41	20	1800	-1799.0	4x4	LTE B41	20	1600	-1819.8	4x4	LTE B41	20	1400	-1839.6	4x4	LTE B41	20	1200	-1859.4	4x4	LTE B41	20	1000	-1879.2	4x4	LTE B41	20	800	-1899.0	4x4	LTE B41	20	600	-1919.8	4x4	LTE B41	20	400	-1939.6	4x4	LTE B41	20	200	-1959.4	4x4	LTE B41	20	0	-1979.2	4x4	LTE B41	20	-200	-1999.0	4x4	LTE B41	20	-400	-2019.8	4x4	LTE B41	20	-600	-2039.6	4x4	LTE B41	20	-800	-2059.4	4x4	LTE B41	20	-1000	-2079.2	4x4	LTE B41	20	-1200	-2099.0	4x4	LTE B41	20	-1400	-2119.8	4x4	LTE B41	20	-1600	-2139.6	4x4	LTE B41	20	-1800	-2159.4	4x4	LTE B41	20	-2000	-2179.2	4x4	LTE B41	20	-2200	-2199.0	4x4	LTE B41	20	-2400	-2219.8	4x4	LTE B41	20	-2600	-2239.6	4x4	LTE B41	20	-2800	-2259.4	4x4	LTE B41	20	-3000	-2279.2	4x4	LTE B41	20	-3200	-2299.0	4x4	LTE B41	20	-3400	-2319.8	4x4	LTE B41	20	-3600	-2339.6	4x4	LTE B41	20	-3800	-2359.4	4x4	LTE B41	20	-4000	-2379.2	4x4	LTE B41	20	-4200	-2399.0	4x4	LTE B41	20	-4400	-2419.8	4x4	LTE B41	20	-4600	-2439.6	4x4	LTE B41	20	-4800	-2459.4	4x4	LTE B41	20	-5000	-2479.2	4x4	LTE B41	20	-5200	-2499.0	4x4	LTE B41	20	-5400	-2519.8	4x4	LTE B41	20	-5600	-2539.6	4x4	LTE B41	20	-5800	-2559.4	4x4	LTE B41	20	-6000	-2579.2	4x4	LTE B41	20	-6200	-2599.0	4x4	LTE B41	20	-6400	-2619.8	4x4	LTE B41	20	-6600	-2639.6	4x4	LTE B41	20	-6800	-2659.4	4x4	LTE B41	20	-7000	-2679.2	4x4	LTE B41	20	-7200	-2699.0	4x4	LTE B41	20	-7400	-2719.8	4x4	LTE B41	20	-7600	-2739.6	4x4	LTE B41	20	-7800	-2759.4	4x4	LTE B41	20	-8000	-2779.2	4x4	LTE B41	20	-8200	-2799.0	4x4	LTE B41	20	-8400	-2819.8	4x4	LTE B41	20	-8600	-2839.6	4x4	LTE B41	20	-8800	-2859.4	4x4	LTE B41	20	-9000	-2879.2	4x4	LTE B41	20	-9200	-2899.0	4x4	LTE B41	20	-9400	-2919.8	4x4	LTE B41	20	-9600	-2939.6	4x4	LTE B41	20	-9800	-2959.4	4x4	LTE B41	20	-10000	-2979.2	4x4	LTE B41	20	-10200	-2999.0	4x4	LTE B41	20	-10400	-3019.8	4x4	LTE B41	20	-10600	-3039.6	4x4	LTE B41	20	-10800	-3059.4	4x4	LTE B41	20	-11000	-3079.2	4x4	LTE B41	20	-11200	-3099.0	4x4	LTE B41	20	-11400	-3119.8	4x4	LTE B41	20	-11600	-3139.6	4x4	LTE B41	20	-11800	-3159.4	4x4	LTE B41	20	-12000	-

Table G-34
Maximum Output Powers LTE Band 48

Combination	PCC										SCC 1										SCC 2										SCC 3					Power	
	PCC Band	PCC BW [MHz]	PCC [CA] Ch.	PCC [DL] Freq. [MHz]	Mod.	PCC UL#	PCC UL RB Offset	PCC [CA] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [CA] Ch.	SCC [DL] Freq. [MHz]	Mod.	SCC UL # RB	SCC UL RB Offset	SCC [CA] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [CA] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [CA] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	UL CA Tx Power with DL CA (dBm)	UL CA Tx Power (dBm)					
CA (4B/C)	LTE-B4B	20	56640	3690	QPSK	50	0	56640	3690	4x4	LTE-B4B	20	56442	3670.2	QPSK	50	50	56442	3670.2	4x4											12.61	12.64					
CA (4B/D)	LTE-B4B	20	56640	3690	QPSK	50	0	56640	3690	4x4	LTE-B4B	20	56442	3670.2	QPSK	50	50	56442	3670.2	4x4	LTE-B4B	20	56344	3650.4	4x4						12.68	12.64					
CA (4B/E)	LTE-B4B	20	56640	3690	QPSK	50	0	56640	3690	4x4	LTE-B4B	20	56442	3670.2	QPSK	50	50	56442	3670.2	4x4	LTE-B4B	20	56344	3650.4	4x4	LTE-B4B	20	56040	3630.6	4x4	12.69	12.64					

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-35
Maximum Output Powers

[illegible]

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-36
Maximum Output Powers

[illegible]