

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

Table 1 - Example										Table 2 - Example																	
Index		ZCC	Approved Control Measure (ZCC)			Restriction	Completely Covered by Measurement Support	Index		ZCC	Approved Control Measure (ZCC)			Restriction	Completely Covered by Measurement Support	Index		ZCC	Approved Control Measure (ZCC)			Restriction	Completely Covered by Measurement Support				
Index	ZCC	CC1	CC2	CC3	CC4	CC5	Index	ZCC	CC1	CC2	CC3	CC4	CC5	Index	ZCC	CC1	CC2	CC3	CC4	CC5	Index	ZCC	CC1	CC2	CC3	CC4	CC5
CC-01	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-01	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-01	CA-20-20-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-01	CA-20-20-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10
CC-02	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-02	CA-20-20-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-02	CA-20-20-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-02	CA-20-20-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-03	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-03	CA-20-20-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-03	CA-20-20-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-03	CA-20-20-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-04	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-04	CA-20-20-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-04	CA-20-20-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-04	CA-20-20-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-05	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-05	CA-20-20-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-05	CA-20-20-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-05	CA-20-20-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-06	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-06	CA-20-20-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-06	CA-20-20-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-06	CA-20-20-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-07	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-07	CA-20-20-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-07	CA-20-20-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-07	CA-20-20-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-08	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-08	CA-20-20-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-08	CA-20-20-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-08	CA-20-20-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-09	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-09	CA-20-20-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-09	CA-20-20-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-09	CA-20-20-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-10	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-10	CA-20-20-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-10	CA-20-20-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-10	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-11	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-11	CA-20-20-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-11	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-11	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-12	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-12	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-12	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-12	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-13	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-13	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-13	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-13	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-14	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-14	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-14	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-14	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-15	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-15	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-15	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-15	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-16	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-16	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-16	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-16	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-17	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-17	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-17	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-17	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-18	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-18	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-18	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-18	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-19	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-19	CA-20-20-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-19	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-19	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-20	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-20	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-20	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-20	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-21	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-21	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-21	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-21	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-22	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-22	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-22	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-22	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-23	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-23	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-23	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-23	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-24	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-24	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-24	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-24	CA-20-20-00	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	
CC-25	CA-20	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	5.10.10.10	CC-25	CA-20-20-00	5.10.10.1																		

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

Table 2 Example of Channel Bands for 1x1 Downlink MIMO Configurations																				
Index	2CC	Supported Channel Bandwidth (MHz)		Restriction	Completely Covered by Measurement Superband	Index	2CC	Supported Channel Bandwidth (MHz)			Restriction	Completely Covered by Measurement Superband	Index	4CC	Supported Channel Bandwidth (MHz)				Restriction	Completely Covered by Measurement Superband
		CC1	CC2					CC1	CC2	CC3					CC1	CC2	CC3	CC4		
CC#RM1	CA [2]	5, 10, 15, 20	5, 10, 15, 20		CC#RM6	CA [2A]-2A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM11	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No			
CC#RM2	CA [10A]-3A	5, 10, 15, 20	5, 10, 15, 20		CC#RM7	CA [2A]-2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM12	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No			
CC#RM3	CA [2A]-2A	5, 10, 15, 20	5, 10, 15, 20	No	CC#RM8	CA [2A]-2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10		CC#RM13	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15	No			
CC#RM4	CA [2A]-4A(2)	5, 10, 15, 20	5, 10, 15, 20	No	CC#RM9	CA [2A]-2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10		CC#RM14	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15	No			
CC#RM5	CA [2A]-4A(4)	5, 10, 15, 20	5, 10, 15, 20	No	CC#RM10	CA [2A]-2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10		CC#RM15	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15	No			
CC#RM6	CA [2A]-3A	5, 10, 15, 20		CC#RM3	CA [2C]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM16	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No				
CC#RM7	CA [2A]-3A(1)	5, 10, 15, 20	3, 6, 10		CC#RM17	CA [2C]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM17	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No			
CC#RM8	CA [10A]-3A	5, 10, 15, 20	10	CC#RM6	CA [2C]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM18	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No				
CC#RM9	CA [2A]-3A	5, 10	5, 10		CC#RM18	CA [2A]-2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM19	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No			
CC#RM10	CA [2A]-3A(2)	5, 10, 15, 20	5, 10	B29 SC Only	CC#RM12	CA [2A]-3A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM20	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No			
CC#RM11	CA [2A]-3A	5, 10, 15, 20	5, 10		CC#RM13	CA [2A]-3A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM21	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No			
CC#RM12	CA [2A]-66A(2)	5, 10, 15, 20	5, 10, 15, 20		CC#RM14	CA [2A]-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10	B29 SC Only	CC#RM22	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No			
CC#RM13	CA [2A]-66A(2)	5, 10, 15, 20	5, 10, 15, 20		CC#RM15	CA [2A]-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM23	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No			
CC#RM14	CA [2A]-66A(2)	5, 10, 15, 20	5, 10, 15, 20		CC#RM16	CA [2A]-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM24	CA [2A]-2A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	No			
CC#RM15	CA [2A]-7A	5, 10, 15, 20	5, 10, 15, 20		CC#RM17	CA [2A]-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20											
CC#RM16	CA [5A]-66A	5, 10	5, 10		CC#RM18	CA [2A]-5A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		CC#RM25	CA [2A]-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
CC#RM17	CA [10A]-66A(4)	5, 10	5, 10, 15, 20		CC#RM19	CA [2A]-5A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		CC#RM26	CA [2A]-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
CC#RM18	CA [1A]-66A	5, 10	5, 10, 15, 20		CC#RM20	CA [2A]-11A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		CC#RM27	CA [2A]-66A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
CC#RM19	CA [3A]-66A	5, 10	5, 10, 15, 20		CC#RM21	CA [2A]-13A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		CC#RM28	CA [2A]-66A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
CC#RM20	CA [5A]-66A	5, 10, 15, 20	5, 10, 15, 20		CC#RM22	CA [2A]-30A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		CC#RM29	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
CC#RM21	CA [66C]	5, 10, 15, 20	5, 10, 15, 20		CC#RM23	CA [2A]-68	5, 10, 15, 20	5, 10, 15	5, 10, 15		CC#RM30	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
CC#RM22	CA [66A]-66A	5, 10, 15, 20	5, 10, 15, 20		CC#RM24	CA [2A]-68B	5, 10, 15, 20	5, 10, 15	5, 10, 15		CC#RM31	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
CC#RM23	CA [66A]-66A	5, 10, 15, 20	5, 10, 15, 20		CC#RM25	CA [2A]-68B	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM32	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM26	CA [2A]-68C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM33	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM27	CA [2A]-66A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM34	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM28	CA [2A]-66A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM35	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM29	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM36	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM30	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM37	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM31	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM38	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM32	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM39	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM33	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM40	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM34	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM41	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM35	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM42	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM36	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM43	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM37	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM44	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM38	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM45	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM39	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM46	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM40	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM47	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM41	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM48	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM42	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM49	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM43	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM50	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM44	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM51	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM45	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM52	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM46	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM53	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM47	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM54	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM48	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM55	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM49	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM56	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM50	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM57	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM51	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM58	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM52	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM59	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM53	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM60	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM54	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM61	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM55	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM62	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	CC#RM6			
					CC#RM56	CA [2A]-66A-71A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		CC#RM63	CA [2A]-66A-71A	5, 10,							

Note: [CC] indicates component carrier with 4x4 DL MIMO antenna configuration

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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.

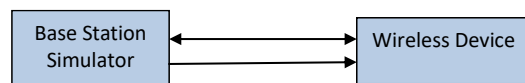


Figure 1
DL CA Power Measurement Setup

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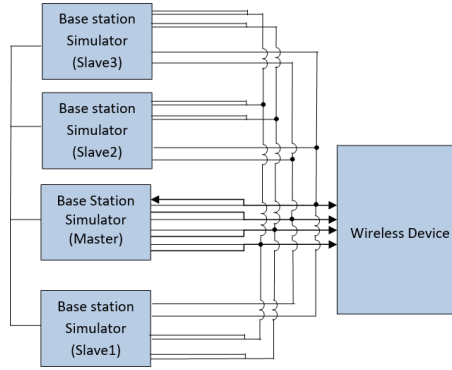


Figure 2
DL CA with DL 4x4 MIMO Power Measurement Setup

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

[illegible]

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 (3A)	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	2920	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	2920	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	2902	2635.2	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	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	4x4	LTE B30	10	9820	2355	2x2	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 5A (30A)-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B30	10	9820	2355	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	25.00	25.31
CA 5A (30A)-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B30	10	9820	2355	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	24.93	25.31
CA 5A (30A)-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B30	10	9820	2355	2x2	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	25.02	25.31
CA 5A (66A)-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	-	25.28	25.31
CA [2A]-2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B66	20	66786	2145	2x2	24.83	25.31	
CA 2A-2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B2	20	700	1940	2x2	LTE B66	20	66786	2145	4x4	25.47	25.31	
CA [2A]-2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B66	20	66786	2145	4x4	25.44	25.31	
CA [2A]-2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B66	20	66786	2145	4x4	25.45	25.31	
CA [2A]-2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	2x2	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	25.46	25.31	
CA [2A]-2A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	0	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	25.52	25.31	

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	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW	20	125272	1770	QPSK	1	0	870536	2320	242	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-SSA	LTE-BW																										

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 [2A]-[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 [2A]-[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 2A-[4A]-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	2x2	LTE B2	20	900	1960	2x2	LTE B4	20	2175	2132.5	2x2	LTE B29	10	9715	722.5	2x2	23.70	23.78
CA [2A]-[4A]-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	4x4	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 [2A]-[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	23.69	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	2x2	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	4x4	23.77	23.78
CA [2A]-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	4x4	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	4x4	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	4x4	23.74	23.78
CA [2A]-[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	4x4	23.77	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	23.69	23.78
CA 2A-[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 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 [2A]-[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 [2A]-[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 [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	23.68	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 [2A]-[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 [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	4x4	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	4x4	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	4x4	LTE B66	20	66786	2145	2x2	23.73	23.78
CA [2A]-[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	4x4	LTE B66	20	66786	2145	2x2	23.74	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	4x4	LTE B66	20	66786	2145	2x2	23.77	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	4x4	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	4x4	LTE B5	10	2525	881.5	2x2	LTE B66	20	66786	2145	4x4	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	4x4	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	4x4	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	4x4	LTE B66	20	66786	2145	2x2	23.76	23.78

FCC ID: A3LSMN981W	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Reviewed by: Quality Manager
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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

FCC ID: A3LSMN981W	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 06/03/20 - 07/13/20	DUT Type: Portable Handset			APPENDIX F: Page 9 of 9