

APPENDIX H: LTE DOWNLINK CA RF CONDUCTED POWERS

LTE Downlink Only Carrier Aggregation Test Reduction Methodology

Per October 2024 TCBC Workshop Notes, the use of Carrier Aggregation (CA, hereafter) requires ensuring that the applicable rules are met in each portion of the spectrum that is used by each component carrier. CA can be applied to both transmissions, or uplink (UL) from the device under test perspective and reception, or downlink (DL). For FCC compliance, only UL operations are relevant. It is possible that in some cases the DL impacts the available options for UL. Therefore, spot-check conducted power measurements will be evaluated.

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 4x4 Downlink MIMO operations were measured and represent the worst-case to cover all SISO configurations with the same bands and component carriers.
- Evaluate MIMO combinations with the maximum number of frequency bands, component carriers, and largest aggregated bandwidth to represent worst-case scenarios for spot-check measurements.

FCC ID: BCGA3267	RF EXPOSURE PART 1 TEST REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX H: Page 1 of 7

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 the RF Conducted Powers Section and LTE/NR Lower Bandwidth RF Conducted Power Appendix. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
- To maximize aggregated bandwidth, the 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.

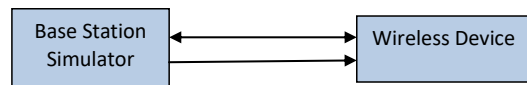


Figure H-1
DL CA Power Measurement Setup

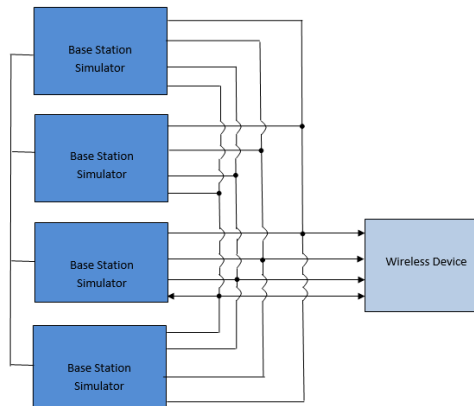


Figure H-2
DL CA with DL 4x4 MIMO Power Measurement Setup

FCC ID: BCGA3267	RF EXPOSURE PART 1 TEST REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX H: Page 3 of 7

H.2 Downlink Carrier Aggregation RF Conducted Powers

H.2.1 LTE Band 71 as PCC

Table H-2
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 (dbrn)
CA [2A] [2A] [7A] [66A] [71A]	LTE B71	5	133147	665.5	16QAM	1	12	66611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B7	20	3100	2665	4x4	LTE B66	20	66786	2145	4x4	20.74	21.22

H.2.2 LTE Band 12 as PCC

Table H-3
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 CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]
CA [2A] [2A] [7A] [13A] [66A]	LTE B12	5	23095	707.5	64QAM	1	0	50395	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B7	20	3100	2655	4x4	LTE B66	20	66786	2145	4x4	18.74	19.39
CA [2A] [2A] [12A] [13A] [66A]	LTE B12	5	23095	707.5	64QAM	1	0	50395	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B30	10	8620	2365	4x4	LTE B66	20	66786	2145	4x4	18.85	19.39
CA [2A] [2A] [12A] [13A] [66A]	LTE B12	5	23095	707.5	64QAM	1	0	50395	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	18.87	19.39
CA [2A] [2A] [20A] [66A] [66A]	LTE B12	5	23095	707.5	64QAM	1	0	50395	737.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	8620	2365	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	18.98	19.39

H.2.3 LTE Band 13 as PCC

Table H-4
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] [2A] [13A] [66A] [66A]	LTE B13	10	23230	762	64QAM	1	0	52330	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	17.89	18.37
CA [2A] [2A] [13A] [66A]	LTE B13	10	23230	762	64QAM	1	0	52330	751	2x2	LTE B2	20	900	1960	4x4	LTE B7	20	2650	2630	4x4	LTE B67	20	3070	2650	4x4	LTE B66	20	66536	2120	4x4	17.87	18.37
CA [2A] [4B] [10A]	LTE B13	10	23230	762	64QAM	1	0	52330	751	2x2	LTE B48	20	50380	3625	4x4	LTE B48	20	50380	3644.8	4x4	LTE B48	20	50380	3644.8	4x4	LTE B66	20	66786	2145	4x4	17.83	18.37
CA [2A] [4B]	LTE B13	10	23230	762	64QAM	1	0	52330	751	2x2	LTE B48	20	50380	3625	4x4	LTE B48	20	50380	3644.8	4x4	LTE B48	20	50380	3644.8	4x4	LTE B66	20	66536	2120	4x4	17.83	18.37

H.2.4 LTE Band 14 as PCC

Table H-5
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] [2A] [14A] [30A] [66A]	LTE B14	5	23330	793	16QAM	1	12	5330	763	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B30	10	8620	2365	4x4	LTE B66	20	66786	2145	4x4	17.88	18.30
CA [2A] [2A] [14A] [66A] [66A]	LTE B14	5	23330	793	16QAM	1	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	17.71	18.30
CA [2A] [14A] [30A] [66A] [66A]	LTE B14	5	23330	793	16QAM	1	12	5330	763	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	8620	2365	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	17.52	18.30

H.2.5 LTE Band 5 as PCC

Table H-6
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.	LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]					
CA [2A] [2A] [5A] [30A] [66A]	LTE B5	5	20425	826.5	16QAM	1	12	2425	871.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B30	10	8620	2365	4x4	LTE B66	20	66786	2145	4x4	18.02	18.60
CA [2A] [2A] [5A] [66A] [66A]	LTE B5	5	20425	826.5	16QAM	1	12	2425	871.5	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	17.98	18.60
CA [2A] [2A] [5A] [30A]	LTE B5	5	20425	826.5	16QAM	1	12	2425	871.5	2x2	LTE B2	20	900	1960	4x4	LTE B6	10	6076	2145	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66786	2145	4x4	18.70	18.60
CA [2A] [2A] [5A] [66A]	LTE B5	5	20425	826.5	16QAM	1	12	2425	871.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	18.70	18.60
CA [2A] [5A] [7A] [7A] [66A]	LTE B5	5	20425	826.5	16QAM	1	12	2425	871.5	2x2	LTE B7	20	2090	2070	4x4	LTE B7	20	3352	2060.2	4x4	LTE B66	20	66536	2120	4x4	LTE B66	20	66536	2120	4x4	17.99	18.60
CA [2A] [5A] [30A] [66A] [66A]	LTE B5	5	20425	826.5	16QAM	1	12	2425	871.5	2x2	LTE B2	20	900	1960	4x4	LTE B30	10	8620	2365	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	18.18	18.60
CA [2A] [5A] [4B] [66A] [66A]	LTE B5	5	20425	826.5	16QAM	1	12	2425	871.5	2x2	LTE B2	20	900	1960	4x4	LTE B48	20	50380	3625	4x4	LTE B48	20	50380	3644.8	4x4	LTE B66	20	66786	2145	4x4	18.22	18.60
CA [5A] [7C] [66A] [66A]	LTE B5	5	20425	826.5	16QAM	1	12	2425	871.5	2x2	LTE B7	20	2092	2069.2	4x4	LTE B7	20	2092	2069.2	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	17.86	18.60
CA [5A] [6C] [66A] [66A]	LTE B5	5	20425	826.5	16QAM	1	12	2425	871.5	2x2	LTE B48	20	50380	3625	4x4	LTE B48	20	50380	3644.8	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	18.17	18.60

FCC ID: BCGA3267	RF EXPOSURE PART 1 TEST REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX H: Page 4 of 7

H.2.6 LTE Band 66 as PCC

Table H-7
Maximum Output Powers

[illegible]

H.2.7 LTE Band 25 as PCC

Table H-8
Maximum Output Powers

Combination	PCC										SCC-1				SCC-3				SCC-3				SCC-4				Power					
	PCC Band	PCC BW [MHz]	PCC (LA) [MHz]	PCC (LA) Freq. [MHz]	PCC UL# Mod.	PCC UL# RB Offset	PCC (DL) [MHz]	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (LA) [MHz]	SCC (LA) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx Power with CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]	
CA [PRA][PRA] (413)	LTE B26	5	290695	1982.5	SCCA#1	1	12	8095	1992.5	4ant	LTE B26	20	8590	1985	4ant	LTE B43	20	40622	2737.2	4ant	LTE B43	20	40620	2703	4ant	LTE B43	20	40838	2832.0	4ant	23.7	14.28

H.2.8 LTE Band 30 as PCC

Table H-9
Maximum Output Powers

Combination	PCC										SSC 1				SSC 2				SSC 3				SSC 4				Power				
	PCC BW [MHz]	PCC [CA]	PCC (LA) Freq. [MHz]	Mod.	PCC UL RB Offset	PCC UL RB Offset (CA)	PCC (LA) Freq. [MHz]	DL Ant. Config.	SSC Band	SSC BW [MHz]	SSC (LA) Freq. [MHz]	DL Ant. Config.	SSC Band	SSC BW [MHz]	SSC (LA) Freq. [MHz]	DL Ant. Config.	SSC Band	SSC BW [MHz]	SSC (LA) Freq. [MHz]	DL Ant. Config.	SSC Band	SSC BW [MHz]	SSC (LA) Freq. [MHz]	DL Ant. Config.	LTE Tx Power with CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)					
CA [2A][2A][2A][2A][6A]	LTE B30	10	2717.0	1QAM	1	0	9820	2585	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	900	1960	4x4	LTE B5	10	2525	1881.5	2x2	LTE B56	20	6678.0	2145	4x4	13.4	13.4
CA [2A][2A][2A][2A][6A]	LTE B30	10	2717.0	1QAM	1	0	9820	2585	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	900	1960	4x4	LTE B12	20	5955	737.5	2x2	LTE B56	20	6678.0	2145	4x4	13.3	13.4
CA [2A][2A][2A][2A][6A]	LTE B30	10	2717.0	1QAM	1	0	9820	2585	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	900	1960	4x4	LTE B14	10	5320	703	2x2	LTE B56	20	6678.0	2145	4x4	13.3	13.4
CA [2A][2A][2A][2A][6A]	LTE B30	10	2717.0	1QAM	1	0	9820	2585	4x4	LTE B2	20	900	1960	4x4	LTE B2	20	900	1960	4x4	LTE B18	10	4715	620	2x2	LTE B56	20	6678.0	2145	4x4	13.3	13.4
CA [2A][2A][2A][2A][6A]	LTE B30	10	2717.0	1QAM	1	0	9820	2585	4x4	LTE B2	20	900	1960	4x4	LTE B5	10	2525	1881.5	2x2	LTE B56	20	6678.0	2145	4x4	LTE B56	20	6723.0	2190	4x4	13.3	13.4
CA [2A][2A][2A][2A][6A]	LTE B30	10	2717.0	1QAM	1	0	9820	2585	4x4	LTE B2	20	900	1960	4x4	LTE B12	10	5955	737.5	2x2	LTE B56	20	6678.0	2145	4x4	LTE B56	20	6723.0	2190	4x4	13.4	13.4
CA [2A][2A][2A][2A][6A]	LTE B30	10	2717.0	1QAM	1	0	9820	2585	4x4	LTE B2	20	900	1960	4x4	LTE B5	10	2525	1881.5	2x2	LTE B56	20	6678.0	2145	4x4	LTE B56	20	6723.0	2190	4x4	13.3	13.4

H.2.9 LTE Band 7 as PCC

Table H-10
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power					
	PCC BW [MHz]	PCC (LA) Freq. [MHz]	PCC (LA) Mod.	PCC L1 RB Offset	PCC L1 RB Offset Ch.	PCC (LA) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (LA) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (LA) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (LA) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (LA) Freq. [MHz]	DL Ant. Config.	LTE L1 Power with CA [dBm]	LTE Single Carrier Tx Power [dBm]							
CA [2A] [2A] [2A] [2A] [6GA]	LTE B7	10	21,100	2538	25GQAM	1	25	3200	2655	4nT	LTE B2	20	900	1960	4nT	LTE B2	20	700	1840	4nT	LTE B12	10	5005	727.5	2nT	LTE B66	20	66705	2345	4nT	12.48	12.83
CA [2A] [2A] [2A] [2A] [2A] [6GA]	LTE B7	10	21,100	2538	25GQAM	1	25	3200	2655	4nT	LTE B2	20	900	1960	4nT	LTE B66	20	700	1840	4nT	LTE B66	20	67238	2390	4nT	LTE B66	20	66705	2345	4nT	12.79	12.83
CA [2A] [2A] [2A] [2A] [2A] [6GA]	LTE B7	10	21,100	2538	25GQAM	1	25	3200	2655	4nT	LTE B2	20	900	1960	4nT	LTE B5	10	2525	681.5	2nT	LTE B7	20	1330	2655	4nT	LTE B66	20	66705	2345	4nT	12.78	12.83
CA [2A] [2A] [2A] [2A] [2A] [6GA]	LTE B7	10	21,100	2538	25GQAM	1	25	3200	2655	4nT	LTE B7	20	900	1960	4nT	LTE B12	10	5005	727.5	2nT	LTE B66	20	67238	2390	4nT	LTE B66	20	66705	2345	4nT	12.79	12.83
CA [2A] [2A] [2A] [2A] [2A] [6GA]	LTE B7	10	21,100	2538	25GQAM	1	25	3200	2655	4nT	LTE B7	20	2850	2630	4nT	LTE B2	20	900	1960	4nT	LTE B66	20	66705	2345	4nT	LTE B66	20	67238	2390	4nT	12.74	12.83
CA [2A] [2A] [2A] [2A] [2A] [6GA]	LTE B7	10	21,100	2538	25GQAM	1	25	3200	2655	4nT	LTE B7	20	2595	2640.5	4nT	LTE B2	20	900	1960	4nT	LTE B66	20	66705	2345	4nT	LTE B66	20	67238	2390	4nT	12.80	12.83
CA [2A] [2A] [2A] [2A] [2A] [6GA]	LTE B7	10	21,100	2538	25GQAM	1	25	3200	2655	4nT	LTE B7	20	2595	2640.5	4nT	LTE B12	10	5005	727.5	2nT	LTE B66	20	67238	2390	4nT	LTE B66	20	66705	2345	4nT	12.78	12.83

H.2.10 LTE Band 41 as PCC

Table H-11
Maximum Output Powers

		PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power				
Combination	PCC Band	PCC BW [MHz]	PCC [U] Ch.	PCC [U] Freq [MHz]	Mod.	PCC UL# RB	PCC UL# RB Offset	PCC [D] Ch.	PCC [D] Freq [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [D] Ch.	SCC [D] Freq [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [D] Ch.	SCC [D] Freq [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [D] Ch.	SCC [D] Freq [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [D] Ch.	SCC [D] Freq [MHz]	DL Ant. Config.	LTE Tx Power with CA Enabled (dBm)	LTE Sgnl. Carrier Power (dBm)
CA #1412 #1413	LTE B41	10	39740	2508	QPSK	25	12	39740	2508	4ant	LTE B41	20	39804	2518.4	4ant	LTE B41	20	42004	2640.4	4ant	LTE B41	20	41260	2600.2	4ant	LTE B41	20	41480	2600	4ant	13.7	13.7
CA #1413 #1414	LTE B41	10	39740	2508	QPSK	25	12	39740	2508	4ant	LTE B41	20	39804	2518.4	4ant	LTE B41	20	40982	2602.2	4ant	LTE B41	20	41262	2600.2	4ant	LTE B41	20	41480	2600	4ant	13.56	13.58

H.3 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.

H.3.1 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 H-12
Maximum Output Powers

Combination	PCC									SCC 1									Power	
	PCC Band	PCC BW [MHz]	PCC [UL] Freq. [MHz]	Mod.	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	ULCA Tx Power (dBm)
CA [7C]	LTE B7	20	20850	QPSK	1	99	2850	4x4	LTE B7	20	21048	2529.8	QPSK	1	0	3048	2649.8	4x4	12.76	12.76

Table H-13
Maximum Output Powers

Combination	PCC									SCC 1									Power	
	PCC Band	PCC BW [MHz]	PCC [UL] Freq. [MHz]	Mod.	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	ULCA Tx Power (dBm)
CA [41C][41A]	LTE B41	20	41400	QPSK	1	0	41400	4x4	LTE B41	20	41204	2660.2	QPSK	1	0	41204	2660.2	4x4	13.84	13.84
CA [41C][41A]	LTE B41	20	41400	QPSK	1	0	41400	4x4	LTE B41	20	41204	2660.2	QPSK	1	0	41204	2660.2	4x4	13.84	13.84
CA [41C][41A]	LTE B41	20	41400	QPSK	1	0	41400	4x4	LTE B41	20	41204	2660.2	QPSK	1	0	41204	2660.2	4x4	13.84	13.84
CA [41C]	LTE B41	20	41400	QPSK	1	0	41400	4x4	LTE B41	20	41204	2660.2	QPSK	1	0	41204	2660.2	4x4	13.84	13.84
CA [41C][41D]	LTE B41	20	41400	QPSK	1	0	41400	4x4	LTE B41	20	41204	2660.2	QPSK	1	0	41204	2660.2	4x4	13.84	13.84
CA [41C][41D]	LTE B41	20	41400	QPSK	1	0	41400	4x4	LTE B41	20	41204	2660.2	QPSK	1	0	41204	2660.2	4x4	13.84	13.84

Table H-14
Maximum Output Powers

Combination	PCC									SCC 1									Power	
	PCC Band	PCC BW [MHz]	PCC [UL] Freq. [MHz]	Mod.	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	ULCA Tx Power (dBm)
CA [48C]	LTE B48	20	56640	QPSK	50	0	56640	4x4	LTE B48	20	56442	3670.2	QPSK	50	50	56442	3670.2	4x4	13.96	13.96
CA [48C]	LTE B48	20	56640	QPSK	50	0	56640	4x4	LTE B48	20	56442	3670.2	QPSK	50	50	56442	3670.2	4x4	13.97	13.96
CA [48C]	LTE B48	20	56640	QPSK	50	0	56640	4x4	LTE B48	20	56442	3670.2	QPSK	50	50	56442	3670.2	4x4	13.97	13.96
CA [48C]	LTE B48	20	56640	QPSK	50	0	56640	4x4	LTE B48	20	56442	3670.2	QPSK	50	50	56442	3670.2	4x4	13.97	13.96

FCC ID: BCGA3267	RF EXPOSURE PART 1 TEST REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX H: Page 6 of 7

FCC ID: BCGA3267	RF EXPOSURE PART 1 TEST REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX H: Page 7 of 7