

APPENDIX F: DOWNLINK LTE CA RF CONDUCTED POWERS

FCC ID: BCGA2435	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX F: Page 1 of 14

F.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 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 F-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_2C	5, 10, 15, 20		Yes	CC41	CA_2A-2A-4A	5, 10, 15, 20		No	CC71	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC101	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC2	CA_2A-2A	5, 10, 15, 20		Yes	CC42	CA_2A-2A-4A	5, 10, 15, 20		No	CC72	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC102	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC3	CA_2A-2A-4A	5, 10, 15, 20		Yes	CC43	CA_2A-2A-4A	5, 10, 15, 20		No	CC73	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC103	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC4	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC44	CA_2A-2A-4A	5, 10, 15, 20		No	CC74	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC104	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC5	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC45	CA_2A-2A-4A	5, 10, 15, 20		No	CC75	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC105	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC6	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC46	CA_2A-2A-4A	5, 10, 15, 20		No	CC76	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC106	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC7	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC47	CA_2A-2A-4A	5, 10, 15, 20		No	CC77	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC107	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC8	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC48	CA_2A-2A-4A	5, 10, 15, 20		No	CC78	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC108	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC9	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC49	CA_2A-2A-4A	5, 10, 15, 20		No	CC79	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC109	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC10	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC50	CA_2A-2A-4A	5, 10, 15, 20		No	CC80	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC110	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC11	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC51	CA_2A-2A-4A	5, 10, 15, 20		No	CC81	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC111	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC12	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC52	CA_2A-2A-4A	5, 10, 15, 20		No	CC82	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC112	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC13	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC53	CA_2A-2A-4A	5, 10, 15, 20		No	CC83	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC113	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC14	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC54	CA_2A-2A-4A	5, 10, 15, 20		No	CC84	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC114	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC15	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC55	CA_2A-2A-4A	5, 10, 15, 20		No	CC85	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC115	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC16	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC56	CA_2A-2A-4A	5, 10, 15, 20		No	CC86	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC116	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC17	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC57	CA_2A-2A-4A	5, 10, 15, 20		No	CC87	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC117	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC18	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC58	CA_2A-2A-4A	5, 10, 15, 20		No	CC88	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC118	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC19	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC59	CA_2A-2A-4A	5, 10, 15, 20		No	CC89	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC119	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC20	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC60	CA_2A-2A-4A	5, 10, 15, 20		No	CC90	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC120	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC21	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC61	CA_2A-2A-4A	5, 10, 15, 20		No	CC91	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC121	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC22	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC62	CA_2A-2A-4A	5, 10, 15, 20		No	CC92	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC122	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC23	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC63	CA_2A-2A-4A	5, 10, 15, 20		No	CC93	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC123	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC24	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC64	CA_2A-2A-4A	5, 10, 15, 20		No	CC94	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC124	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC25	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC65	CA_2A-2A-4A	5, 10, 15, 20		No	CC95	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC125	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC26	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC66	CA_2A-2A-4A	5, 10, 15, 20		No	CC96	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC126	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC27	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC67	CA_2A-2A-4A	5, 10, 15, 20		No	CC97	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC127	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC28	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC68	CA_2A-2A-4A	5, 10, 15, 20		No	CC98	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC128	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC29	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC69	CA_2A-2A-4A	5, 10, 15, 20		No	CC99	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC129	CA_2A-2A-4A-6A	5, 10, 15, 20		No
CC30	CA_2A-2A-4A-12A	5, 10, 15, 20		Yes	CC70	CA_2A-2A-4A	5, 10, 15, 20		No	CC100	CA_2A-2A-4A-12A	5, 10, 15, 20		No	CC130	CA_2A-2A-4A-6A	5, 10, 15, 20		No

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

Index	ZCC	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 [2C]	5, 10, 15, 20		Yes	CC1	CA [2A]-2A-4A	5, 10, 15, 20		No	CC1	CA [2A]-5B-66A	5, 10, 15, 20		No
CC2	CA [2A]-2A	5, 10, 15, 20		Yes	CC2	CA [2A]-2A-5A	5, 10, 15, 20		No	CC2	CA 2A-5B (66A)	5, 10, 15, 20		No
CC3	CA [2A]-2A-4A	5, 10, 15, 20		Yes	CC3	CA [2A]-2A-5A	5, 10, 15, 20		No	CC3	CA [2A]-5A-66B	5, 10, 15, 20		No
CC4	CA [2A]-4A [2]	5, 10, 15, 20		No	CC4	CA [2A]-2A-13A	5, 10, 15, 20		No	CC4	CA 2A-5A (66B)	5, 10, 15, 20		No
CC5	CA [2A]-4A [2]	5, 10, 15, 20		No	CC5	CA [2A]-2A-13A	5, 10, 15, 20		No	CC5	CA [2A]-5A-66C	5, 10, 15, 20		No
CC6	CA [2A]-4A [2]	5, 10, 15, 20		No	CC6	CA [2A]-2A-13A	5, 10, 15, 20		No	CC6	CA [2A]-5A-66C	5, 10, 15, 20		No
CC7	CA [2A]-13A [1]	5, 10, 15, 20		No	CC7	CA [2C]-66A	5, 10, 15, 20		No	CC7	CA [2A]-5A-66C	5, 10, 15, 20		No
CC8	CA [2A]-13A	5, 10, 15, 20		No	CC8	CA [2C]-66A	5, 10, 15, 20		No	CC8	CA [2A]-5A-66C	5, 10, 15, 20		No
CC9	CA [2A]-13A	5, 10, 15, 20		No	CC9	CA [2C]-66A	5, 10, 15, 20		No	CC9	CA [2A]-5A-66C	5, 10, 15, 20		No
CC10	CA [2A]-2A [2]	5, 10, 15, 20		No	CC10	CA [2C]-66A	5, 10, 15, 20		No	CC10	CA [2A]-5A-66C	5, 10, 15, 20		No
CC11	CA [2A]-2A [2]	5, 10, 15, 20		No	CC11	CA [2A]-2A-71A	5, 10, 15, 20		No	CC11	CA [2A]-5A-66C	5, 10, 15, 20		No
CC12	CA [2A]-2A [2]	5, 10, 15, 20		No	CC12	CA [2A]-2A-71A	5, 10, 15, 20		No	CC12	CA [2A]-5A-66C	5, 10, 15, 20		No
CC13	CA [2A]-2A [2]	5, 10, 15, 20		No	CC13	CA [2A]-2A-71A	5, 10, 15, 20		No	CC13	CA [2A]-5A-66C	5, 10, 15, 20		No
CC14	CA [2A]-2A [2]	5, 10, 15, 20		No	CC14	CA [2A]-2A-71A	5, 10, 15, 20		No	CC14	CA [2A]-5A-66C	5, 10, 15, 20		No
CC15	CA [2A]-2A [2]	5, 10, 15, 20		No	CC15	CA [2A]-2A-71A	5, 10, 15, 20		No	CC15	CA [2A]-5A-66C	5, 10, 15, 20		No
CC16	CA [2A]-2A [2]	5, 10, 15, 20		No	CC16	CA [2A]-2A-71A	5, 10, 15, 20		No	CC16	CA [2A]-5A-66C	5, 10, 15, 20		No
CC17	CA [2A]-2A [2]	5, 10, 15, 20		No	CC17	CA [2A]-2A-71A	5, 10, 15, 20		No	CC17	CA [2A]-5A-66C	5, 10, 15, 20		No
CC18	CA [2A]-2A [2]	5, 10, 15, 20		No	CC18	CA [2A]-2A-71A	5, 10, 15, 20		No	CC18	CA [2A]-5A-66C	5, 10, 15, 20		No
CC19	CA [2A]-2A [2]	5, 10, 15, 20		No	CC19	CA [2A]-2A-71A	5, 10, 15, 20		No	CC19	CA [2A]-5A-66C	5, 10, 15, 20		No
CC20	CA [2A]-2A [2]	5, 10, 15, 20		No	CC20	CA [2A]-2A-71A	5, 10, 15, 20		No	CC20	CA [2A]-5A-66C	5, 10, 15, 20		No
CC21	CA [2A]-2A [2]	5, 10, 15, 20		No	CC21	CA [2A]-2A-71A	5, 10, 15, 20		No	CC21	CA [2A]-5A-66C	5, 10, 15, 20		No
CC22	CA [2A]-2A [2]	5, 10, 15, 20		No	CC22	CA [2A]-2A-71A	5, 10, 15, 20		No	CC22	CA [2A]-5A-66C	5, 10, 15, 20		No
CC23	CA [2A]-2A [2]	5, 10, 15, 20		No	CC23	CA [2A]-2A-71A	5, 10, 15, 20		No	CC23	CA [2A]-5A-66C	5, 10, 15, 20		No
CC24	CA [2A]-2A [2]	5, 10, 15, 20		No	CC24	CA [2A]-2A-71A	5, 10, 15, 20		No	CC24	CA [2A]-5A-66C	5, 10, 15, 20		No
CC25	CA [2A]-2A [2]	5, 10, 15, 20												

F.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. All LTE bandwidth conducted powers needed for PCC uplink configuration selection can be found in Section 8.2 and appendix F. 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.

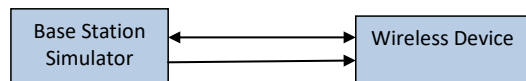


Figure F-1
DL CA Power Measurement Setup

FCC ID: BCGA2435	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX F: Page 3 of 14

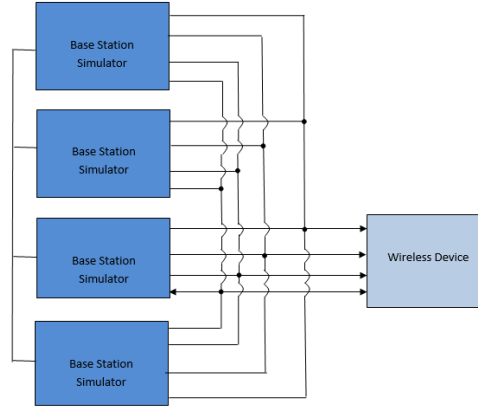


Figure F-2
DL CA with DL 4x4 MIMO Power Measurement Setup

F.3 Downlink Carrier Aggregation RF Conducted Powers

F.3.1 LTE Band 71 as PCC

Table F-3
Maximum Output Powers – Antenna 3

Combination	PCC Band	PCC BW [MHz]	PCC						SCC 1				SCC 2				SCC 3				LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)								
			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]							
CA 46A-71A	LTE B71	20	133297	680.5	QPSK	1	99	66761	634.5	LTE B48	20	900	1960	3625	-	-	-	-	-	-	-	-	-	-	-	-	-	20.82	20.83	
CA 2A-6A-71A	LTE B71	20	133297	680.5	QPSK	1	99	66761	634.5	LTE B4	20	900	1960	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	-	20.76	20.83
CA 4A-4A-71A	LTE B71	20	133297	680.5	QPSK	1	99	66761	634.5	LTE B4	20	900	1960	2175	2132.5	2150	-	-	-	-	-	-	-	-	-	-	-	-	20.69	20.83
CA 2A-6A-71A	LTE B71	20	133297	680.5	QPSK	1	99	66761	634.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	2164.8	-	-	20.82	20.83
CA 2A-6A-66A-71A	LTE B71	20	133297	680.5	QPSK	1	99	66761	634.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2190	2164.8	-	-	-	-	-	-	20.85	20.83
CA 2A-66C-71A	LTE B71	20	133297	680.5	QPSK	1	99	66761	634.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	-	-	-	-	-	-	-	20.83	20.83

F.3.2 LTE Band 12 as PCC

Table F-4
Maximum Output Powers – Antenna 1

Combination	PCC Band	PCC BW [MHz]	PCC						SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)					
			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]				
CA 2A-12A (1)	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.47	19.27	
CA 4A-12A (1)	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.48	19.27	
CA 4A-12A (2)	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.48	19.27	
CA 12A-25A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B25	20	8365	1902.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.43	19.27	
CA 12A-46A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B66	20	66669	1607.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.50	19.27	
CA 12A-66A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B66	20	66669	1602.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.49	19.27	
CA 12A-66A (1)	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.45	19.27	
CA 12A-66A (2)	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.45	19.27	
CA 25A-12A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B2	20	66188	2044.8	-	-	-	-	-	-	-	-	19.05	19.27
CA 12A-48C	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B48	20	65550	3625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.11	19.27	
CA 2A-2A-4A-12A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	19.88	19.27
CA 2A-2A-7A-12A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B4	10	2550	2150	-	-	-	-	-	-	-	-	19.91	19.27
CA 2A-4A-12A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B7	20	3100	2605	-	-	-	-	-	-	-	-	19.82	19.27
CA 2A-4A-12A-33A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B30	10	4920	2355	-	-	-	-	-	-	-	-	19.90	19.27
CA 2A-4A-12B	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B12	10	5107	738.7	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	19.89	19.27
CA 2A-12A-60C	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	-	-	-	-	-	-	-	-	19.87	19.27
CA 4A-4A-12A-33A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B4	20	2175	2132.5	LTE B4	10	2550	2150	LTE B30	10	4920	2355	-	-	-	-	-	-	-	-	19.90	19.27
CA 4A-4A-12B	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B12	10	5107	738.7	LTE B4	20	2175	2132.5	LTE B4	10	2550	2150	-	-	-	-	-	-	-	-	19.76	19.27
CA 2A-2A-7A-12A-66A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B7	20	3100	2605	LTE B66	20	66786	2145	-	-	-	-	19.94	19.27
CA 2A-2A-7A-33A-66A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	4920	2355	LTE B66	20	66786	2145	-	-	-	-	19.95	19.27
CA 2A-2A-12A-66A-66A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	67236	2190	LTE B66	20	67236	2190	-	-	-	-	19.23	19.27
CA 2A-12A-33A-66A-66A	LTE B12	5	23035	701.5	16QAM	1	12	6035	731.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	19.25	19.27

FCC ID: BCGA2435	SAR EVALUATION REPORT	Approved by:
DUT Type:		Technical Manager
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F.3.3 LTE Band 13 as PCC

Table F-5
Maximum Output Powers – Antenna 1

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]					
				PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	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]			
CA 2A-1A-13A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B4	20	2175	2122.5	-	-	-	-	-	-	-	-	-	-	19.75	20.06	
CA 2A-13A-48A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B48	20	5065	5537.5	-	-	-	-	-	-	-	-	-	-	19.13	20.06	
CA 2A-13A-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B66	20	5065	5537.5	-	-	-	-	-	-	-	-	-	-	19.89	20.06	
CA 4A-1A-13A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B4	20	2175	2122.5	LTE B4	10	2350	2150	-	-	-	-	-	-	-	-	-	-	19.77	20.06	
CA 13A-48A-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B48	20	4700	5180	-	-	-	-	-	-	-	-	-	-	18.88	20.06	
CA 13A-48A-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B66	20	4678	2145	-	-	-	-	-	-	-	-	-	-	19.14	20.06	
CA 13A-48A-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B48	20	5530	3560	-	-	-	-	-	-	-	-	-	-	19.97	20.06	
CA 13A-48A-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B66	20	4678	2145	-	-	-	-	-	-	-	-	-	-	19.85	20.06	
CA 2A-7A-13A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B7	20	3100	2655	-	-	-	-	-	-	-	-	-	-	19.75	20.06	
CA 2A-7A-48C	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B48	20	5065	5537.5	LTE B48	20	5042	5517.7	-	-	-	-	-	-	-	19.79	20.06
CA 2A-13A-48C	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B48	20	5590	3625	-	-	-	-	-	-	-	-	-	-	-	19.77	20.06
CA 2A-13A-66B	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B66	15	4687	2145	LTE B66	15	4687	2145	-	-	-	-	-	-	-	19.48	20.06
CA 2A-13A-66C	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B66	15	4687	2145	LTE B66	20	4694	2145	-	-	-	-	-	-	-	19.75	20.06
CA 13A-48C-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B66	20	4678	2145	-	-	-	-	-	-	-	-	-	-	-	19.75	20.06
CA 13A-48C-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B48	20	4678	2145	-	-	-	-	-	-	-	-	-	-	-	19.90	20.06
CA 13A-48A-66B	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	4678	2145	LTE B66	15	4718	2145	-	-	-	-	-	-	-	-	-	-	-	19.74	20.06
CA 13A-66A-66C	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B66	20	4678	2145	LTE B66	20	6708	2170.2	LTE B66	20	6735	2180	-	-	-	-	-	-	-	19.70	20.06
CA 2A-7A-13A-48A-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B7	20	3100	2655	LTE B66	20	4678	2145	LTE B66	20	4728	2180	4728	2180	19.87	20.06	
CA 2A-7A-13A-48A-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B7	20	3100	2655	LTE B66	20	4695	2180	LTE B66	20	4695	2180	4695	2180	19.71	20.06	
CA 2A-13A-48D	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B2	20	900	1960	LTE B48	20	5065	5537.5	LTE B48	20	5083	5537.7	LTE B48	20	5083	5537.7	-	-	19.91	20.06	
CA 13A-48D-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B48	20	5047	5517.7	LTE B48	20	5065	5517.7	LTE B66	20	4678	2145	-	-	19.16	20.06	
CA 13A-48E	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B48	20	5047	5517.7	LTE B48	20	5083	5537.7	LTE B48	20	5083	5537.7	-	-	20.00	20.06	
CA 13A-48D-66A	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B48	20	5618	3644.8	LTE B48	20	5635	3644.6	LTE B66	20	4678	2145	-	-	19.85	20.06	
CA 13A-48E	LTE B13	10	2320	752	16QAM	1	0	5230	751	LTE B48	20	5065	5537.5	LTE B48	20	5618	3644.8	LTE B48	20	5618	3644.8	LTE B48	20	5618	3644.8	-	-	19.84	20.06	

F.3.4 LTE Band 14 as PCC

Table F-6
Maximum Output Powers – Antenna 1

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]				
				PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	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]		
CA 2A-2A-14A-30A-66A	LTE B14	10	2330	753	16QAM	1	25	5330	753	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	15	4820	2355	LTE B66	20	4678	2145	4728	2180	19.77	20.00
CA 2A-2A-14A-30A-66A	LTE B14	10	2330	753	16QAM	1	25	5330	753	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	4678	2145	LTE B66	20	4728	2180	4728	2180	19.70	20.00
CA 2A-13A-20A-30A-66A	LTE B14	10	2330	753	16QAM	1	25	5330	753	LTE B2	20	900	1960	LTE B30	15	4820	2355	LTE B66	20	4678	2145	LTE B66	20	4728	2180	4728	2180	19.74	20.00

F.3.5 LTE Band 26 as PCC

Table F-7
Maximum Output Powers – Antenna 1

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				SCC 1				SCC 2				LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]													
				PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	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]											
CA 7A-26A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	LTE B7	20	3100	2655	-	-	-	-	-	-	-	-	-	-	-	-	19.15	19.10			
CA 25A-26A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	LTE B25	20	8365	1962.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.19	19.10	
CA 26A-41A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	LTE B41	20	40620	2593	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.05	19.10	
CA 7A-7A-26A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	LTE B7	20	3100	2655	LTE B7	20	2850	2850	2630	-	-	-	-	-	-	-	-	-	19.07	19.10	
CA 25A-25A-26A	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	LTE B25	20	8365	1962.5	LTE B25	20	8500	1965	-	-	-	-	-	-	-	-	-	-	-	18.98	19.10
CA 26A-41C	LTE B26	5	26715	816.5	16QAM	1	12	8715	861.5	LTE B41	20	40620	2593	LTE B41	20	40422	2573.2	-	-	-	-	-	-	-	-	-	-	-	19.02	19.10

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F.3.8 LTE Band 25 as PCC

Table F-10
Maximum Output Powers – Antenna 3

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC			Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel		SCC 1		SCC 2		SCC 3		SCC 4		LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)						
				PCC (UL) Freq. [MHz]	PCC (UL) Freq. [MHz]	PCC (UL) 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]
CA_5A-25A	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	15.98	16.00				
CA_12A-25A	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B12	10	5005	737.5	-	-	-	-	-	-	-	-	15.97	16.00				
CA_25A-25A	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B5	10	5005	876.5	-	-	-	-	-	-	-	-	15.98	16.00				
CA_25A-45A	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B46	20	5005	557.5	-	-	-	-	-	-	-	-	15.99	16.00				
CA_25A-25A-25A	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B25	20	8500	1885	LTE B20	5	8865	876.5	-	-	-	-	-	15.97	16.00			
CA_25A-55A-41A	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B25	20	8500	1885	LTE B41	20	40020	2500	-	-	-	-	-	16.05	16.00			
CA_25A-41C	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B41	20	40020	2500	LTE B41	20	40022	2573.2	-	-	-	-	-	16.04	16.00			
CA_25A-45C	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B46	20	5005	557.5	LTE B46	20	50467	5517.7	-	-	-	-	-	16.03	16.00			
CA_7A-7A-25A-55A	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B7	20	3100	2650	LTE B7	20	2650	2630	LTE B66	20	66786	2145	-	-	16.01	16.00		
CA_25A-25A-41C	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B25	20	8500	1885	LTE B41	20	40020	2500	LTE B41	20	40022	2573.2	-	-	16.04	16.00		
CA_25A-45C	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B46	20	5005	557.5	LTE B46	20	50467	5517.7	LTE B46	20	50063	5507.3	-	-	16.02	16.00		
CA_25A-25A-41D	LTE B25	20	26140	1860	QPSK	60	25	8140	1840	LTE B25	20	8500	1885	LTE B41	20	40022	2573.2	LTE B41	20	40020	2500	LTE B41	20	40018	2423.8	16.07	16.00

F.3.9 LTE Band 30 as PCC

Table F-11
Maximum Output Powers – Antenna 3

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC			Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel		SCC 1		SCC 2		SCC 3		SCC 4		LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)						
				PCC (UL) Freq. [MHz]	PCC (UL) Freq. [MHz]	PCC (UL) 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]
CA_2C-30A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B2	20	702	1940.2	-	-	-	-	17.90	17.95				
CA_2A-4A-5A-30A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	-	-	17.46	17.96		
CA_2A-4A-2A-30A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B20	10	9715	722.5	-	-	17.64	17.96		
CA_4A-4A-2A-30A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B4	20	2175	2132.5	LTE B4	20	2150	2150	LTE B5	10	2525	881.5	-	-	17.62	17.96		
CA_4A-4A-2A-30A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B4	20	2175	2132.5	LTE B4	20	2150	2150	LTE B12	10	9595	717.5	-	-	17.48	17.96		
CA_2A-30A-66A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B20	10	9715	722.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	17.45	17.96		
CA_30A-66A-66A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B66	20	66786	2145	LTE B66	20	67236	2190	LTE B66	20	66536	2120	-	-	17.17	17.96		
CA_2A-2A-30A-66A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B5	10	2525	881.5	-	-	17.92	17.96		
CA_2A-2A-12A-30A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B12	20	700	1940	LTE B12	20	5995	737.5	LTE B66	20	66786	2145	17.85	17.96
CA_2A-2A-12A-30A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B12	20	700	1940	LTE B14	10	5330	763	LTE B66	20	66786	2145	17.87	17.96
CA_2A-2A-12A-30A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B12	20	700	1940	LTE B12	20	5995	737.5	LTE B66	20	66786	2145	17.91	17.96
CA_2A-2A-12A-30A-66A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B12	20	700	1940	LTE B12	20	5995	737.5	LTE B66	20	66786	2145	17.91	17.96
CA_2A-2A-30A-66A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B66	20	67236	2190	LTE B66	20	67236	2190	17.88	17.96
CA_2A-3A-30A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B66	20	67236	2190	LTE B66	20	67236	2190	17.88	17.96
CA_2A-14A-30A-66A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B2	20	900	1960	LTE B14	10	5330	763	LTE B66	20	66786	2145	LTE B66	20	67236	2190	17.86	17.96
CA_9B-30A-66A-66A	LTE B30	5	27710	2310	16QAM	1	12	9820	2355	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	LTE B66	20	66786	2145	LTE B66	20	66786	2145	17.89	17.96

F.3.10 LTE Band 7 as PCC

Table F-12
Maximum Output Powers – Antenna 3

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC			Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel		SCC 1		SCC 2		SCC 3		SCC 4		LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)				
				PCC (UL) Freq. [MHz]	PCC (UL) Freq. [MHz]	PCC (UL) 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]
CA_5A-7A	LTE B7	10	21400	2565	16QAM	1	49	3400	2685	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	14.97	14.97		
CA_7A-26A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B20	10	8865	876.5	-	-	-	-	-	-	-	-	15.12	14.97		
CA_7A-9A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B20	10	8865	876.5	-	-	-	-	-	-	-	-	15.15	14.97		
CA_7A-66A (1)	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B66	20	66786	2145	LTE B66	20	66786	2145	-	-	-	-	15.16	14.97		
CA_7B	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B7	15	3332	2679.2	-	-	-	-	-	-	-	-	15.13	14.97		
CA_4A-7A (1)	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B4	20	2175	2132.5	LTE B4	20	2150	2150	-	-	-	-	14.83	14.97		
CA_7A-7A-26A	LTE B7	10	21400	2565	16QAM	1	49	3400	2685	LTE B7	20	2850	2630	LTE B20	10	8865	876.5	-	-	-	-	14.61	14.94		
CA_7A-66C (1)	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B66	20	66786	2145	LTE B66	20	66786	2145	-	-	-	-	14.87	14.97		
CA_7C-46A	LTE B7	20	21300	2550	QPSK	50	25	3350	2580	LTE B7	20	3152	2650.2	LTE B46	20	50065	5537.5	-	-	-	-	14.83	14.81		
CA_2A-4A-7A-7A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B7	20	2850	2630	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	14.58	14.97
CA_2A-4A-7A-26A	LTE B7	5	21425	2567.5	16QAM	1	12	3425	2687.5	LTE B7	20	900	1960	LTE B4	20	2175	2132.5	LTE B4	20	2175	2132.5	-	-	14.95	14.97
CA_2A-4A-7C	LTE B7	10	21400	2565	16QAM	1	49	3400	2685	LTE B7	20	3206	2670.6	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	14.44	14.91
CA_2A-5A-7C	LTE B7	10	21400	2565	16QAM	1	49	3400	2685	LTE B7	20	3206	2670.6	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	14.53	14.91
CA_2A-7C-15A	LTE B7	10	21400	2565	16QAM	1	49	3400	2685	LTE B7	20	3206	2670.6	LTE B2	20	900	1960	LTE B15	10	5020	765	-	-		

F.3.12 LTE Band 48 as PCC

Table F-14
Maximum Output Powers – Antenna 3

Combination	PCC											SCC 1				SCC 2				SCC 3				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]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	DL Ant. Config.	LTE Tx. Power with DL CA Enabled [dBm]	LTE Single Carrier Tx. Power [dBm]	
CA 48B	LTE B48	10	56203	3646.3	QPSK	1	0	56223	3646.3		LTE B48	10	56104	3638.4													13.53	13.53
CA 48A-48C	LTE B48	20	56207	3646.7	QPSK	50	25	56207	3646.7		LTE B48	20	55340	3590		LTE B48	20	55338	3579.8								13.55	13.58
CA 48C-48A	LTE B48	20	56207	3646.7	QPSK	50	25	56207	3646.7		LTE B48	20	56009	3628.9		LTE B48	20	55340	3590								13.63	13.58
CA 2A-48A-48A-48A	LTE B48	20	56207	3646.7	QPSK	50	25	56207	3646.7		LTE B48	20	55340	3590		LTE B48	20	56940	3690	LTE B2	20	900	1960				13.59	13.58
CA 13A-48A-48A-48A	LTE B48	20	56207	3646.7	QPSK	50	25	56207	3646.7		LTE B48	20	55340	3590		LTE B48	20	56940	3690	LTE B13	10	5230	751				13.63	13.58
CA 48A-48A-48A-66A	LTE B48	20	56207	3646.7	QPSK	50	25	56207	3646.7		LTE B48	20	55340	3590		LTE B48	20	56940	3690	LTE B66	20	66786	2145				13.62	13.58

F.4 DLCA 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 F.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.

F.4.1 LTE 4x4 MIMO DL Standalone Powers

Table F-15
Maximum Output Powers – Antenna 3

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	131997	1712.5	16QAM	1	12	15.13	14.98	15.0
25	20	26140	1860	QPSK	50	25	16.03	16.00	15.9
30	5	27710	2310	16QAM	1	12	18.16	17.96	17.5
7	5	21425	2567.5	16QAM	1	12	15.08	14.97	14.7
41	20	41490	2680	16QAM	1	50	16.82	16.73	16.2
48	20	56207	3646.7	QPSK	50	25	13.60	13.58	13.2

F.4.2 LTE Band 71 as PCC

Table F-16
Maximum Output Powers – Antenna 3

Combination	PCC											SCC 1				SCC 2				SCC 3				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 48A-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B48	20	55990	3625	4x4													20.83	20.83
CA 12A-14A-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	4x4								20.77	20.83
CA 14A-14A-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2350	4x4								20.70	20.83
CA 12A-12A-166A-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4			20.84	20.83
CA 12A-166A-166A-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4			20.78	20.83
CA 12A-166C-71A	LTE B71	20	133297	680.5	QPSK	1	99	68761	634.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4			20.81	20.83

FCC ID: BCGA2435

SAR EVALUATION REPORT

Approved by:
Technical Manager

DUT Type:
Tablet Device

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F.4.3 LTE Band 12 as PCC

Table F-17 Maximum Output Powers – Antenna 1

Table with 30 columns (Combination, PCC Band, PCC BW, PCC UL Freq, Mod, PCC UL# RB, PCC UL RB Offset, PCC (DL) Ch, PCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, LTE Tx Power with DC CA Enabled (dBm), LTE Single Carrier Tx Power (dBm)) and 15 rows of data.

F.4.4 LTE Band 13 as PCC

Table F-18 Maximum Output Powers – Antenna 1

Table with 30 columns (Combination, PCC Band, PCC BW, PCC UL Freq, Mod, PCC UL# RB, PCC UL RB Offset, PCC (DL) Ch, PCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, LTE Tx Power with DC CA Enabled (dBm), LTE Single Carrier Tx Power (dBm)) and 15 rows of data.

F.4.5 LTE Band 14 as PCC

Table F-19 Maximum Output Powers – Antenna 1

Table with 30 columns (Combination, PCC Band, PCC BW, PCC UL Freq, Mod, PCC UL# RB, PCC UL RB Offset, PCC (DL) Ch, PCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, LTE Tx Power with DC CA Enabled (dBm), LTE Single Carrier Tx Power (dBm)) and 4 rows of data.

F.4.6 LTE Band 26 as PCC

Table F-20 Maximum Output Powers – Antenna 1

Table with 30 columns (Combination, PCC Band, PCC BW, PCC UL Freq, Mod, PCC UL# RB, PCC UL RB Offset, PCC (DL) Ch, PCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, SCC Band, SCC BW, SCC (DL) Freq, DL Ant. Config, LTE Tx Power with DC CA Enabled (dBm), LTE Single Carrier Tx Power (dBm)) and 6 rows of data.

FCC ID: BCGA2435

SAR EVALUATION REPORT

Approved by: Technical Manager

DUT Type: Tablet Device

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F.4.9 LTE Band 25 as PCC

Table F-23
Maximum Output Powers – Antenna 3

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			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]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.				
CA SA-25A	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B5	10	3725	881.5	2x2	-	-	-	-	-	-	-	-	-	-	15.98	16.00									
CA SA-25B	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B12	10	3595	737.5	2x2	-	-	-	-	-	-	-	-	-	-	-	15.98	16.00								
CA SA-25C	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B20	15	3665	876.5	2x2	-	-	-	-	-	-	-	-	-	-	-	15.98	16.00								
CA SA-25D	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B46	20	30665	5337.5	2x2	-	-	-	-	-	-	-	-	-	-	-	15.98	16.00								
CA SA-25A+25B	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B25	20	8190	1885	4A	LTE B20	5	3885	876.5	2x2	-	-	-	-	-	-	-	-	15.98	16.00						
CA SA-25B+25C	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B20	20	3590	1885	4A	LTE B41	20	40020	2073.2	4x4	LTE B41	20	40020	2073.2	4x4	-	-	-	-	15.98	16.00					
CA SA-25C+25D	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B41	20	40620	2073.2	4x4	LTE B41	20	40620	2073.2	4x4	LTE B41	20	40620	2073.2	4x4	-	-	-	-	15.98	16.00					
CA SA-25A+25C	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B41	20	40620	2073.2	4x4	LTE B41	20	40620	2073.2	4x4	LTE B20	20	3590	1885	4A	-	-	-	-	15.98	16.00					
CA SA-25A+25D	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B46	20	30665	5337.5	2x2	LTE B46	20	30665	5337.5	2x2	LTE B41	20	40620	2073.2	4x4	-	-	-	-	15.98	16.00					
CA SA-25B+25D	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B46	20	30665	5337.5	2x2	LTE B46	20	30665	5337.5	2x2	LTE B20	20	3590	1885	4A	-	-	-	-	15.98	16.00					
CA SA-25A+25B+25C	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B25	20	8190	1885	4A	LTE B20	5	3885	876.5	2x2	LTE B41	20	40020	2073.2	4x4	-	-	-	-	15.98	16.00					
CA SA-25A+25B+25D	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B25	20	8190	1885	4A	LTE B46	20	30665	5337.5	2x2	LTE B41	20	40620	2073.2	4x4	-	-	-	-	15.98	16.00					
CA SA-25A+25C+25D	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B25	20	8190	1885	4A	LTE B46	20	30665	5337.5	2x2	LTE B41	20	40620	2073.2	4x4	-	-	-	-	15.98	16.00					
CA SA-25A+25B+25C+25D	LTE B25	20	2540	1860	QPSK	50	25	8140	1940	4A	LTE B25	20	8190	1885	4A	LTE B20	5	3885	876.5	2x2	LTE B46	20	30665	5337.5	2x2	LTE B41	20	40620	2073.2	4x4	-	-	-	-	15.98	16.00

F.4.10 LTE Band 30 as PCC

Table F-24
Maximum Output Powers – Antenna 3

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			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]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.																			
CA SA-30A	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B2	20	900	1860	4A	-	-	-	-	-	-	-	-	17.78	17.95																					
CA SA-30B	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	17.42	17.95																				
CA SA-30A+30B	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	17.42	17.95																				
CA SA-30C	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	17.49	17.95																				
CA SA-30A+30C	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B5	10	2525	881.5	2x2	-	-	-	-	17.50	17.95																				
CA SA-30D	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	-	-	-	-	17.51	17.96																				
CA SA-30A+30D	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B6	10	3095	212.5	2x2	LTE B5	10	2525	881.5	2x2	-	-	-	-	17.52	17.96																				
CA SA-30B+30D	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B6	10	3095	212.5	2x2	LTE B5	10	2525	881.5	2x2	-	-	-	-	17.53	17.96																				
CA SA-30C+30D	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B6	10	3095	212.5	2x2	LTE B5	10	2525	881.5	2x2	-	-	-	-	17.54	17.96																				
CA SA-30A+30B+30D	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	-	-	-	-	17.55	17.96																				
CA SA-30B+30C+30D	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	-	-	-	-	17.56	17.96																				
CA SA-30A+30C+30D	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	-	-	-	-	17.57	17.96																				
CA SA-30A+30B+30C+30D	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	-	-	-	-	17.58	17.96																				
CA SA-30B+30C+30D+30E	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	-	-	-	-	17.59	17.96															
CA SA-30A+30B+30C+30D+30E	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	-	-	-	-	17.60	17.96															
CA SA-30B+30C+30D+30E+30F	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	LTE B10	20	72230	2190	4x4	-	-	-	-	17.61	17.96										
CA SA-30A+30B+30C+30D+30E+30F	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	LTE B10	20	72230	2190	4x4	-	-	-	-	17.62	17.96										
CA SA-30C+30D+30E+30F	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	LTE B10	20	72230	2190	4x4	-	-	-	-	17.63	17.96										
CA SA-30A+30C+30D+30E+30F	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	LTE B10	20	72230	2190	4x4	-	-	-	-	17.64	17.96										
CA SA-30B+30C+30D+30E+30F+30G	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	LTE B10	20	72230	2190	4x4	LTE B11	20	77780	2240	4x4	-	-	-	-	17.65	17.96					
CA SA-30A+30B+30C+30D+30E+30F+30G	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	LTE B10	20	72230	2190	4x4	LTE B11	20	77780	2240	4x4	-	-	-	-	17.66	17.96					
CA SA-30C+30D+30E+30F+30G	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	LTE B10	20	72230	2190	4x4	LTE B11	20	77780	2240	4x4	-	-	-	-	17.67	17.96					
CA SA-30A+30C+30D+30E+30F+30G	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	LTE B10	20	72230	2190	4x4	LTE B11	20	77780	2240	4x4	-	-	-	-	17.68	17.96					
CA SA-30B+30C+30D+30E+30F+30G+30H	LTE B30	5	2710	2310	16QAM	1	12	9820	2355	4A	LTE B2	20	900	1860	4A	LTE B4	20	2175	2132.5	4x4	LTE B6	10	3095	212.5	2x2	LTE B9	20	66780	2145	4x4	LTE B10	20	72230	2190	4x4	LTE B11	20	77780	2240	4x4	LTE B12	20	83330	2290	4x4	-	-	-	-	17.69	17.96
CA SA-30A+30B+30C+30D+30E																																																			

F.5.2 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.

F.5.2.1 LTE Band 7

Table F-30
Maximum Output Powers – Antenna 3

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	14.77	14.76

F.5.2.2 LTE Band 41

Table F-31
Maximum Output Powers – Antenna 3

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 (UL) Ch.	SCC (UL) 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 (UL) Ch.	SCC (UL) 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 (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 [41C][41A]	LTE B41	20	43950	200.5	QPSK	50	0	43950	200.5	4x4	LTE B41	20	41213	2006.3	QPSK	50	0	41213	2006.3	4x4	LTE B41	20	39700	2006	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.50	13.51						
CA [41D][41A]	LTE B41	20	43950	200.5	QPSK	50	0	43950	200.5	4x4	LTE B41	20	41213	2006.3	QPSK	50	0	41213	2006.3	4x4	LTE B41	20	39700	2006	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.50	13.51						
CA [41E]	LTE B41	20	43950	200.5	QPSK	50	0	43950	200.5	4x4	LTE B41	20	41213	2006.3	QPSK	50	0	41213	2006.3	4x4	LTE B41	20	40817	2006.7	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.50	13.51						
CA [41C][41D]	LTE B41	20	43950	200.5	QPSK	50	0	43950	200.5	4x4	LTE B41	20	41213	2006.3	QPSK	50	0	41213	2006.3	4x4	LTE B41	20	39948	2006.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.49	13.49				
CA [41D][41E]	LTE B41	20	43950	200.5	QPSK	50	0	43950	200.5	4x4	LTE B41	20	41213	2006.3	QPSK	50	0	41213	2006.3	4x4	LTE B41	20	39948	2006.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.49	13.49				

F.5.2.3 LTE Band 48

Table F-32
Maximum Output Powers – Antenna 3

Combination	PCC										SCC 1										SCC 2										SCC 3										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.	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.	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 [48C]	LTE B48	20	56640	3690	QPSK	50	0	56640	3690	4x4	LTE B48	20	56642	3670.2	QPSK	50	50	56643	3670.2	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.40	13.37			
CA [48D]	LTE B48	20	56640	3690	QPSK	50	0	56640	3690	4x4	LTE B48	20	56642	3670.2	QPSK	50	50	56642	3670.2	4x4	LTE B48	20	56244	3650.4	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.38	13.37
CA [48E]	LTE B48	20	56640	3690	QPSK	50	0	56640	3690	4x4	LTE B48	20	56642	3670.2	QPSK	50	50	56642	3670.2	4x4	LTE B48	20	56244	3650.4	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.41	13.37

FCC ID: BCGA2435	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX F: Page 13 of 14

