

APPENDIX F: DOWNLINK LTE CA RF CONDUCTED POWERS

F.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 F-1 – Example of Exclusion Table for SISO Configurations

Index	ZCC	Supported Channel Bandwidth [MHz]				Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3	CC4		
CC#1	CA_12A	5,10,15,20	5,10,15,20				Yes
CC#2	CA_2A-2A	5,10,15,20	5,10,15,20				Yes
CC#3	CA_2A-2A-4A	5,10,15,20	5,10,15,20	5,10,15,20			Yes
CC#4	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#5	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20	B12 SCC Only	No
CC#6	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#7	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#8	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#9	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#10	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#11	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#12	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#13	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#14	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#15	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#16	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#17	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#18	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#19	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#20	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#21	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#22	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#23	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#24	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#25	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#26	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#27	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#28	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#29	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#30	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#31	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#32	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#33	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#34	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#35	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#36	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#37	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#38	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#39	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#40	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#41	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#42	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#43	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#44	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#45	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#46	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#47	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#48	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#49	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#50	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#51	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#52	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#53	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#54	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#55	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#56	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#57	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#58	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#59	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#60	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#61	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#62	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#63	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#64	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#65	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#66	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#67	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#68	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#69	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#70	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#71	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#72	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#73	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#74	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#75	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#76	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#77	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#78	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#79	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#80	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#81	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#82	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#83	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#84	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#85	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#86	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#87	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#88	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#89	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#90	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#91	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#92	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#93	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#94	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#95	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#96	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#97	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#98	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#99	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes
CC#100	CA_2A-2A-4A-12A	5,10,15,20	5,10,15,20	5,10,15,20	5,10,15,20		Yes

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

Index	ZCC	Supported Channel Bandwidth [MHz]				Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3	CC4		
CC#M1	CA_12A	5,10,15,20	5,10,15,20				Yes
CC#M2	CA_2A-2A	5,10,15,20	5,10,15,20				Yes
CC#M3	CA_2A-2A-4						

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 9.4 and appendix H. 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.

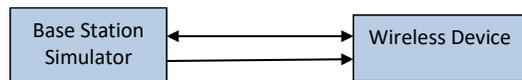


Figure F-1
DL CA Power Measurement Setup

FCC ID: A3LSMF926U	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 04/06/21 - 06/09/21	DUT Type: Portable Handset			APPENDIX F: Page 2 of 16

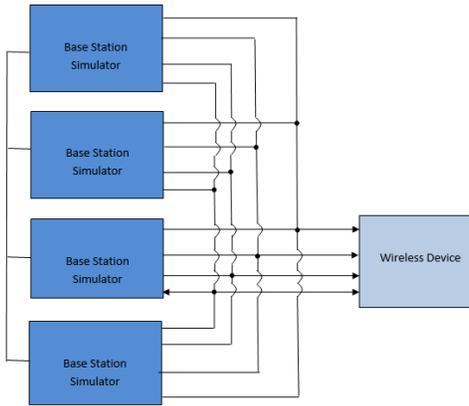


Figure F-2
DL CA with DL 4x4 MIMO Power Measurement Setup

F.3 Downlink Carrier Aggregation RF Conducted Powers

F.3.1 LTE Band 71 as PCC

Table F-3
Maximum Output Powers

Combination	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 1				SCC 2				SCC 3				LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]		
										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_4A-4A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	25.20	25.32		
CA_4B-4B-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B48	20	5590	3625	LTE B48	20	56640	3690	-	-	-	-	25.37	25.32		
CA_4BC-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B48	20	5590	3625	LTE B48	20	56188	3644.8	-	-	-	-	25.36	25.32		
CA_2A-2A-4A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	24.95	25.32		
CA_2A-2A-6B-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	67236	2150	25.25	25.32
CA_2A-6B-4A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2150	25.16	25.32		
CA_2A-6B-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	25.16	25.32		

F.3.2 LTE Band 12 as PCC

Table F-4
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) Channel	PCC (DL) Freq. [MHz]	SCC 1				SCC 2				SCC 3				LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]				
										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	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	-	24.48	24.48		
CA_4A-12A (1)	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	24.66	24.48	
CA_8A-12A (2)	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	24.66	24.48	
CA_12A-12A	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	-	-	24.67	24.48	
CA_12A-4A	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B46	20	50665	5037.5	-	-	-	-	-	-	-	-	-	-	-	24.46	24.48	
CA_12A-6A (1)	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	24.68	24.48	
CA_12A-6A (2)	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	24.68	24.48	
CA_4A-4A-12A	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	-	-	-	-	24.66	24.48
CA_12A-4C	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B46	20	50665	5037.5	LTE B46	20	50467	5517.7	-	-	-	-	-	-	-	-	24.62	24.48
CA_2A-2A-4A-12A	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	-	-	24.54	24.48
CA_2A-6B-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B2	20	700	1940	-	-	-	-	24.56	24.47
CA_2A-4A-4A-12A	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	24.64	24.48
CA_2A-4A-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	24.68	24.47
CA_2A-12A-4C	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	-	-	-	-	24.65	24.48
CA_4A-6B-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	24.65	24.47
CA_12A-4C	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B46	20	50665	5037.5	LTE B46	20	50467	5517.7	LTE B46	20	50683	5557.3	-	-	-	-	24.62	24.48
CA_2A-2A-12A-3A-6A-6B	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	8820	2355	LTE B66	20	66786	2145	24.54	24.48
CA_2A-2A-12A-6A-6B	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	67236	2150	LTE B66	20	66786	2145	24.53	24.48
CA_2A-2A-12B-6A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2150	24.65	24.47
CA_2A-12A-3A-6A-6B	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	LTE B30	10	8820	2355	LTE B66	20	66786	2145	LTE B66	20	67236	2150	24.57	24.48
CA_2A-12B-6A-6B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2150	24.61	24.47

FCC ID: A3LSMF926U



SAR EVALUATION REPORT



Reviewed by:
Quality Manager

Test Dates:
04/06/21 - 06/09/21

DUT Type:
Portable Handset

APPENDIX F:
Page 3 of 16

F.3.10

LTE Band 41 as PCC

Table F-12
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) Channel	PCC (DL) Freq. [MHz]	SCC 1				SCC 2				SCC 3				SCC 4				LTE Tx. Power with DL CA [dBm]	LTE Single Carrier Tx. Power [dBm]					
										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_41A-41A (1)	LTE B41	5	41490	2680	64QAM	1	12	41490	2680	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.76	22.77
CA_41A-41C	LTE B41	5	41490	2680	64QAM	1	12	41490	2680	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	-	-	-	-	-	22.87	22.77
CA_41C-41A	LTE B41	5	41490	2680	64QAM	1	12	41490	2680	LTE B41	20	41373	2668.3	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	-	-	-	-	-	22.86	22.77
CA_41A-41D	LTE B41	5	41490	2680	64QAM	1	12	41490	2680	LTE B41	20	40146	2545.6	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	-	22.84	22.77
CA_41D-41A	LTE B41	10	41490	2680	QPSK	1	25	41490	2680	LTE B41	20	41346	2665.6	LTE B41	20	41148	2645.8	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	-	22.95	22.74
CA_41C-41C	LTE B41	10	41490	2680	QPSK	1	25	41490	2680	LTE B41	20	41346	2665.6	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	-	22.86	22.74
CA_41E	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	41094	2640.4	LTE B41	20	40896	2620.6	-	-	-	-	-	-	-	-	-	22.99	22.49
CA_41C-41C	LTE B41	10	41490	2680	QPSK	1	25	41490	2680	LTE B41	20	41346	2665.6	LTE B41	20	40146	2545.6	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	-	-	-	-	-	22.77	22.74
CA_41D-41C	LTE B41	10	41490	2680	QPSK	1	25	41490	2680	LTE B41	20	41346	2665.6	LTE B41	20	41148	2645.8	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	-	-	-	-	-	22.76	22.74

F.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 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-13
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	5	132322	1745	QPSK	1	12	24.59	24.43	24.5
25	20	26590	1905	QPSK	1	99	24.34	24.30	24.5
30	5	27710	2310	16QAM	1	0	21.72	21.63	21.5
41	5	41490	2680	64QAM	1	12	22.71	22.77	22.0
48	20	56207	3646.7	64QAM	1	99	20.35	20.39	19.5

FCC ID: A3LSMF926U	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 04/06/21 - 06/09/21	DUT Type: Portable Handset	APPENDIX F: Page 6 of 16		

F.4.7

LTE Band 26 as PCC

Table F-19
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC					SCC 1				SCC 2				SCC 3				Power							
						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	LTE Single Carrier Tx Power (dBm)			
CA_[25A]-26A-26A	LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	2x2	LTE B25	20	8365	1962.5	4x4	LTE B25	20	8590	1985	2x2	-	-	-	-	-	-	-	-	24.82	24.72
CA_[25A]-[25A]-26A	LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	2x2	LTE B25	20	8365	1962.5	4x4	LTE B25	20	8590	1985	4x4	-	-	-	-	-	-	-	-	24.80	24.72
CA_[25A]-26A-41A	LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	2x2	LTE B25	20	8365	1962.5	4x4	LTE B41	20	40620	2593	2x2	-	-	-	-	-	-	-	-	24.87	24.72
CA_25A-26A-41A	LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	2x2	LTE B25	20	8365	1962.5	2x2	LTE B41	20	40620	2593	4x4	-	-	-	-	-	-	-	-	24.88	24.72
CA_[25A]-26A-41A	LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	2x2	LTE B25	20	8365	1962.5	4x4	LTE B41	20	40620	2593	4x4	-	-	-	-	-	-	-	-	24.85	24.72
CA_26A-41C	LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	2x2	LTE B41	20	40620	2593	4x4	LTE B41	20	40422	2573.2	4x4	-	-	-	-	-	-	-	-	24.86	24.72
CA_[25A]-26A-41C	LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	2x2	LTE B25	20	8365	1962.5	4x4	LTE B41	20	40620	2593	2x2	LTE B41	20	40422	2573.2	2x2	-	-	-	24.84	24.72
CA_26A-26A-41C	LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	2x2	LTE B25	20	8365	1962.5	2x2	LTE B41	20	40620	2593	4x4	LTE B41	20	40422	2573.2	4x4	-	-	-	24.84	24.72
CA_[25A]-26A-41C	LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	2x2	LTE B25	20	8365	1962.5	4x4	LTE B41	20	40620	2593	4x4	LTE B41	20	40422	2573.2	4x4	-	-	-	24.86	24.72

FCC ID: A3LSMF926U	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 04/06/21 - 06/09/21	DUT Type: Portable Handset	APPENDIX F: Page 10 of 16		

F.4.1

LTE Band 66 as PCC Continued

Table F-22
Maximum Output Powers

Combination	PCC Band	PCC Mod.	PCC Freq. [MHz]	PCC Ch. [MHz]	PCC Mod.	PCC Freq. [MHz]	PCC Ch. [MHz]	PCC Mod.	PCC Freq. [MHz]	PCC Ch. [MHz]	PCC Mod.	PCC Freq. [MHz]	PCC Ch. [MHz]	PCC Mod.	PCC Freq. [MHz]	PCC Ch. [MHz]	SCC				SCC				LTE Power Class 2x Power																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
																	SCC Band	SCC Mod.	SCC Freq. [MHz]	SCC Ch. [MHz]	SCC Band	SCC Mod.	SCC Freq. [MHz]	SCC Ch. [MHz]		SCC Band	SCC Mod.	SCC Freq. [MHz]	SCC Ch. [MHz]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CA 2A-12A-30A-66A-66A	LTE-BW6	12	1920.0	2140	20	1920.0	2140	20	1920.0	2140	20	1920.0	2140	20	1920.0	2140	SCC1	SCC2	SCC3	SCC4	SCC5	SCC6	SCC7	SCC8	SCC9	SCC10	SCC11	SCC12	SCC13	SCC14	SCC15	SCC16	SCC17	SCC18	SCC19	SCC20	SCC21	SCC22	SCC23	SCC24	SCC25	SCC26	SCC27	SCC28	SCC29	SCC30	SCC31	SCC32	SCC33	SCC34	SCC35	SCC36	SCC37	SCC38	SCC39	SCC40	SCC41	SCC42	SCC43	SCC44	SCC45	SCC46	SCC47	SCC48	SCC49	SCC50	SCC51	SCC52	SCC53	SCC54	SCC55	SCC56	SCC57	SCC58	SCC59	SCC60	SCC61	SCC62	SCC63	SCC64	SCC65	SCC66	SCC67	SCC68	SCC69	SCC70	SCC71	SCC72	SCC73	SCC74	SCC75	SCC76	SCC77	SCC78	SCC79	SCC80	SCC81	SCC82	SCC83	SCC84	SCC85	SCC86	SCC87	SCC88	SCC89	SCC90	SCC91	SCC92	SCC93	SCC94	SCC95	SCC96	SCC97	SCC98	SCC99	SCC100	SCC101	SCC102	SCC103	SCC104	SCC105	SCC106	SCC107	SCC108	SCC109	SCC110	SCC111	SCC112	SCC113	SCC114	SCC115	SCC116	SCC117	SCC118	SCC119	SCC120	SCC121	SCC122	SCC123	SCC124	SCC125	SCC126	SCC127	SCC128	SCC129	SCC130	SCC131	SCC132	SCC133	SCC134	SCC135	SCC136	SCC137	SCC138	SCC139	SCC140	SCC141	SCC142	SCC143	SCC144	SCC145	SCC146	SCC147	SCC148	SCC149	SCC150	SCC151	SCC152	SCC153	SCC154	SCC155	SCC156	SCC157	SCC158	SCC159	SCC160	SCC161	SCC162	SCC163	SCC164	SCC165	SCC166	SCC167	SCC168	SCC169	SCC170	SCC171	SCC172	SCC173	SCC174	SCC175	SCC176	SCC177	SCC178	SCC179	SCC180	SCC181	SCC182	SCC183	SCC184	SCC185	SCC186	SCC187	SCC188	SCC189	SCC190	SCC191	SCC192	SCC193	SCC194	SCC195	SCC196	SCC197	SCC198	SCC199	SCC200	SCC201	SCC202	SCC203	SCC204	SCC205	SCC206	SCC207	SCC208	SCC209	SCC210	SCC211	SCC212	SCC213	SCC214	SCC215	SCC216	SCC217	SCC218	SCC219	SCC220	SCC221	SCC222	SCC223	SCC224	SCC225	SCC226	SCC227	SCC228	SCC229	SCC230	SCC231	SCC232	SCC233	SCC234	SCC235	SCC236	SCC237	SCC238	SCC239	SCC240	SCC241	SCC242	SCC243	SCC244	SCC245	SCC246	SCC247	SCC248	SCC249	SCC250	SCC251	SCC252	SCC253	SCC254	SCC255	SCC256	SCC257	SCC258	SCC259	SCC260	SCC261	SCC262	SCC263	SCC264	SCC265	SCC266	SCC267	SCC268	SCC269	SCC270	SCC271	SCC272	SCC273	SCC274	SCC275	SCC276	SCC277	SCC278	SCC279	SCC280	SCC281	SCC282	SCC283	SCC284	SCC285	SCC286	SCC287	SCC288	SCC289	SCC290	SCC291	SCC292	SCC293	SCC294	SCC295	SCC296	SCC297	SCC298	SCC299	SCC300	SCC301	SCC302	SCC303	SCC304	SCC305	SCC306	SCC307	SCC308	SCC309	SCC310	SCC311	SCC312	SCC313	SCC314	SCC315	SCC316	SCC317	SCC318	SCC319	SCC320	SCC321	SCC322	SCC323	SCC324	SCC325	SCC326	SCC327	SCC328	SCC329	SCC330	SCC331	SCC332	SCC333	SCC334	SCC335	SCC336	SCC337	SCC338	SCC339	SCC340	SCC341	SCC342	SCC343	SCC344	SCC345	SCC346	SCC347	SCC348	SCC349	SCC350	SCC351	SCC352	SCC353	SCC354	SCC355	SCC356	SCC357	SCC358	SCC359	SCC360	SCC361	SCC362	SCC363	SCC364	SCC365	SCC366	SCC367	SCC368	SCC369	SCC370	SCC371	SCC372	SCC373	SCC374	SCC375	SCC376	SCC377	SCC378	SCC379	SCC380	SCC381	SCC382	SCC383	SCC384	SCC385	SCC386	SCC387	SCC388	SCC389	SCC390	SCC391	SCC392	SCC393	SCC394	SCC395	SCC396	SCC397	SCC398	SCC399	SCC400	SCC401	SCC402	SCC403	SCC404	SCC405	SCC406	SCC407	SCC408	SCC409	SCC410	SCC411	SCC412	SCC413	SCC414	SCC415	SCC416	SCC417	SCC418	SCC419	SCC420	SCC421	SCC422	SCC423	SCC424	SCC425	SCC426	SCC427	SCC428	SCC429	SCC430	SCC431	SCC432	SCC433	SCC434	SCC435	SCC436	SCC437	SCC438	SCC439	SCC440	SCC441	SCC442	SCC443	SCC444	SCC445	SCC446	SCC447	SCC448	SCC449	SCC450	SCC451	SCC452	SCC453	SCC454	SCC455	SCC456	SCC457	SCC458	SCC459	SCC460	SCC461	SCC462	SCC463	SCC464	SCC465	SCC466	SCC467	SCC468	SCC469	SCC470	SCC471	SCC472	SCC473	SCC474	SCC475	SCC476	SCC477	SCC478	SCC479	SCC480	SCC481	SCC482	SCC483	SCC484	SCC485	SCC486	SCC487	SCC488	SCC489	SCC490	SCC491	SCC492	SCC493	SCC494	SCC495	SCC496	SCC497	SCC498	SCC499	SCC500	SCC501	SCC502	SCC503	SCC504	SCC505	SCC506	SCC507	SCC508	SCC509	SCC510	SCC511	SCC512	SCC513	SCC514	SCC515	SCC516	SCC517	SCC518	SCC519	SCC520	SCC521	SCC522	SCC523	SCC524	SCC525	SCC526	SCC527	SCC528	SCC529	SCC530	SCC531	SCC532	SCC533	SCC534	SCC535	SCC536	SCC537	SCC538	SCC539	SCC540	SCC541	SCC542	SCC543	SCC544	SCC545	SCC546	SCC547	SCC548	SCC549	SCC550	SCC551	SCC552	SCC553	SCC554	SCC555	SCC556	SCC557	SCC558	SCC559	SCC560	SCC561	SCC562	SCC563	SCC564	SCC565	SCC566	SCC567	SCC568	SCC569	SCC570	SCC571	SCC572	SCC573	SCC574	SCC575	SCC576	SCC577	SCC578	SCC579	SCC580	SCC581	SCC582	SCC583	SCC584	SCC585	SCC586	SCC587	SCC588	SCC589	SCC590	SCC591	SCC592	SCC593	SCC594	SCC595	SCC596	SCC597	SCC598	SCC599	SCC600	SCC601	SCC602	SCC603	SCC604	SCC605	SCC606	SCC607	SCC608	SCC609	SCC610	SCC611	SCC612	SCC613	SCC614	SCC615	SCC616	SCC617	SCC618	SCC619	SCC620	SCC621	SCC622	SCC623	SCC624	SCC625	SCC626	SCC627	SCC628	SCC629	SCC630	SCC631	SCC632	SCC633	SCC634	SCC635	SCC636	SCC637	SCC638	SCC639	SCC640	SCC641	SCC642	SCC643	SCC644	SCC645	SCC646	SCC647	SCC648	SCC649	SCC650	SCC651	SCC652	SCC653	SCC654	SCC655	SCC656	SCC657	SCC658	SCC659	SCC660	SCC661	SCC662	SCC663	SCC664	SCC665	SCC666	SCC667	SCC668	SCC669	SCC670	SCC671	SCC672	SCC673	SCC674	SCC675	SCC676	SCC677	SCC678	SCC679	SCC680	SCC681	SCC682	SCC683	SCC684	SCC685	SCC686	SCC687	SCC688	SCC689	SCC690	SCC691	SCC692	SCC693	SCC694	SCC695	SCC696	SCC697	SCC698	SCC699	SCC700	SCC701	SCC702	SCC703	SCC704	SCC705	SCC706	SCC707	SCC708	SCC709	SCC710	SCC711	SCC712	SCC713	SCC714	SCC715	SCC716	SCC717	SCC718	SCC719	SCC720	SCC721	SCC722	SCC723	SCC724	SCC725	SCC726	SCC727	SCC728	SCC729	SCC730	SCC731	SCC732	SCC733	SCC734	SCC735	SCC736	SCC737	SCC738	SCC739	SCC740	SCC741	SCC742	SCC743	SCC744	SCC745	SCC746	SCC747	SCC748	SCC749	SCC750	SCC751	SCC752	SCC753	SCC754	SCC755	SCC756	SCC757	SCC758	SCC759	SCC760	SCC761	SCC762	SCC763	SCC764	SCC765	SCC766	SCC767	SCC768	SCC769	SCC770	SCC771	SCC772	SCC773	SCC774	SCC775	SCC776	SCC777	SCC778	SCC779	SCC780	SCC781	SCC782	SCC783	SCC784	SCC785	SCC786	SCC787	SCC788	SCC789	SCC790	SCC791	SCC792	SCC793	SCC794	SCC795	SCC796	SCC797	SCC798	SCC799	SCC800	SCC801	SCC802	SCC803	SCC804	SCC805	SCC806	SCC807	SCC808	SCC809	SCC810	SCC811	SCC812	SCC813	SCC814	SCC815	SCC816	SCC817	SCC818	SCC819	SCC820	SCC821	SCC822	SCC823	SCC824	SCC825	SCC826	SCC827	SCC828	SCC829	SCC830	SCC831	SCC832	SCC833	SCC834	SCC835	SCC836	SCC837	SCC838	SCC839	SCC840	SCC841	SCC842	SCC843	SCC844	SCC845	SCC846	SCC847	SCC848	SCC849	SCC850	SCC851	SCC852	SCC853	SCC854	SCC855	SCC856	SCC857	SCC858	SCC859	SCC860	SCC861	SCC862	SCC863	SCC864	SCC865	SCC866	SCC867	SCC868	SCC869	SCC870	SCC871	SCC872	SCC873	SCC874	SCC875	SCC876	SCC877	SCC878	SCC879	SCC880	SCC881	SCC882	SCC883	SCC884	SCC885	SCC886	SCC887	SCC888	SCC889	SCC890	SCC891	SCC892	SCC893	SCC894	SCC895	SCC896	SCC897	SCC898	SCC899	SCC900	SCC901	SCC902	SCC903	SCC904	SCC905	SCC906	SCC907	SCC908	SCC909	SCC910	SCC911	SCC912	SCC913	SCC914	SCC915	SCC916	SCC917	SCC918	SCC919	SCC920	SCC921	SCC922	SCC923	SCC924	SCC925	SCC926	SCC927	SCC928	SCC929	SCC930	SCC931	SCC932	SCC933	SCC934	SCC935	SCC936	SCC937	SCC938	SCC939	SCC940	SCC941	SCC942	SCC943	SCC944	SCC945	SCC946	SCC947	SCC948	SCC949	SCC950	SCC951	SCC952	SCC953	SCC954	SCC955	SCC956	SCC957	SCC958	SCC959	SCC960	SCC961	SCC962	SCC963	SCC964	SCC965	SCC966	SCC967	SCC968	SCC969	SCC970	SCC971	SCC972	SCC973	SCC974	SCC975	SCC976	SCC977	SCC978	SCC979	SCC980	SCC981	SCC982	SCC983	SCC984	SCC985	SCC986	SCC987	SCC988	SCC989	SCC990	SCC991	SCC992	SCC993	SCC994	SCC995	SCC996	SCC997	SCC998	SCC999	SCC1000	SCC1001	SCC1002	SCC1003	SCC1004	SCC1005	SCC1006	SCC1007	SCC1008	SCC1009	SCC1010	SCC1011	SCC1012	SCC1013	SCC1014	SCC1015	SCC1016	SCC1017	SCC1018	SCC1019	SCC1020	SCC1021	SCC1022	SCC1023	SCC1024	SCC1025	SCC1026	SCC1027	SCC1028	SCC1029	SCC1030	SCC1031	SCC1032	SCC1033	SCC1034	SCC1035	SCC1036	SCC1037	SCC1038	SCC1039	SCC1040	SCC1041	SCC1042	SCC1043	SCC1044	SCC1045	SCC1046	SCC1047	SCC1048	SCC1049	SCC1050	SCC1051	SCC1052	SCC1053	SCC1054	SCC1055	SCC1056	SCC1057	SCC1058	SCC

F.5 Downlink Carrier Aggregation with CA_41C 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 ULCA active.

F.5.1 DL Carrier Aggregation RF Conducted Powers

Table F-27
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [U] Ch. Freq. [MHz]	PCC				SCC 1				SCC 2				SCC 3				SCC 4				ULCA Tx Power with all CA Config. active [dBm]	ULCA Tx Power [dBm]									
				Mod.	PCC UL RB	PCC UL RB Offset	PCC [D] Channel	PCC [D] Freq. [MHz]	Mod.	SCC UL RB	SCC UL RB Offset	SCC [D] Channel	SCC [D] Freq. [MHz]	Mod.	SCC UL RB	SCC UL RB Offset	SCC [D] Channel	SCC [D] Freq. [MHz]	Mod.	SCC UL RB	SCC UL RB Offset	SCC [D] Channel	SCC [D] Freq. [MHz]											
CA_41C-41A	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	LTE B41	20	39700	2500	-	-	-	-	-	-	-	-	-	22.10	22.12	
CA_41C	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	LTE B41	20	41004	2040.4	-	-	-	-	-	-	-	-	-	-	22.10	22.12
CA_41D-41A	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	LTE B41	20	41004	2040.4	LTE B41	20	39700	2500	-	-	-	-	-	-	22.10	22.12
CA_41C-41C	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	LTE B41	20	39648	2520.8	LTE B41	20	39700	2500	-	-	-	-	-	-	22.10	22.12
CA_41E	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	LTE B41	20	41004	2040.4	LTE B41	20	40900	2020.0	-	-	-	-	-	-	22.10	22.12
CA_41G-41D	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	LTE B41	20	39648	2520.8	LTE B41	20	39700	2500	LTE B41	20	40140	2540.6	22.10	22.12		
CA_41D-41C	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	LTE B41	20	41004	2040.4	LTE B41	20	39648	2520.8	LTE B41	20	39700	2500	22.10	22.12		

F.5.2 DL Carrier Aggregation with DL 4x4 MIMO RF Conducted Powers

Note: 4x4 DL MIMO is only operating in the downlink. Uplink transmission is limited to a single output stream for each component carrier of ULCA.

Table F-28
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [U] Ch. Freq. [MHz]	PCC				SCC 1				SCC 2				SCC 3				SCC 4				ULCA Tx Power with all CA Config. active [dBm]	ULCA Tx Power [dBm]														
				Mod.	PCC UL RB	PCC UL RB Offset	PCC [D] Channel	PCC [D] Freq. [MHz]	DL Ant. Config.	Mod.	SCC UL RB	SCC UL RB Offset	SCC [D] Ch. Freq. [MHz]	DL Ant. Config.	Mod.	SCC UL RB	SCC UL RB Offset	SCC [D] Ch. Freq. [MHz]	DL Ant. Config.	Mod.	SCC UL RB	SCC UL RB Offset	SCC [D] Ch. Freq. [MHz]			DL Ant. Config.													
CA_41C	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	41004	2040.4	4x4	LTE B41	20	39700	2500	4x4	-	-	-	-	-	22.10	22.12		
CA_41C-41A	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	2x2	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	2x2	LTE B41	20	41004	2040.4	2x2	LTE B41	20	39700	2500	4x4	-	-	-	-	-	22.10	22.12		
CA_41C-41A	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	41004	2040.4	4x4	LTE B41	20	39700	2500	2x2	-	-	-	-	-	22.10	22.12		
CA_41C-41A	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	41004	2040.4	4x4	LTE B41	20	39700	2500	4x4	-	-	-	-	-	22.10	22.12		
CA_41D-41A	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	2x2	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	2x2	LTE B41	20	41004	2040.4	2x2	LTE B41	20	39700	2500	4x4	-	-	-	-	-	22.10	22.12		
CA_41D-41A	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	41004	2040.4	4x4	LTE B41	20	39700	2500	2x2	-	-	-	-	-	22.10	22.12		
CA_41C-41C	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	2x2	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	2x2	LTE B41	20	39648	2520.8	4x4	LTE B41	20	39700	2500	4x4	-	-	-	-	-	22.10	22.12		
CA_41C-41C	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	39648	2520.8	4x4	LTE B41	20	39700	2500	4x4	-	-	-	-	-	22.10	22.12		
CA_41E	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	41004	2040.4	4x4	LTE B41	20	40900	2020.0	4x4	-	-	-	-	-	22.10	22.12		
CA_41G-41D	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	39648	2520.8	4x4	LTE B41	20	39700	2500	4x4	-	-	-	-	-	22.10	22.12		
CA_41G-41D	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	39648	2520.8	4x4	LTE B41	20	39700	2500	2x2	LTE B41	20	40140	2540.6	4x4	22.10	22.12		
CA_41D-41C	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	2x2	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	2x2	LTE B41	20	41004	2040.4	2x2	LTE B41	20	39648	2520.8	4x4	LTE B41	20	39700	2500	4x4	-	-	22.10	22.12
CA_41C-41C	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	2x2	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	2x2	LTE B41	20	41004	2040.4	2x2	LTE B41	20	39648	2520.8	4x4	LTE B41	20	39700	2500	4x4	-	-	22.10	22.12
CA_41E-41E	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	41004	2040.4	4x4	LTE B41	20	40900	2020.0	2x2	LTE B41	20	40140	2540.6	4x4	22.10	22.12		
CA_41C-41D	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	2x2	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	2x2	LTE B41	20	39648	2520.8	4x4	LTE B41	20	39700	2500	4x4	LTE B41	20	40140	2540.6	4x4	22.10	22.12		
CA_41D-41D	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	41004	2040.4	4x4	LTE B41	20	40900	2020.0	4x4	LTE B41	20	40140	2540.6	4x4	22.10	22.12		
CA_41D-41C	LTE B41	20	41400	2000	QPSK	1	0	41400	2000	4x4	LTE B41	20	41200	2000.2	QPSK	1	0	41200	2000.2	4x4	LTE B41	20	41004	2040.4	4x4	LTE B41	20	39648	2520.8	4x4	LTE B41	20	39700	2500	4x4	22.10	22.12		

FCC ID: A3LSMF926U	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 04/06/21 - 06/09/21	DUT Type: Portable Handset	APPENDIX F: Page 16 of 16		