

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 9.3 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.

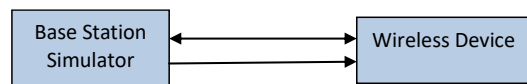


Figure I-1
DL CA Power Measurement Setup

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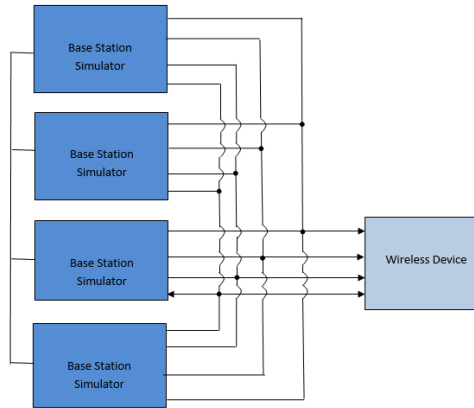


Figure I-2
DL CA with DL 4x4 MIMO Power Measurement Setup

I.2 Downlink Carrier Aggregation RF Conducted Powers

I.2.1 LTE Band 71 as PCC

Table I-3
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) 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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
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	-	-	-	-	24.73	24.80
CA 4B-4B-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B48	20	55990	3625	LTE B48	20	56540	3690	-	-	-	-	24.75	24.80
CA 4B-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B48	20	55990	3625	LTE B48	20	56189	3644.8	-	-	-	-	24.72	24.80
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	24.83	24.80
CA 2A-2A-66A-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	24.75	24.80
CA 2A-66A-66A-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	2190	24.74	24.80
CA 2A-66C-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	24.74	24.80

I.2.2 LTE Band 12 as PCC

Table I-4
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) 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]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	24.59	24.68
CA 4A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	24.54	24.68
CA 4A-12A (2)	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	24.54	24.68
CA 12A-75A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B25	20	8369	1962.5	-	-	-	-	-	-	-	-	24.51	24.68
CA 12A-46A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B46	20	50665	5637.5	-	-	-	-	-	-	-	-	24.60	24.68
CA 12A-46A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B46	20	50990	3625	-	-	-	-	-	-	-	-	24.62	24.68
CA 12A-66A (1)	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	24.53	24.68
CA 12A-66A (2)	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	24.53	24.68
CA 12A-46C	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B46	20	50665	5637.5	LTE B46	20	50467	5517.7	-	-	-	-	24.59	24.68
CA 12A-48C	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B48	20	55990	3625	LTE B48	20	56188	3644.8	-	-	-	-	24.56	24.68
CA 2A-2A-4A-12A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	24.56	24.68
CA 2A-4A-4A-12A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	LTE B4	20	2160	2160	24.60	24.68
CA 2A-4A-12B	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	24.56	24.68
CA 2A-12A-66C	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	24.60	24.68
CA 4A-4A-12B	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B12	5	5047	732.7	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	24.54	24.68
CA 12A-46C	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B46	20	50665	5637.5	LTE B46	20	50467	5517.7	LTE B46	20	50663	5557.3	24.64	24.68
CA 2A-2A-12A-30A-66A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	9820	2355	24.69	24.68
CA 2A-2A-12A-46A-66A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	24.65	24.68
CA 2A-2A-12B-66A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B66	20	66786	2145	24.58	24.68
CA 2A-12A-30A-66A-66A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.58	24.68
CA 2A-12B-66A-66A	LTE B12	5	23095	707.5	QPSK	1	0	5095	737.5	LTE B12	5	5047	732.7	LTE B2	20	900	1960	LTE B66	20	66786	2145	24.59	24.68

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I.2.3 LTE Band 13 as PCC

Table I-5
Maximum Output Powers

[illegible]

I.2.4 LTE Band 14 as PCC

Table I-6
Maximum Output Powers

		PCC										SCC 1					SCC 2					SCC 3					SCC 4					Power	
Combination	PCC Band	PCC BW [MHz]	PCC [UL/DL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	LTE Tx Power with CA Enabled [dBm]	LTE Single Carrier Tx Power (dBm)						
CA_2A-2A-14A-30A-66A	LTE B14	5	23130	793	QPSK	1	0	S330	763	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	20	9820	2355	LTE B66	20	66786	2345	24.79	24.30						
CA_2A-2A-14A-66A-66A	LTE B14	5	23130	793	QPSK	1	0	S330	763	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	24.84	24.70						
CA_2A-14A-30A-66A-66A	LTE B14	5	23130	793	QPSK	1	0	S330	763	LTE B2	20	900	1960	LTE B30	20	9820	2355	LTE B66	20	66786	2145	LTE B66	20	67236	2190	24.84	24.70						

I.2.5 LTE Band 5 as PCC

Table I-7
Maximum Output Powers

[illegible]

I.2.6 LTE Band 66 as PCC

Table I-8

Maximum Output Powers

[illegible]

I.2.7 LTE Band 25 as PCC

Table I-9

Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC				SCC 1				SCC 2				SCC 3				Power			
				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]	LTE Tx Power with DCA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_5A-25A	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	24.24	24.26
LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	QPSK	1	50	8365	1962.5	LTE B12	10	5095	737.5	-	-	-	-	24.09	24.26
CA_25A-35A(1)	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	LTE B25	20	8140	1340	-	-	-	-	-	-	-	-	24.16	24.30
CA_25A-41D	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	LTE B41	20	40422	2573.2	LTE B41	20	40620	2593	LTE B41	20	40818	2612.8	24.26	24.26

I.2.8 LTE Band 30 as PCC

Table I-10

Maximum Output Powers

Combination	PCB Band	PCC										SSC 1			SSC 2			SSC 3			SSC 4			Power LTE Tx Power [dBm]	Power LTE Single Carrier Tx Power [dBm]				
		PCB BW [MHz]	PCC UCI Ch.	PCC UCI Freq [MHz]	Mod.	PCC UCI RB	PCU LRB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC (DL) Channel	SSC (DL) Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC (DL) Channel	SSC (DL) Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC (DL) Channel	SSC (DL) Freq. [MHz]	SSC Band	SSC BW [MHz]			SSC (DL) Channel	SSC (DL) Freq. [MHz]		
CA 2A-2A-2A-9A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2350	LTE E2	20	900	1960	LTE E2	20	700	1940	LTE E2D	20	9715	722.5	-	-	-	-	-	-	22.01	22.21
CA 2A-2A-9A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2350	LTE E2	20	900	1960	LTE E2D	20	8715	722.5	-	-	-	-	-	-	-	-	-	-	22.03	22.21
CA 2A-9A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2350	LTE E2D	20	8715	722.5	LTE E6D	20	66780	2145	LTE E6D	20	67230	2190	-	-	-	-	-	-	22.04	22.21
CA 2A-2A-9A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2350	LTE E2	20	900	1960	LTE E2D	20	8715	722.5	LTE E6D	20	66780	2145	-	-	-	-	-	-	22.05	22.21
CA 2A-2A-12A-30A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.06	22.21
CA 2A-2A-12A-30A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.07	22.21
CA 2A-2A-12A-30A-66A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.08	22.21
CA 2A-2A-12A-30A-66A-66A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.09	22.21
CA 2A-2A-12A-30A-66A-66A-66A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.10	22.21
CA 2A-2A-12A-30A-66A-66A-66A-66A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.11	22.21
CA 2A-2A-12A-30A-66A-66A-66A-66A-66A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.12	22.21
CA 2A-2A-12A-30A-66A-66A-66A-66A-66A-66A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.13	22.21
CA 2A-2A-12A-30A-66A-66A-66A-66A-66A-66A-66A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.14	22.21
CA 2A-2A-12A-30A-66A-66A-66A-66A-66A-66A-66A-66A-66A-66A	LTE E3D	5	27720	2310	16QAM	1	0	9620	2355	LTE E2	20	900	1960	LTE E2	20	700	1910	LTE E3D	10	4580	861.5	-	-	-	-	-	-	22.15	22.21

I.2.9 LTE Band 41 as PCC

Table I-11
Maximum Output Powers

Combination	PCC									SCC 1				SCC 2				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dbm)	LTE Single Carrier Tx Power (dbm)
CA_41D	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	41094	2640.4	22.58	22.57
CA_41A-41C	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	LTE B41	20	39948	2525.8	LTE B41	20	39750	2506	22.60	22.57
CA_41C-41A	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	39750	2506	22.61	22.57

I.2.10 LTE Band 48 as PCC

Table I-12
Maximum Output Powers

Combination	PCC Band	PCC								SCC 1				SCC 2				SCC 3				SCC 4				Power		
		PCC BW [MHz]	PCC (UL) Ch	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Power (dBm)	
CA_48A-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	55340	3560	-	-	-	-	-	-	-	-	-	-	-	-	-	21.57	21.50
CA_48A-48C	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	55340	3560	LTE B48	20	55538	3579.8	-	-	-	-	-	-	-	-	-	21.55	21.52
CA_48C-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	56009	3626.9	LTE B48	20	55340	3560	-	-	-	-	-	-	-	-	-	21.50	21.52
CA_48A-48D	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	55340	3560	LTE B48	20	55538	3579.8	LTE B48	20	55736	3599.6	-	-	-	-	-	21.51	21.52
CA_48D-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	56009	3626.9	LTE B48	20	55811	3607.1	LTE B48	20	56460	3690	-	-	-	-	-	21.54	21.52
CA_48C-48C	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	56009	3626.9	LTE B48	20	55340	3560	LTE B48	20	55538	3579.8	-	-	-	-	-	21.50	21.52
CA_48A-48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	55340	3560	LTE B48	20	55538	3579.8	LTE B48	20	55736	3599.6	LTE B48	20	55934	3619.4	21.49	21.54	
CA_48E-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	56009	3626.9	LTE B48	20	55811	3607.1	LTE B48	20	56640	3690	LTE B48	20	56460	3690	21.29	21.52	
CA_48C-48D	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	56009	3626.9	LTE B48	20	55340	3560	LTE B48	20	55538	3579.8	LTE B48	20	55736	3599.6	21.25	21.52	
CA_48D-48C	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	56009	3626.9	LTE B48	20	55811	3607.1	LTE B48	20	56640	3690	LTE B48	20	56460	3690	21.29	21.52	
CA_48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	LTE B48	20	56009	3626.9	LTE B48	20	55811	3607.1	LTE B48	20	56640	3690	LTE B48	20	56460	3690	21.31	21.52	

I.3 DL CA with DL 4x4 MIMO RF Conduction Powers

This device supports downlink 4x4 MIMO operations for some LTE bands. Uplink transmission is limited to a single output stream. When carrier aggregation was applicable, the general test selection and setup procedures described in Section I.1 were applied.

Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

I.3.1 LTE 4x4 MIMO DL Standalone Powers

Table I-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	1.4	132665	1779.3	QPSK	1	0	24.45	24.58	24.0
25	20	26365	1882.5	QPSK	1	50	24.27	24.26	24.0
30	5	27710	2310	16QAM	1	0	22.24	22.21	21.5
41	20	41490	2680	16QAM	1	50	22.66	22.57	22.0
48	20	56207	3646.7	16QAM	1	50	21.55	21.52	21.0

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I.3.3 LTE Band 13 as PCC

Table I-16
Maximum Output Powers

[illegible]

I.3.4 LTE Band 14 as PCC

Table I-17
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL/Ch]	PCC (UL) Freq. [MHz]	Mod.	PCC				SCC 1				SCC 2				SCC 3				SCC 4				DL Ant. Config.	LTE Tx Power with EnbDed	LTE Single Carrier Tx 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.				SCC Band	SCC BW [MHz]	SCC [DL/Ch]	SCC (DL) Freq. [MHz]
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	2x2	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	2x2	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4	24.88	24.70
CA 2A-2A-1A-30A (66A)	LTE B14	8	25330	793	QPSK	1	0	5330	763	2x2	LTE B12	20	900	1560	4x4	LTE B12	20	700	1340	2x2	LTE B30	10	9620	2355	2x2	LTE B36	20	66780	2145	4x4		

FCC ID A3LSMF936U

DUT Type:
Portable Handset

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Technical Manager

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I.3.5 LTE Band 5 as PCC

Table I-18
Maximum Output Powers

[illegible]

FCC ID: A3I.SME936U

DUT Type:
Portable Handset

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Approved by:

Technical Manager

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I.3.7 LTE Band 25 as PCC

Table I-20
Maximum Output Powers

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	LTE Single Carrier Tx Power (dbm)	
CA 5A-[25A]	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	4x4	LTE B5	10	2525	1881.5	2x2	-	-	-	-	-	-	-	-	-	-	-	24.26	24.26
CA 25A-[50A] (1)	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	2x2	LTE B25	20	8140	1940	4x4	-	-	-	-	-	-	-	-	-	-	-	24.18	24.26
CA 25A-[25A] (1)	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	4x4	LTE B25	20	8140	1940	2x2	-	-	-	-	-	-	-	-	-	-	-	24.26	24.26
CA 25A-[25A] (1)	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	4x4	LTE B25	20	8140	1940	4x4	-	-	-	-	-	-	-	-	-	-	-	24.32	24.26
CA 25A-[41D]	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	4x4	LTE B41	20	40422	2573.2	2x2	LTE B41	20	40620	2593	2x2	LTE B41	20	40818	2612.8	2x2	24.22	24.26	
CA 25A-[41D]	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	2x2	LTE B41	20	40422	2573.2	4x4	LTE B41	20	40620	2593	4x4	LTE B41	20	40818	2612.8	4x4	24.20	24.26	
CA 25A-[41D]	LTE B25	20	26365	1882.5	QPSK	1	50	8365	1962.5	4x4	LTE B41	20	40422	2573.2	4x4	LTE B41	20	40620	2593	4x4	LTE B41	20	40818	2612.8	4x4	24.17	24.26	

I.3.8 LTE Band 30 as PCC

Table I-21
Maximum Output Powers

Combination	PCB Band	PCB BW [MHz]	PCU [Ch.]	PCC [U/L] Freq. [MHz]	Mod.	PCU UR	PCU UR Offset	PCC [U/L] Ch. Freq. [MHz]	DL Ant. Config.	SCC 1				SCC 2				SCC 3				SCC 4				Power	LTE Single Carrier Power [dBm]
										SCC Band	SCC BW [MHz]	SCC [U/L] Ch. Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [U/L] Ch. Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [U/L] Ch. Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [U/L] Ch. Freq. [MHz]	DL Ant. Config.		
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	2x2	LTE B30	20	900	1960	4x4	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	2x2	LTE B30	20	900	1960	4x4	LTE B30	20	700	1960	4x4	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	4x4	LTE B30	20	700	1960	4x4	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B29	20	9715	722.5	2x2	-	22.32	22.21
CA 2A-2A-30A (30A)	LTE B30	5	27120	2310	15QAM	1	0	2620 2355	4x4	LTE B30	20	900	1960	2x2	LTE B30	20	700	1960	2x2	LTE B							

FCC ID A3LSMF936U

SAR EVALUATION REPORT

Approved by:

Technical Manager

DUT Type:
Portable Handset

APPENDIX I:
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I.3.9 LTE Band 41 as PCC

Table I-22
Maximum Output Powers

Combination	PCC Band	PCC										SCC 1				SCC 2				Power		
		PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx Power with DL CA Enabled	LTE Single Carrier Tx Power (dBm)
CA [41D]	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	4x4	LTE B41	20	41292	2660.2	4x4	LTE B41	20	41094	2640.4	4x4	22.63	22.57
CA [41A]-41C	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	4x4	LTE B41	20	39948	2525.8	2x2	LTE B41	20	39750	2506	2x2	22.79	22.57
CA 41C-41A	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	2x2	LTE B41	20	41292	2660.2	2x2	LTE B41	20	39750	2506	4x4	22.60	22.57
CA 41A-41C	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	2x2	LTE B41	20	39948	2525.8	4x4	LTE B41	20	39750	2506	4x4	22.62	22.57
CA [41C]-41A	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	4x4	LTE B41	20	41292	2660.2	4x4	LTE B41	20	39750	2506	2x2	22.70	22.57
CA [41A]-41C	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	4x4	LTE B41	20	39948	2525.8	4x4	LTE B41	20	39750	2506	4x4	22.65	22.57
CA [41C]-41A	LTE B41	20	41490	2680	16QAM	1	50	41490	2680	4x4	LTE B41	20	41292	2660.2	4x4	LTE B41	20	39750	2506	4x4	22.64	22.57

I.3.10 LTE Band 48 as PCC

Table I-23
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC 1				SCC 2				SCC 3				SCC 4				Power									
											SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	Tx Power with DL CA Enabled	LTE Single Carrier Tx Power (dBm)				
CA 48A-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.36	21.52			
CA 48B-48A	LTE B48	20	56207	3646.9	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55340	3560	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.35	21.52		
CA 48A-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.40	21.52		
CA 48A-48C	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55340	3560	4x4	LTE B48	20	55538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	21.37	21.52	
CA 48B-48A	LTE B48	20	56207	3646.9	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55340	3560	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.36	21.52	
CA 48A-48B	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55340	3560	2x2	LTE B48	20	55538	3579.8	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.45	21.52
CA 48C-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55009	3626.9	2x2	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.34	21.52
CA 48A-48C	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55340	3560	4x4	LTE B48	20	55538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.50	21.52
CA 48C-48A	LTE B48	20	56207	3646.9	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	55340	3560	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.49	21.52
CA 48A-48C	LTE B48	20	56207	3646.9	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55340	3560	2x2	LTE B48	20	55538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.34	21.52
CA 48B-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55340	3560	4x4	LTE B48	20	55538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.39	21.52
CA 48C-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55009	3626.9	2x2	LTE B48	20	55340	3560	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.37	21.52
CA 48A-48B	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55340	3560	2x2	LTE B48	20	55538	3579.8	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.40	21.52
CA 48B-48A	LTE B48	20	56207	3646.9	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.35	21.52
CA 48C-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.37	21.52
CA 48A-48B	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55009	3626.9	2x2	LTE B48	20	55340	3560	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.36	21.52
CA 48B-48C	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	5538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.37	21.52
CA 48C-48B	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55009	3626.9	2x2	LTE B48	20	5538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.37	21.52
CA 48A-48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55340	3560	4x4	LTE B48	20	55538	3579.8	4x4	LTE B48	20	55736	3599.6	4x4	LTE B48	20	55934	3619.4	4x4	-	-	-	21.39	21.52	
CA 48E-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	55538	3579.8	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.37	21.52
CA 48A-48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55340	3560	2x2	LTE B48	20	55538	3579.8	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.35	21.52
CA 48E-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55009	3626.9	2x2	LTE B48	20	55538	3579.8	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.38	21.52
CA 48A-48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55340	3560	4x4	LTE B48	20	55538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.37	21.52
CA 48E-48A	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	55538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.35	21.52
CA 48C-48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55009	3626.9	2x2	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.36	21.52
CA 48E-48C	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	5538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.41	21.52
CA 48C-48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.37	21.52
CA 48A-48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55009	3626.9	2x2	LTE B48	20	55340	3560	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.36	21.52
CA 48E-48C	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	2x2	LTE B48	20	55009	3626.9	2x2	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.37	21.52
CA 48C-48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.50	21.52
CA 48E-48C	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	55538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.42	21.52
CA 48E	LTE B48	20	56207	3646.7	16QAM	1	50	56207	3646.7	4x4	LTE B48	20	55009	3626.9	4x4	LTE B48	20	55538	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.43	21.52

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

This device supports uplink carrier aggregation (ULCA) with additional Carrier Aggregation configurations active in the downlink. Power measurements were performed with ULCA active and additional CA configurations active in the downlink for the configuration per Fall 2017 TCB Workshop Notes.

Per FCC Guidance, additional SAR measurements for these configurations were not required since their maximum output power was not more than 0.25 dB higher than the maximum output power for with only CA_66B, CA_66C, CA_41C, or CA_48C ULCA active.

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

Table I-24
Maximum Output Powers

Combination	PCC										SCC 1										SCC 2										Power	
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Modulation	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Modulation	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	ULCA Tx Power with add'l CA config. active on DL (dBm)	ULCA Tx Power (dBm)								
CA_41D	LTE B41	20	41490	2680	QPSK	50	0	41490	2680	LTE B41	20	41292	2660.2	QPSK	50	50	41292	2660.2	LTE B41	20	41094	2640.4	22.29	22.31								

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

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

Table I-25
Maximum Output Powers

Combination	PCC										SCC										Power	
	PCC Band	PCC Bandwidth [MHz]	PCC [UL] Channel	PCC [UL] Frequency [MHz]	Modulation	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Frequency [MHz]	DL Ant. Config.	SCC Band	SCC Bandwidth [MHz]	SCC [UL] Channel	SCC [UL] Frequency [MHz]	Modulation	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	ULCA Tx Power with add'l CA config. active on DL (dBm)	ULCA Tx Power (dBm)
CA_41C	LTE B41	20	41490	2680	QPSK	50	0	41490	2680	4x4	LTE B41	20	41292	2660.2	QPSK	50	50	41292	2660.2	4x4	22.33	22.31
CA_48C	LTE B48	20	56207	3646.7	QPSK	1	99	56207	3646.7	4x4	LTE B48	20	56405	3666.5	QPSK	1	0	56405	3666.5	4x4	21.11	21.07
CA_66B	LTE B66	10	132622	1775	QPSK	1	0	67086	2175	4x4	LTE B66	10	132523	1765.1	QPSK	1	49	66987	2165.1	4x4	24.41	24.38
CA_66C	LTE B66	20	132572	1770	QPSK	1	0	67036	2170	4x4	LTE B66	20	132374	1750.2	QPSK	1	99	66838	2150.2	4x4	24.38	24.42

Combination	PCC										SCC 1										SCC 2										Power	
	PCC Band	PCC Bandwidth [MHz]	PCC [UL] Channel	PCC [UL] Frequency [MHz]	Modulation	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Frequency [MHz]	DL Ant. Config.	SCC Band	SCC Bandwidth [MHz]	PCC [UL] Channel	PCC [UL] Frequency [MHz]	Modulation	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	ULCA Tx Power with add'l CA config. active on DL (dBm)	ULCA Tx Power (dBm)										
CA_41D	LTE B41	20	41490	2680	QPSK	50	0	41490	2680	4x4	LTE B41	20	41292	2660.2	QPSK	50	50	41292	2660.2	4x4	LTE B41	20	41094	2640.4	4x4	22.35	22.31					

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