

APPENDIX F: DOWNLINK LTE CA RF CONDUCTED POWERS

1.1 LTE Downlink Only Carrier Aggregation Test Reduction Methodology

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number of component carriers (CCs) supported by the product implementation. Per April 2018 TCBC Workshop Notes, the following test reduction methodology was applied to determine the combinations required for conducted power measurements.

LTE DLCA Test Reduction Methodology:

- The supported combinations were arranged by the number of component carriers in columns.
- Any limitations on the PCC or SCC for each combination were identified alongside the combination (e.g. CA_2A-2A-4A-12A, but B12 can only be configured as a SCC).
- Power measurements were performed for "supersets" (LTE CA combinations with multiple components carriers) and any "subsets" (LTE CA combinations with fewer component carriers) that were not completely covered by the supersets.
- Only subsets that have the exact same components as a superset were excluded for measurement.
- When there were certain restrictions on component carriers that existed in the superset that were not applied for the subset, the subset configuration was additionally evaluated.
- Both inter-band and intra-band downlink carrier aggregation scenarios were considered.
- Downlink CA combinations for SISO and 4x4 Downlink MIMO operations were measured independently, per May 2017 TCBC Workshop notes.

Table 1 – Example of Exclusion Table for SISO Configurations

Index	ZCC	Supported Channel Bandwidth (MHz)				Restriction	Completely Covered by Measurement Superset	Index	ZCC	Supported Channel Bandwidth (MHz)				Restriction	Completely Covered by Measurement Superset	Index	ZCC	Supported Channel Bandwidth (MHz)				Restriction	Completely Covered by Measurement Superset
		CC1	CC2	CC3	CC4					CC1	CC2	CC3	CC4					CC1	CC2	CC3	CC4		
CC#41	CA_2A	5, 10, 15, 20	5, 10, 15, 20			CC#41	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#41	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#41		
CC#42	CA_2A	5, 10, 15, 20	5, 10, 15, 20			CC#42	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#42	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#42		
CC#43	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#43	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#43	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#43		
CC#44	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#44	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#44	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#44		
CC#45	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#45	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#45	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#45		
CC#46	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#46	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#46	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#46		
CC#47	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#47	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#47	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#47		
CC#48	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#48	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#48	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#48		
CC#49	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#49	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#49	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#49		
CC#50	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#50	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#50	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#50		
CC#51	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#51	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#51	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#51		
CC#52	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#52	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#52	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#52		
CC#53	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#53	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#53	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#53		
CC#54	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#54	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#54	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#54		
CC#55	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#55	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#55	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#55		
CC#56	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#56	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#56	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#56		
CC#57	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#57	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#57	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#57		
CC#58	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#58	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#58	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#58		
CC#59	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#59	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#59	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#59		
CC#60	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#60	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#60	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#60		
CC#61	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#61	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#61	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#61		
CC#62	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#62	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#62	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#62		
CC#63	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#63	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#63	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#63		
CC#64	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#64	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#64	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#64		
CC#65	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#65	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#65	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#65		
CC#66	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#66	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#66	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#66		
CC#67	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#67	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#67	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#67		
CC#68	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#68	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#68	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#68		
CC#69	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#69	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#69	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#69		
CC#70	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#70	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#70	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#70		
CC#71	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#71	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#71	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#71		
CC#72	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#72	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#72	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#72		
CC#73	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#73	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#73	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#73		
CC#74	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#74	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#74	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#74		
CC#75	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#75	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#75	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#75		
CC#76	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#76	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#76	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#76		
CC#77	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#77	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#77	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#77		
CC#78	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#78	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#78	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#78		
CC#79	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#79	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#79	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#79		
CC#80	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#80	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#80	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#80		
CC#81	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#81	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#81	CA_2A-2A-4A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20			CC#81		
CC#82	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20			CC#82	CA_2A-2A-4A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 1													

1.2 LTE Downlink Only Carrier Aggregation Test Selection and Setup

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers (CCs) supported by the product implementation. For those configurations required by April 2018 TCBC Workshop Notes, conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive among the channel bandwidth, modulation, and RB combinations in each frequency band.

This device supports LAA with downlink carrier aggregation only. It uses carrier aggregation in the downlink to combine LTE in the unlicensed spectrum (i.e. LTE Band 46) with LTE in the licensed band (served as PCC). All uplink communications and acknowledgements on the PCC remain identical to specifications when downlink carrier aggregation is inactive.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the maximum average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive. All bands required for SAR testing per FCC KDB procedures were considered. Based on the measured maximum powers below, no additional SAR tests were required for DLCA SAR configurations.

General PCC and SCC configuration selection procedure

- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)ii) of KDB 941225 D05 V01r02. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
- To maximize aggregated bandwidth, highest channel bandwidth available for that CA combination was selected for SCC. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
- All selected PCC and SCC(s) remained fully within the uplink/downlink transmission band of the respective component carrier.

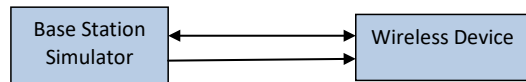




Figure 1
DL CA Power Measurement Setup

FCC ID: A3LSMN981U	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 05/25/20 – 07/10/20	DUT Type: Portable Handset			APPENDIX F: Page 2 of 17

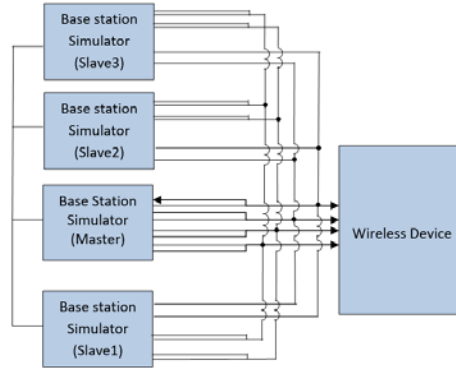


Figure 2
DL CA with DL 4x4 MIMO Power Measurement Setup

1.3 Downlink Carrier Aggregation RF Conducted Powers

1.3.1 LTE Band 71 as PCC

Table 1
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				SCC 1				SCC 2				SCC 3				Power					
				Mod.	PCC UL RB	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	10	133172	668	QPSK	1	0	68636	622	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	-	-	25.31	25.34
CA_4B-4B-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	LTE B4B	20	55990	3625	LTE B4B	20	56640	3650	-	-	-	-	-	-	25.35	25.34
CA_4B-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	LTE B4B	20	55990	3625	LTE B4B	20	56188	3644.8	-	-	-	-	-	-	25.30	25.34
CA_2A-2A-4A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B2	20	2175	2132.5	-	-	25.40	25.34
CA_2A-2A-66A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	66786	2145	25.40	25.34
CA_2A-66A-66A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2150	67236	2150	25.37	25.34
CA_2A-66C-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2144.8	66984	2144.8	25.40	25.34

1.3.2 LTE Band 12 as PCC

Table 2
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				SCC 1				SCC 2				SCC 3				SCC 4				Power					
				Mod.	PCC UL RB	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 Tx Power [dBm]				
CA_2A-12A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	-	-	-	25.08	25.11		
CA_4A-12A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	-	-	-	-	-	25.08	25.11	
CA_4B-12A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B4B	20	55990	3625	-	-	-	-	-	-	-	-	-	-	-	-	-	25.08	25.11	
CA_12A-2A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	-	-	-	-	25.11	25.11	
CA_12A-4A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B4B	20	55990	3625	-	-	-	-	-	-	-	-	-	-	-	-	-	25.08	25.11	
CA_12A-66A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	-	25.04	25.11	
CA_12A-66A (2)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	-	-	-	-	-	25.04	25.11	
CA_4A-4A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	-	-	-	-	-	-	25.26	25.11
CA_12A-6C	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B4B	20	55990	3625	LTE B4B	20	55987	3617.7	-	-	-	-	-	-	-	-	-	-	25.07	25.11
CA_2A-2A-4A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	25.30	25.11				
CA_2A-2A-12B	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B12	10	5107	738.7	LTE B2	20	900	1960	LTE B2	20	700	1940	-	-	25.30	25.11				
CA_3A-12A-66C	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2144.8	66984	2144.8	25.26	25.11				
CA_12A-6C	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B4B	20	55990	3625	LTE B4B	20	55987	3617.7	LTE B4B	20	55983	3607.3	-	-	25.09	25.11				
CA_2A-2A-12A-30A-66A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B30	10	6620	2330	LTE B66	20	66786	2145	24.98	25.11		
CA_2A-2A-12A-66A-66A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2150	25.41	25.11		
CA_2A-2A-30A-66A-66A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	LTE B2	20	900	1960	LTE B30	10	6620	2330	LTE B66	20	66786	2145	LTE B66	20	67236	2150	24.99	25.11		

FCC ID: A3LSMN981U	PCTEST Proud to be part of element	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 05/25/20 – 07/10/20	DUT Type: Portable Handset			APPENDIX F: Page 3 of 17

1.4 DL CA with DL 4x4 MIMO RF Conduction Powers


This device supports downlink 4x4 MIMO operations for some LTE bands. Uplink transmission is limited to a single output stream. When carrier aggregation was applicable, the general test selection and setup procedures described in Section 1.2 were applied.

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

1.4.1 LTE 4x4 MIMO DL Standalone Powers

Table 12
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]
66	3	132322	1745	QPSK	1	0	23.32	23.29
25	5	26665	1912.5	QPSK	1	24	23.75	23.52
30	10	27710	2310	QPSK	1	0	23.81	23.79
41	10	40620	2593	QPSK	1	25	24.53	24.60
48	5	56232	3649.2	QPSK	1	12	23.44	23.45

FCC ID: A3LSMN981U	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 05/25/20 – 07/10/20	DUT Type: Portable Handset			APPENDIX F: Page 7 of 17

1.4.2 LTE Band 71 as PCC

Table 13
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Freq. [MHz]	Mod.	PCC				SCC 1				SCC 2				SCC 3				Power									
					PCC UL RB	PCC UL RB Offset	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)								
CA 14A-4A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	2x2	-	-	-	-	-	-	25.22	25.34		
CA 14A-14A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	-	-	25.24	25.34	
CA 2A-2A-4A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B4	20	2175	2132.5	2x2	-	-	-	25.38	25.34
CA 2A-2A-4A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	2x2	LTE B2	20	700	1940	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	25.41	25.34
CA 12A-12A-4A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	25.43	25.34
CA 12A-12A-4A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	25.45	25.34
CA 12A-2A-6A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B6	20	66786	2145	2x2	-	-	-	25.47	25.34
CA 12A-2A-6A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	2x2	LTE B2	20	700	1940	2x2	LTE B6	20	66786	2145	4x4	-	-	-	25.52	25.34
CA 12A-2A-6A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B6	20	66786	2145	2x2	-	-	-	25.53	25.34
CA 12A-2A-6A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B6	20	66786	2145	4x4	-	-	-	25.45	25.34
CA 12A-12A-6A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B6	20	66786	2145	4x4	-	-	-	25.47	25.34
CA 12A-6A-6A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B6	20	66786	2145	2x2	LTE B6	20	67236	2190	2x2	-	-	-	25.18	25.34
CA 12A-6A-6A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B6	20	66786	2145	4x4	LTE B6	20	67236	2190	2x2	-	-	-	25.28	25.34
CA 2A-6A-6A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	2x2	LTE B6	20	66786	2145	4x4	LTE B6	20	67236	2190	4x4	-	-	-	25.48	25.34
CA 12A-12A-6A-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B6	20	66786	2145	4x4	LTE B6	20	67236	2190	2x2	-	-	-	25.26	25.34
CA 12A-6C-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B6	20	66786	2145	2x2	LTE B6	20	66984	2164.8	2x2	-	-	-	25.27	25.34
CA 2A-18C-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	2x2	LTE B6	20	66786	2145	4x4	LTE B6	20	66984	2164.8	4x4	-	-	-	25.38	25.34
CA 12A-18C-71A	LTE B71	10	133172	668	QPSK	1	0	68636	622	2x2	LTE B2	20	900	1960	4x4	LTE B6	20	66786	2145	4x4	LTE B6	20	66984	2164.8	4x4	-	-	-	25.37	25.34

1.4.3 LTE Band 12 as PCC

Table 14
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Freq. [MHz]	Mod.	PCC				SCC 1				SCC 2				SCC 3				SCC 4				Power					
					PCC UL RB	PCC UL RB Offset	PCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC (DL) Freq. [MHz]	DL Ant. Config.	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)				
CA 12A-12A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	-	-	-	-	-	-	-	-	-	-	-	-	25.06	25.11	
CA 12A-12A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	24.93	25.11	
CA 14A-12A (2)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	-	-	-	-	-	-	-	-	-	24.93	25.11	
CA 12A-6A-6A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B6	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	-	24.87	25.11	
CA 12A-6A-6A (1)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B6	20	66786	2145	4x4	-	-	-	-	-	-	-	-	-	-	-	-	24.87	25.11	
CA 14A-4A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	2x2	-	-	-	-	-	-	-	-	25.11	25.11
CA 14A-4A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	-	-	-	25.11	25.11
CA 12A-2A-4A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B4	20	2175	2132.5	2x2	-	-	-	25.34	25.11
CA 12A-2A-4A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	25.27	25.11
CA 12A-2A-4A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	25.19	25.11
CA 12A-2A-12A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	25.08	25.11
CA 12A-12A-6C	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B6	20	66786	2145	2x2	LTE B6	20	66984	2164.8	2x2	-	-	-	25.07	25.11
CA 2A-12A (6C)	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	2x2	LTE B6	20	66786	2145	4x4	LTE B6	20	66984	2164.8	4x4	-	-	-	25.03	25.11
CA 12A-12A-6C	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B6	20	66786	2145	4x4	LTE B6	20	66984	2164.8	4x4	-	-	-	25.09	25.11
CA 12A-2A-12A-30A-6A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B6	20	66786	2145	2x2	-	-	-	24.93	25.11
CA 2A-2A-12A-30A-6A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	2x2	LTE B6	20	66786	2145	4x4	LTE B6	20	66786	2145	2x2	-	-	-	24.85	25.11
CA 2A-2A-12A-30A-6A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	2x2	LTE B6	20	66786	2145	4x4	LTE B6	20	66786	2145	4x4	-	-	-	24.85	25.11
CA 12A-2A-12A-30A-6A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B6	20	66786	2145	2x2	-	-	-	25.01	25.11
CA 12A-2A-12A-30A-6A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B6	20	66786	2145	4x4	-	-	-	24.91	25.11
CA 2A-2A-12A-30A-6A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	2x2	LTE B6	20	66786	2145	4x4	LTE B6	20	66786	2145	4x4	-	-	-	24.83	25.11
CA 12A-12A-12A-30A-6A	LTE B12	5	23035	701.5	QPSK	1	12	5035	731.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B6	20	66786	2145						

1.5 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 ULCA active.

1.5.1 DL Carrier Aggregation RF Conducted Powers

Table 24
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [DL] Freq. [MHz]	Mod.	PCC										SCC 1										SCC 2										SCC 3										SCC 4										ULCA Tx Power with add'l CA config. active (dBm)	ULCA Tx Power (dBm)
						PCC [UL] RB	PCC [UL] RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [DL] Freq. [MHz]	Mod.	SCC [UL] RB	SCC [UL] RB Offset	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [DL] Freq. [MHz]	Mod.	SCC [UL] RB	SCC [UL] RB Offset	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [DL] Freq. [MHz]	Mod.	SCC [UL] RB	SCC [UL] RB Offset	SCC [DL] Channel	SCC [DL] Freq. [MHz]																					
CA_41C-41A	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	LTE B41	20	41460	2680	QPSK	1	99	41260	2680	LTE B41	20	41458	2697.8	QPSK	1	0	41458	2697.8	LTE B41	20	41900	2680	QPSK	1	99	41700	2680	LTE B41	20	41898	2697.8	QPSK	1	0	41898	2697.8	24.27	24.29	
CA_41D-41A	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	LTE B41	20	40148	2545.8	QPSK	1	99	40146	2563.6	QPSK	1	0	40146	2563.6	LTE B41	20	41460	2680	QPSK	1	99	41260	2680	LTE B41	20	41458	2697.8	QPSK	1	0	41458	2697.8	24.27	24.29					
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	LTE B41	20	41900	2680	QPSK	1	99	41700	2680	LTE B41	20	41898	2697.8	QPSK	1	0	41898	2697.8	LTE B41	20	41900	2680	QPSK	1	99	41700	2680	LTE B41	20	41898	2697.8	QPSK	1	0	41898	2697.8	24.29	24.29	
CA_41E	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	LTE B41	20	40148	2545.8	QPSK	1	99	40146	2563.6	QPSK	1	0	40146	2563.6	LTE B41	20	41460	2680	QPSK	1	99	41260	2680	LTE B41	20	41458	2697.8	QPSK	1	0	41458	2697.8	24.29	24.29					
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	LTE B41	20	41900	2680	QPSK	1	99	41700	2680	LTE B41	20	41898	2697.8	QPSK	1	0	41898	2697.8	LTE B41	20	41900	2680	QPSK	1	99	41700	2680	LTE B41	20	41898	2697.8	QPSK	1	0	41898	2697.8	24.29	24.29	
CA_41D-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	LTE B41	20	40148	2545.8	QPSK	1	99	40146	2563.6	QPSK	1	0	40146	2563.6	LTE B41	20	41460	2680	QPSK	1	99	41260	2680	LTE B41	20	41458	2697.8	QPSK	1	0	41458	2697.8	24.29	24.29					

1.5.2 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 25
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [DL] Freq. [MHz]	Modulation	PCC										SCC 1										SCC 2										SCC 3										SCC 4										ULCA Tx Power with add'l CA config. active (dBm)	LTE Single Carrier Tx Power (dBm)
						PCC [UL] RB	PCC [UL] RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [UL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.																						
CA [66B]	LTE B66	10	132322	1745	QPSK	1	49	66796	2145	4x4	LTE B66	10	132421	1750.2	QPSK	1	0	66885	2154.9	4x4	23.15	23.15																																			
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	23.66	23.66																																			
CA [41C]	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41A	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41A	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41D-41A	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41E-41A	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41D-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41D-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41E-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41D-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41E-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41D-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41E-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41D-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41E-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41D-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41E-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41D-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41E-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41D-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41E-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525.8	4x4	24.29	24.29																																			
CA_41C-41C	LTE B41	20	30950	2508	QPSK	1	99	30750	2508	4x4	LTE B41	20	30948	2525.8	QPSK	1	0	30948	2525																																						