

FCC ID: BCGA2014

Date: 10/09/2018

LTE Information per KDB 941225 D05A v01r02		
1	FCC ID:	
2	References to Standards	
a	LTE release and version numbers of the 3GPP documents used to implement the specific device(s):	
b	3GPP release and version numbers required for power measurements and RF test setup conditions:	
3	When Carrier Aggregation applies, explanations of inter-band and intra-band aggregation Capabilities	
a	intra-band and inter-band carrier aggregation for both downlink and uplink, including Wi-Fi offloading using LTE-U, LAA or LWA protocols?	
b	Support of contiguous and non-contiguous component carriers for intra-band aggregation:	
c	Frequency band combinations supported for intra-band and inter-band carrier aggregation:	
	(a) DL CA	See Section 3(b)(i)
	(b) DL CA with DL 4x4 MIMO	See Section 3(b)(i)
	(c) UL CA	See Section 3(c)(i)
iii	Number of component carriers, including all combinations, supported for intra-band and inter-band carrier aggregation in the uplink and downlink:	
iv	The channel bandwidth configurations applicable to each carrier aggregation configuration and the applicable carrier aggregation (CA) Bandwidth Classes; A ... F, etc.:	
v	Restrictions on certain channel combinations:	
vi	RB combinations supported by the carrier aggregation configurations:	
b	Downlink Carrier Aggregation supported?	
i	Frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations:	
	(a) DL CA	See LTE DL CA checklist
	(b) DL CA with DL 4x4 MIMO	See LTE DL CA with DL 4x4 MIMO checklist
ii	Uplink maximum output power measurement with downlink carrier aggregation active measured, using the highest output channel measured without downlink carrier aggregation and not more than 1/4 db higher than the maximum output power measured when downlink carrier aggregation inactive?	
iii	SAR measurements required for downlink carrier aggregation per 3(b)(ii)?	
c	Uplink Carrier Aggregation supported?	
i	Frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations:	
ii	When power reduction applies, the maximum output power specifications and measured results with and without carrier aggregation in the reduced power configurations are included?	
iii	Does the maximum output power specified for production units, including tune up tolerance, varies across channel bandwidth, modulation RB allocation, channels etc.?	
d	Description of Test Equipment and Setup for power and SAR measurements?	
e	Other restrictions or limitations associated with the carrier aggregation implementation?	
4	Enhanced SC-FDMA supported in the UL? Provide details of implementation, limitations and restrictions, including:	
a	Decoupling of control and data transmissions to enable simultaneous transmission of PUCCH and PUSCH	
b	Non-contiguous data transmission with clustered SC-FDMA to enable non-contiguous subcarriers in PUSCH transmissions.	
c	Issues relating to dynamic switching between schemes	
d	When a partially allocated PUSCH, a cluster of partially allocated PUSCH or a fully allocated PUSCH is transmitted simultaneously either with or without PUCCH, peak to average power ratio of the signal can increase substantially above Rel. 14 implementations	
5	Details of implementation of uplink LTE MIMO or other transmit diversity configurations:	
6	UE category and descriptions of the category requirements for supporting carrier aggregation, uplink MIMO and other UE configurations:	
7	Expected SAR complications with hardware or firmware associated with any LTE Rel. 14 features including: CoMP, HetNet, Relay, SON, cross carrier scheduling, eICIC, enhanced downlink MIMO, MBMS, M2M/D2D support etc.:	
8	Detailed descriptions of SVLTE support in any carrier aggregation configurations:	
9	Description of the device and other transmitters contained within it to identify various standalone and/or simultaneous transmission SAR testing concerns.	

NOTES for the following tables:

- BCS (Bandwidth Combination Set) # supported for a CA configuration is indicated by the (#) notation right next to it. A CA configuration without (#) at the end has default BCS=0. For example, CA\_2A-12A has BCS=0, and CA\_2A-12A (1) has BCS=1

- Depending on supported BCS # for each CA configuration, the CC (component carrier) # identifies the bandwidths supported for the LTE bands in the order of how they appear in the listed configuration. For example, for a given combination "CA\_12A-66B", CC1 would identify the bandwidths for LTE Band 12, CC2 would identify the bandwidths for LTE Band 66 (one CC), and CC3 would identify the bandwidths for LTE Band 66 (remaining CC)

LTE DL CA Checklist			
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2	References to Standards		
a)	LTE release and version numbers of the 3GPP documents used to implement the specific device(s)		
b)	3GPP release and version numbers required for power measurements and RF test setup conditions		
3	When Carrier Aggregation applies, explanations of inter-band and intra-band aggregation Capabilities		
b)	Downlink Carrier Aggregation Supported? Yes		
c)	Frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations		
	(a) DL CA	Configuration	Supported Channel Bandwidth [MHz]
			CC1 CC2
	CA_2C	5, 10, 15, 20	5, 10, 15, 20
	CA_2A-2A	5, 10, 15, 20	5, 10, 15, 20
	CA_2A-4A	1, 4, 3, 5, 10, 15, 20	5, 10, 15, 20
	CA_2A-4A(1)	5, 10	5, 10
	CA_2A-4A(2)	5, 10, 15, 20	5, 10, 15, 20
	CA_2A-5A	5, 10, 15, 20	5, 10
	CA_2A-5A(1)	5, 10	5, 10
	CA_2A-12A	5, 10, 15, 20	3, 5, 10
	CA_2A-12A(1)	5, 10, 15, 20	5, 10
	CA_2A-12A(2)	5, 10	5, 10
	CA_2A-13A	5, 10, 15, 20	10
	CA_2A-13A(1)	5, 10	10
	CA_2A-14A	5, 10, 15, 20	5, 10
	CA_2A-17A	5, 10	5, 10
	CA_2A-29A	5, 10	3, 5, 10
	CA_2A-29A(1)	5, 10	5, 10
	CA_2A-29A(2)	5, 10, 15, 20	5, 10
	CA_2A-30A	5, 10, 15, 20	5, 10
	CA_2A-46A	5, 10, 15, 20	20
	CA_2A-66A	1, 4, 3, 5, 10, 15, 20	5, 10, 15, 20
	CA_2A-66A(1)	5, 10	5, 10
	CA_2A-66A(2)	5, 10, 15, 20	5, 10, 15, 20
	CA_2A-71A	5, 10, 15, 20	5, 10, 15, 20
	CA_4A-4A	5, 10, 15, 20	5, 10, 15, 20
	CA_4A-4A(1)	5, 10	5, 10
	CA_4A-5A	5, 10	5, 10
	CA_4A-5A(1)	5, 10, 15, 20	5, 10
	CA_4A-7A	5, 10	5, 10, 15, 20
	CA_4A-7A(1)	5, 10, 15, 20	5, 10, 15, 20
	CA_4A-12A	1, 4, 3, 5, 10	5, 10
	CA_4A-12A(1)	1, 4, 3, 5, 10, 15, 20	5, 10
	CA_4A-12A(2)	5, 10, 15, 20	3, 5, 10
	CA_4A-12A(3)	5, 10	5, 10
	CA_4A-12A(4)	5, 10, 15, 20	5, 10
	CA_4A-12A(5)	5, 10, 15	5
	CA_4A-13A	5, 10, 15, 20	10
	CA_4A-13A(1)	5, 10	10
	CA_4A-17A	5, 10	5, 10
	CA_4A-29A	5, 10	3, 5, 10
	CA_4A-29A(1)	5, 10	5, 10
	CA_4A-29A(2)	5, 10, 15, 20	5, 10
	CA_4A-30A	5, 10, 15, 20	5, 10
	CA_4A-46A	5, 10, 15, 20	20
	CA_4A-71A	5, 10, 15, 20	5, 10, 15, 20
	CA_5A-5B	5, 10	5, 10
	CA_5A-7A	1, 4, 3, 5, 10	10, 15, 20
	CA_5A-7A(1)	5, 10	10, 15, 20
	CA_5A-25A	5, 10	5, 10, 15, 20
	CA_5A-30A	5, 10	5, 10
	CA_5A-41A	5, 10	20
	CA_5A-46A	5, 10	20
	CA_5A-46A(1)	3, 5, 10	10, 20
	CA_5A-66A	5, 10	5, 10, 15, 20
	CA_7A-7B	15	5
	CA_7A-7A	5, 10, 15, 20	10, 15, 20
	CA_7A-7A(1)	5, 10, 15, 20	5, 10, 15, 20
	CA_7A-7A(2)	5, 10, 15, 20	5, 10
	CA_7A-7A(3)	10, 15, 20	10, 15, 20
	CA_7C	15, 20	15, 20
	CA_7C(1)	10, 15, 20	10, 15, 20
	CA_7C(2)	15, 20	10, 15, 20
	CA_7A-12A	5, 10, 15, 20	5, 10
	CA_7A-46A	5, 10, 15, 20	20
	CA_7A-46A(1)	5, 10, 15, 20	10, 20
	CA_7A-66A	5, 10, 15, 20	5, 10, 15, 20
	CA_12A-30A	5	5, 10
	CA_12A-66A	5, 10	1, 4, 3, 5, 10
	CA_12A-66A(1)	5, 10	1, 4, 3, 5, 10, 15, 20
	CA_12A-66A(2)	3, 5, 10	5, 10, 15, 20
	CA_12A-66A(3)	5, 10	5, 10
	CA_12A-66A(4)	5, 10	5, 10, 15, 20
	CA_12A-66A(5)	5	5, 10, 15
	CA_13A-46A	5, 10	20
	CA_13A-66A	5, 10	5, 10, 15, 20
	CA_14A-30A	5, 10	5, 10
	CA_14A-66A	5, 10	5, 10, 15, 20
	CA_25A-25A	5, 10	5, 10
	CA_25A-25A(1)	5, 10, 15, 20	5, 10, 15, 20
	CA_25A-26A	3, 5, 10, 15, 20	1, 4, 3, 5, 10
	CA_25A-26A(1)	3, 5, 10	3, 5, 10
	CA_25A-26A(2)	5, 10	5, 10
	CA_29A-30A	5, 10	5, 10
	CA_29A-66A	5, 10	5, 10, 15, 20
	CA_30A-66A	5, 10	5, 10, 15, 20
	CA_41A-41A	10, 15, 20	10, 15, 20
	CA_41A-41A(1)	5, 10, 15, 20	5, 10, 15, 20
	CA_41C	10, 15, 20	10, 15, 20
	CA_41C(1)	5, 10, 15, 20	5, 10, 15, 20
	CA_41C(2)	10, 15, 20	10, 15, 20
	CA_41C(3)	10, 20	20
	CA_66B	5, 10, 15	5, 10, 15
	CA_66C	5, 10, 15, 20	5, 10, 15, 20
	CA_66A-66A	5, 10, 15, 20	5, 10, 15, 20
	CA_46A-66A	20	5, 10, 15, 20
	CA_66A-71A	5, 10, 15, 20	5, 10, 15, 20

LTE DL CA Checklist				
1 FCC ID:		BCGA2014		
2 References to Standards				
a) LTE release and version numbers of the 3GPP documents used to implement the specific device(s);		Release 13, March 2016 Version		
b) 3GPP release and version numbers required for power measurements and RF test setup conditions;		Release 13, March 2016 Version		
3 When Carrier Aggregation applies, explanations of inter-band and intra-band aggregation Capabilities				
b) Downlink Carrier Aggregation Supported?		Yes		
i) Frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations				
(a) DL CA	Configuration	Supported Channel Bandwidth [MHz]		
		CC1	CC2	
CA_2A-2A-4A				
5, 10, 15, 20				
CA_2A-4A-4A				
5, 10, 15, 20				
CA_2A-2A-5A				
5, 10, 15, 20				
CA_2C-5A				
5, 10, 15, 20				
CA_2A-5B				
5, 10, 15, 20				
CA_2A-2A-12A				
5, 10, 15, 20				
CA_2C-12A				
5, 10, 15, 20				
CA_2A-12B				
5, 10, 15, 20				
CA_2A-2A-13A				
5, 10, 15, 20				
CA_2A-2A-14A				
5, 10, 15, 20				
CA_2A-2A-29A				
5, 10, 15, 20				
CA_2C-29A				
5, 10, 15, 20				
CA_2C-30A				
5, 10, 15, 20				
CA_2A-30A				
5, 10, 15, 20				
CA_2A-4A-46A				
5, 10, 15, 20				
CA_2A-46C				
5, 10, 15, 20				
CA_2A-2A-66A				
5, 10, 15, 20				
CA_2A-66B				
5, 10, 15, 20				
CA_2A-66C				
5, 10, 15, 20				
CA_2A-66A-66A				
5, 10, 15, 20				
CA_2A-2A-71A				
5, 10, 15, 20				
CA_2A-4A-5A				
5, 10, 15, 20				
CA_2A-4A-12A				
5, 10, 15, 20				
CA_2A-4A-13A				
5, 10, 15, 20				
CA_2A-4A-30A				
5, 10, 15, 20				
CA_2A-5A-30A				
5, 10, 15, 20				
CA_2A-5A-66A				
5, 10, 15, 20				
CA_2A-12A-30A				
5, 10, 15, 20				
CA_2A-12A-66A				
5, 10, 15, 20				
CA_2A-13A-46A				
5, 10, 15, 20				
CA_2A-13A-66A				
5, 10, 15, 20				
CA_2A-14A-30A				
5, 10, 15, 20				
CA_2A-14A-66A				
5, 10, 15, 20				
CA_2A-29A-30A				
5, 10, 15, 20				
CA_2A-29A-66A				
5, 10, 15, 20				
CA_2A-30A-66A				
5, 10, 15, 20				
CA_2A-4A-66A				
5, 10, 15, 20				
CA_2A-46A-66A				
5, 10, 15, 20				
CA_2A-46C-66A				
5, 10, 15, 20				
CA_2A-46C-71A				
5, 10, 15, 20				
CA_4A-4A-5A				
5, 10, 15, 20				
CA_4A-4B-5B				
5, 10, 15, 20				
CA_4A-4A-7A				
5, 10				
CA_4A-4A-7A (1)				
5, 10, 15, 20				
CA_4A-4A-7A (2)				
5, 10, 15, 20				
CA_4A-4A-12A				
5, 10, 15, 20				
CA_4A-12B				
5, 10, 15, 20				
CA_4A-4A-13A				
5, 10, 15, 20				
CA_4A-4A-30A				
5, 10, 15, 20				
CA_4A-4A-29A				
5, 10, 15, 20				
CA_4A-4A-30A				
5, 10, 15, 20				
CA_4A-46A-46A				
5, 10, 15, 20				
CA_4A-46C-46C				
5, 10, 15, 20				
CA_4A-46C-71A				
5, 10, 15, 20				
CA_4A-46C-12A				
5, 10				
CA_4A-4A-12A (1)				
5, 10, 15, 20				
CA_4A-12A-30A				
5, 10, 15, 20				
CA_4A-29A-30A				
5, 10, 15, 20				
CA_5B-30A				
5, 10				
CA_5A-46C (1)				
5, 10				
CA_5A-66A				
5, 10				
CA_5A-66B				
5, 10				
CA_5A-66C				
5, 10				
CA_5A-66A-66A				
5, 10				
CA_5A-30A-66A				
5, 10				
CA_5A-46C				
5, 10				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				
CA_5A-46C-5				
5, 10, 20				
CA_5A-46C-10				
5, 10, 20				
CA_5A-46C-20				
5, 10, 20				



LTE DL CA Checklist						
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b) 3GPP release and version numbers required for power measurements and RF test setup conditions:		Release 13, March 2016 Version				
3 When Carrier Aggregation applies, explanations of inter-band and intra-band aggregation Capabilities		Yes				
b) Downlink Carrier Aggregation Supported?		Yes				
i) Frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations						
(a) DL CA	Configuration	Supported Channel Bandwidth [MHz]				
		CC1	CC2	CC3	CC4	CC5
	CA_2A-2A-46D	5, 10, 15, 20	5, 10, 15, 20	20	20	20
	CA_2A-46A-46D	5, 10, 15, 20	20	20	20	20
	CA_46E	5, 10, 15, 20	20	20	20	20
	CA_2A-2A-66A-66B	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15	5, 10, 15
	CA_2A-2A-66A-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20
	CA_2A-2A-5A-66B	5, 10, 15, 20	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15
	CA_2A-2A-5A-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20
	CA_2A-5B-66A-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20
	CA_2A-5B-66C	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20
	CA_2A-13A-46D	5, 10, 15, 20	5, 10	20	20	20
	CA_2A-46D-66A	5, 10, 15, 20	20	20	20	5, 10, 15, 20
	CA_2A-5B-30A-66A	5, 10, 15, 20	5, 10	5, 10	5, 10	5, 10, 15, 20
	CA_4A-46A-46D	5, 10, 15, 20	20	20	20	20
	CA_5B-30A-66A-66A	5, 10	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20
	CA_13A-46E	5, 10	20	20	20	20
	CA_13A-46D-66A	5, 10	20	20	20	5, 10, 15, 20
	CA_41C-41D	10, 15, 20	10, 15, 20	10, 15, 20	10, 15, 20	10, 15, 20
	CA_46A-46D-66A	20	20	20	20	5, 10, 15, 20
	CA_46E-66A	20	20	20	20	5, 10, 15, 20
	CA_46D-66A-66A	20	20	20	5, 10, 15, 20	5, 10, 15, 20

LTE DL CA with DL 4x4 MIMO Checklist			
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2 References to Standards			
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b) 3GPP release and version numbers required for power measurements and RF test setup conditions:	Release 13, March 2016 Version		
3 When Carrier Aggregation applies, explanations of inter-band and intra-band aggregation Capabilities			
b) Downlink Carrier Aggregation Supported?	Yes		
i) Frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations			
(b) DL CA with DL 4x4 MIMO Note: [CC] indicates CC with 4x4 MIMO DL Antenna Configuration			
Configuration	Supported Channel Bandwidth [MHz]	Restriction	
	CC1	CC2	
CA [2C]	5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-2A	5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-4A	1, 4, 3, 5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-4A(1)	5, 10	5, 10	
CA [2A]-4A(2)	5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-[4A]	1, 4, 3, 5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-[4A](1)	5, 10	5, 10	
CA [2A]-[4A](2)	5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-5A	5, 10, 15, 20	5, 10	
CA [2A]-5A(1)	5, 10	5, 10	
CA [2A]-12A	5, 10, 15, 20	3, 5, 10	
CA [2A]-12A(1)	5, 10, 15, 20	5, 10	
CA [2A]-12A(2)	5, 10	5, 10	
CA [2A]-13A	5, 10, 15, 20	10	
CA [2A]-13A(1)	5, 10	10	
CA [2A]-14A	5, 10, 15, 20	5, 10	
CA [2A]-17A	5, 10	5, 10	
CA [2A]-29A	5, 10	3, 5, 10	B29 SCC Only
CA [2A]-29A(1)	5, 10	5, 10	B29 SCC Only
CA [2A]-29A(2)	5, 10, 15, 20	5, 10	B29 SCC Only
CA [2A]-30A	5, 10, 15, 20	5, 10	
CA [2A]-[30A]	5, 10, 15, 20	5, 10	
CA [2A]-46A	5, 10, 15, 20	20	B46 SCC Only
CA [2A]-66A	1, 4, 3, 5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-66A(1)	5, 10	5, 10	
CA [2A]-66A(2)	5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-[66A]	1, 4, 3, 5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-[66A](1)	5, 10	5, 10	
CA [2A]-[66A](2)	5, 10, 15, 20	5, 10, 15, 20	
CA [2A]-71A	5, 10, 15, 20	5, 10, 15, 20	
CA [4A]-4A	5, 10, 15, 20	5, 10, 15, 20	
CA [4A]-4A(1)	5, 10	5, 10	
CA [4A]-5A	5, 10	5, 10	
CA [4A]-5A(1)	5, 10, 15, 20	5, 10	
CA [4A]-7A	5, 10	5, 10, 15, 20	
CA [4A]-7A(1)	5, 10, 15, 20	5, 10, 15, 20	
CA [4A]-[7A]	5, 10	5, 10, 15, 20	
CA [4A]-[7A](1)	5, 10, 15, 20	5, 10, 15, 20	
CA [4A]-12A	1, 4, 3, 5, 10	5, 10	
CA [4A]-12A(1)	5, 10, 15, 20	5, 10	
CA [4A]-12A(2)	5, 10, 15, 20	3, 5, 10	
CA [4A]-12A(3)	5, 10	5, 10	
CA [4A]-12A(4)	5, 10, 15, 20	5, 10	
CA [4A]-12A(5)	5, 10, 15	5	
CA [4A]-13A	5, 10, 15, 20	10	
CA [4A]-13A(1)	5, 10	10	
CA [4A]-17A	5, 10	5, 10	
CA [4A]-29A	5, 10	3, 5, 10	B29 SCC Only
CA [4A]-29A(1)	5, 10	5, 10	B29 SCC Only
CA [4A]-29A(2)	5, 10, 15, 20	5, 10	B29 SCC Only
CA [4A]-30A	5, 10, 15, 20	5, 10	
CA [4A]-[30A]	5, 10, 15, 20	5, 10	
CA [4A]-46A	5, 10, 15, 20	20	B46 SCC Only
CA [4A]-71A	5, 10, 15, 20	5, 10, 15, 20	
CA [5A]-[7A]	1, 4, 3, 5, 10	10, 15, 20	
CA [5A]-[7A](1)	5, 10	10, 15, 20	
CA [5A]-[7A](2)	5, 10	5, 10, 15, 20	
CA [7A]-[7A]	5, 10, 15, 20	10, 15, 20	
CA [7A]-[7A](1)	5, 10, 15, 20	5, 10, 15, 20	
CA [7A]-[7A](2)	5, 10, 15, 20	5, 10	
CA [7A]-[7A](3)	10, 15, 20	10, 15, 20	
CA [7C]	15, 20	15, 20	
CA [7C](1)	10, 15, 20	10, 15, 20	
CA [7C](2)	15, 20	10, 15, 20	
CA [7A]-12A	5, 10, 15, 20	5, 10	
CA [7A]-46A	5, 10, 15, 20	20	B46 SCC Only
CA [7A]-46A(1)	5, 10, 15, 20	10, 20	B46 SCC Only
CA [7A]-66A	5, 10, 15, 20	5, 10, 15, 20	
CA [7A]-66A(1)	5, 10	5, 10, 15, 20	
CA [7A]-66A(2)	5, 10, 15, 20	5, 10, 15, 20	
CA [7A]-66A(3)	5, 10	5, 10	
CA [7A]-66A(4)	5, 10	5, 10, 15, 20	
CA [7A]-66A(5)	5	5, 10, 15	
CA [7A]-[66A]	5, 10	5, 10, 15, 20	
CA [7A]-[66A](1)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](2)	5, 10	5, 10	
CA [7A]-[66A](3)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](4)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](5)	5	5, 10, 15	
CA [7A]-[66A](6)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](7)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](8)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](9)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](10)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](11)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](12)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](13)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](14)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](15)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](16)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](17)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](18)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](19)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](20)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](21)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](22)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](23)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](24)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](25)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](26)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](27)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](28)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](29)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](30)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](31)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](32)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](33)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](34)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](35)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](36)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](37)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](38)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](39)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](40)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](41)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](42)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](43)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](44)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](45)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](46)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](47)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](48)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](49)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](50)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](51)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](52)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](53)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](54)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](55)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](56)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](57)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](58)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](59)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](60)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](61)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](62)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](63)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](64)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](65)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](66)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](67)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](68)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](69)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](70)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](71)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](72)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](73)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](74)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](75)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](76)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](77)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](78)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](79)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](80)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](81)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](82)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](83)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](84)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](85)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](86)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](87)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](88)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](89)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](90)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](91)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](92)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](93)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](94)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](95)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](96)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](97)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](98)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](99)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](100)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](101)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](102)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](103)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](104)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](105)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](106)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](107)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](108)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](109)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](110)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](111)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](112)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](113)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](114)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](115)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](116)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](117)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](118)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](119)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](120)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](121)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](122)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](123)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](124)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](125)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](126)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](127)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](128)	5, 10	5, 10, 15, 20	
CA [7A]-[66A](129)	5,		



### LTE DL CA with DL 4x4 MIMO Checklist

1	FCC ID:	<b>BCGA2014</b>					
2	References to Standards						
a)	LTE release and version numbers of the 3GPP documents used to implement the specific device(s):	Release 13, March 2016 Version					
b)	3GPP release and version numbers required for power measurements and RF test setup conditions:	Release 13, March 2016 Version					
3	When Carrier Aggregation applies, explanations of inter-band and intra-band aggregation Capabilities						
b)	Downlink Carrier Aggregation Supported?	Yes					
	i) Frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations						
	(a) DL CA	Configuration	Supported Channel Bandwidth [MHz]				
			CC1	CC2	CC3	CC4	
		CA_[2A]-2A-12B	5, 10, 15, 20	5, 10, 15, 20	5	5, 10	
		CA_[2A]-2A-46C	5, 10, 15, 20	5, 10, 15, 20	20	20	B46 SCC Only
		CA_[2A]-46D	5, 10, 15, 20	20	20	20	B46 SCC Only
		CA_[2A]-2A-66B	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15	5, 10, 15	
		CA_[2A]-2A-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	
		CA_2A-[66A]-66B	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15	5, 10, 15	
		CA_2A-[66A]-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	
		CA_[2A]-4A-5B	5, 10, 15, 20	5, 10, 15, 20	5, 10	5, 10	
		CA_2A-[4A]-5B	5, 10, 15, 20	5, 10, 15, 20	5, 10	5, 10	
		CA_[2A]-4A-12B	5, 10, 15, 20	5, 10, 15, 20	5	5, 10	
		CA_2A-[4A]-12B	5, 10, 15, 20	5, 10, 15, 20	5	5, 10	
		CA_2A-5B-[30A]	5, 10, 15, 20	5, 10	5, 10	5, 10	
		CA_[2A]-5A-66B	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15	
		CA_[2A]-5A-66C	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	
		CA_[2A]-5B-66A	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20	
		CA_2A-5B-[66A]	5, 10, 15, 20	5, 10	5, 10	5, 10, 15, 20	
		CA_[2A]-12A-66C	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	
		CA_[2A]-13A-66B	5, 10, 15, 20	5, 10	5, 10, 15	5, 10, 15	
		CA_[2A]-13A-66C	5, 10, 15, 20	5, 10	5, 10, 15, 20	5, 10, 15, 20	
		CA_[2A]-46C-66A	5, 10, 15, 20	20	20	5, 10, 15, 20	B46 SCC Only
		CA_2A-46C-[66A]	5, 10, 15, 20	20	20	5, 10, 15, 20	B46 SCC Only
		CA_[4A]-4A-5B	5, 10, 15, 20	5, 10, 15, 20	5, 10	5, 10	
		CA_[4A]-4A-12B	5, 10, 15, 20	5, 10, 15, 20	5	5, 10	
		CA_[4A]-46D	5, 10, 15, 20	20	20	20	B46 SCC Only
		CA_5B-[66A]-66A	5, 10	5, 10	5, 10, 15, 20	5, 10, 15, 20	
		CA_5A-[66A]-66B	5, 10	5, 10, 15, 20	5, 10, 15	5, 10, 15	
		CA_5A-[66A]-66C	5, 10	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	
		CA_5B-[30A]-66A	5, 10	5, 10	5, 10	5, 10, 15, 20	
		CA_[7A]-46D	5, 10, 15, 20	20	20	20	B46 SCC Only
		CA_[7A]-46D-(1)	5, 10, 15, 20	10, 20	10, 20	20	B46 SCC Only
		CA_13A-[66A]-66B	5, 10	5, 10, 15, 20	5, 10, 15	5, 10, 15	
		CA_13A-[66A]-66C	5, 10	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20	
		CA_13A-46C-[66A]	5, 10	20	20	5, 10, 15, 20	B46 SCC Only
		CA_[41A]-41D	5, 10, 15, 20	10, 15, 20	10, 15, 20	10, 15, 20	
		CA_46D-[66A]	20	20	20	5, 10, 15, 20	B46 SCC Only
		CA_46C-[66A]-66A	20	20	5, 10, 15, 20	5, 10, 15, 20	B46 SCC Only

Note: [CC] indicates CC with 4x4 MIMO DL Antenna Configuration

UL CA Checklist						
1  FCC ID:	BCGA2014					
2  References to Standards						
a) LTE release and version numbers of the 3GPP documents used to implement the specific device(s):	Release 13, March 2016 Version					
b) 3GPP release and version numbers required for power measurements and RF test setup conditions:	Release 13, March 2016 Version					
3  When Carrier Aggregation applies, explanations of inter-band and intra-band aggregation Capabilities						
c) Uplink Carrier Aggregation Supported?	Yes					
i) Frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations						
CA_7C (1) UL CA	Configuration	Supported Channel Bandwidth [MHz]				
		CC1	CC2	CC3	CC4	CC5
CA_7C (1)	CA_7C (1)	10,15,20	10,15,20	-	-	-
		CA_41C (1) UL CA	Supported Channel Bandwidth [MHz]			
CA_41C (1)	Configuration	CC1	CC2	CC3	CC4	CC5
		5,10,15,20	5,10,15,20	-	-	-
ii) ULCA with the following additional DLCA configurations						
General restriction: + All uplink operations for all configurations are limited to CA_41C and CA_7C only	Configuration	Supported Channel Bandwidth [MHz]				
		CC1	CC2	CC3	CC4	CC5
CA_41C-41A	CA_41C-41A	5,10,15,20	5,10,15,20	5,10,15,20	-	-
		10,15,20	10,15,20	10,15,20	-	-
		10,15,20	10,15,20	10,15,20	5,10,15,20	-
		10,15,20	10,15,20	10,15,20	10,15,20	-
		15,20	15,20	15,20	20	-
		10,15,20	10,15,20	10,15,20	10,15,20	10,15,20
Note: [CC] indicates CC with 4x4 MIMO DL Antenna Configuration  General restrictions: + All uplink operations for all configurations are limited to CA_41C and CA_7C only + 4x4 MIMO Antenna configuration is limited to DL only.	Configuration	Supported Channel Bandwidth [MHz]				
		CC1	CC2	CC3	CC4	CC5
		CA_41C (1)	5,10,15,20	5,10,15,20	-	-
		CA_41C-41A	5,10,15,20	5,10,15,20	5,10,15,20	-
		CA_41C-41A	5,10,15,20	5,10,15,20	5,10,15,20	-
		CA_41D-41A	10,15,20	10,15,20	10,15,20	-