

## Attachment .8 LTE Downlink CA Power

### 1. LTE Downlink Only Carrier Aggregation Test Selection and setup

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers (CCs) supported by the product implementation. For those configurations required by April 2018 TCBC Workshop notes, conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only.

All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

#### Downlink Carrier aggregation:

1. This device only supports downlink carrier aggregation. For every supported combination of downlink carrier aggregation, power measurements were performed 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.
2. All control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
3. Per FCC KDB publication 941225 D05A v01r02, Section C)3)b)ii), PCC uplink channel was selected at downlink carrier aggregation combinations. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
4. For continuous intra-band carrier aggregation, the downlink channel spacing between the component carriers was set to multiple of 300kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521.
5. For non-continuous intra-band carrier aggregation, 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.
6. All selected downlink channels remained fully within the downlink transmission band of the respective component carrier.



Power Measurement setup

## 2. LTE Downlink MIMO Carrier Aggregation Powers

### LTE Downlink 2CA 4X4 MIMO Maximum Conducted Power

Combination	PCC									SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviation (2)-(1)
2A-[4A](0,2)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	2	20	900	1960	23.22	23.29	0.07
2A-[4A](1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	2	10	900	1960	23.22	23.27	0.05
2A-[66A](0,2)	66	20	132322	1745	66786	2145	QPSK	1	99	2	20	900	1960	23.4	23.3	-0.1
2A-[66A](1)	66	10	132022	1715	66486	2115	QPSK	1	49	2	10	900	1960	23.36	23.28	-0.08
[4A]-[4A](0)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	4	20	2050	2120	23.22	23.27	0.05
[4A]-[4A](1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	4	10	2000	2115	23.22	23.31	0.09
[4A]-5A(0,1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	5	10	2525	881.5	23.22	23.3	0.08
[4A]-5A(0)	5	5	20625	846.5	2625	891.5	QPSK	1	0	4	10	2175	2132.5	25.04	23.27	-1.77
[4A]-5A(1)	5	5	20625	846.5	2625	891.5	QPSK	1	0	4	20	2175	2132.5	25.04	24.9	-0.14
[4A]-12A(0,1,2,3,4)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	12	10	5095	737.5	23.22	23.26	0.04
[4A]-12A(5)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	12	5	5095	737.5	23.22	23.29	0.07
[4A]-13A(0,1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	13	10	5230	751	23.22	23.3	0.08
[4A]-17A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	17	10	5790	740	23.22	23.3	0.08
12A-[66A](0,3)	66	10	132022	1715	66486	2115	QPSK	1	49	12	10	5095	737.5	23.36	23.31	-0.05
12A-[66A](1,2,4)	66	20	132322	1745	66786	2145	QPSK	1	99	12	10	5095	737.5	23.4	23.34	-0.06
12A-[66A](5)	66	10	132022	1715	66486	2115	QPSK	1	49	12	5	5095	737.5	23.36	23.37	0.01
[66A]-[66A]	66	20	132322	1745	66786	2145	QPSK	1	99	66	20	66536	2120	23.4	23.39	-0.01

### LTE Downlink 3CA 4X4 MIMO Maximum Conducted Power

Combination	PCC									SCC				SCC				Tx Power		Deviation (2)-(1)
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	
2A-[4A]-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	23.22	23.27	0.05
2A-[4A]-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	2	20	900	1960	13	10	5230	751	23.22	23.3	0.08
[4A]-[4A]-12A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	4	20	2050	2120	12	10	5095	737.5	23.22	23.29	0.07
[4A]-[4A]-17A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	4	10	2000	2115	17	10	5790	740	23.22	23.3	0.08
12A-[66A]-[66A]	66	20	132322	1745	66786	2145	QPSK	1	99	66	20	66536	2120	12	10	5095	737.5	23.4	23.37	-0.03

### LTE Downlink 2CA 4X4 MIMO Hotspot Reduction Conducted Power

Combination	PCC										SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviaion (2)-(1)	
2A-[4A](0,2)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	2	20	900	1960	20.34	20.24	-0.1	
2A-[4A](1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	2	10	900	1960	20.31	20.19	-0.12	
2A-[66A](0,2)	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	2	20	900	1960	20.43	20.36	-0.07	
2A-[66A](1)	66	10	132022	1715	66486	2115	64QAM	1	0	2	10	900	1960	20.39	20.35	-0.04	
[4A]-[4A](0)	4	15	20025	1717.5	2025	2117.5	16QAM	1	0	4	20	2300	2145	20.3	20.19	-0.11	
[4A]-[4A](1)	4	10	20000	1715	2000	2115	16QAM	1	0	4	10	2350	2150	20.28	20.2	-0.08	
[4A]-5A(0)	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	5	10	2525	881.5	20.31	20.19	-0.12	
[4A]-5A(1)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	5	10	2525	881.5	20.34	20.21	-0.13	
[4A]-12A(0,3)	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	12	10	5095	737.5	20.31	20.28	-0.03	
[4A]-12A(1,2,4)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	12	10	5095	737.5	20.34	20.3	-0.04	
[4A]-12A(5)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	12	5	5095	737.5	20.34	20.29	-0.05	
[4A]-13A(0)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	13	10	5230	751	20.34	20.31	-0.03	
[4A]-13A(1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	13	10	5230	751	20.31	20.27	-0.04	
[4A]-17A	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	17	10	5790	740	20.31	20.29	-0.02	
12A-[66A](0,3)	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	12	10	5095	737.5	20.31	20.21	-0.1	
12A-[66A](1,2,4)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	12	10	5095	737.5	20.34	20.27	-0.07	
12A-[66A](5)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	12	5	5095	737.5	20.34	20.29	-0.05	
[66A]-[66A]	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	66	20	67036	2170	20.43	20.29	-0.14	

### LTE Downlink 3CA 4X4 MIMO Hotspot Reduction Conducted Power

Combination	PCC										SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviaion (2)-(1)	
2A-[4A]-5A	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	2	20	900	1960	5	10	2525	881.5	20.34	20.28	-0.06	
2A-[4A]-13A	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	2	20	900	1960	13	10	5230	751	20.34	20.3	-0.04	
[4A]-[4A]-12A	4	15	20025	1717.5	2025	2117.5	16QAM	1	0	4	20	2300	2145	12	10	5095	737.5	20.3	20.27	-0.03	
[4A]-[4A]-17A	4	15	20025	1717.5	2025	2117.5	16QAM	1	0	4	10	2350	2150	17	10	5790	740	20.3	20.25	-0.05	
12A-[66A]-[66A]	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	66	20	66682	2134.6	12	10	5095	737.5	20.43	20.36	-0.07	

### LTE Downlink 2CA 4X4 MIMO Grip Sensor Reduction Conducted Power

Combination	PCC										SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviaion (2)-(1)	
2A-[4A](0,2)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	2	20	900	1960	20.14	20.06	-0.08	
2A-[4A](1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	2	10	900	1960	20.14	20.1	-0.04	
2A-[66A](0,2)	66	20	132072	1720	66536	2120	16QAM	1	0	2	20	900	1960	20.15	20.11	-0.04	
2A-[66A](1)	66	10	132022	1715	66486	2115	16QAM	1	0	2	10	900	1960	20.14	20.09	-0.05	
[4A]-[4A](0)	4	10	20000	1715	2000	2115	16QAM	1	49	4	20	2300	2145	20.11	20.05	-0.06	
[4A]-[4A](1)	4	10	20000	1715	2000	2115	16QAM	1	49	4	10	2350	2150	20.11	20.09	-0.02	
[4A]-5A(0,1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	5	10	2525	881.5	20.14	20.07	-0.07	
[4A]-12A(0,1,2,3,4)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	12	10	5095	737.5	20.14	20.1	-0.04	
[4A]-12A(5)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	12	5	5095	737.5	20.14	20.14	0	
[4A]-13A(0,1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	13	10	5230	751	20.14	20.09	-0.05	
[4A]-17A	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	17	10	5790	740	20.14	20.1	-0.04	
12A-[66A](0,3)	66	10	132022	1715	66486	2115	16QAM	1	0	12	10	5095	737.5	20.14	20.07	-0.07	
12A-[66A](1,2,4)	66	20	132072	1720	66536	2120	16QAM	1	0	12	10	5095	737.5	20.15	20.1	-0.05	
12A-[66A](5)	66	10	132022	1715	66486	2115	16QAM	1	0	12	5	5095	737.5	20.14	20.13	-0.01	
[66A]-[66A]	66	20	132072	1720	66536	2120	16QAM	1	0	66	20	67036	2170	20.15	20.09	-0.06	

## LTE Downlink 3CA 4X4 MIMO Grip Sensor Reduction Conducted Power

Combination	PCC									SCC				SCC				Tx Power		Deviation (2)-(-1)
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	
2A-[4A]-5A	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	2	20	900	1960	5	10	2525	881.5	20.14	20.14	-0.06
2A-[4A]-13A	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	2	20	900	1960	13	10	5230	751	20.14	20.09	-0.05
[4A]-[4A]-12A	4	10	20000	1715	2000	2115	16QAM	1	49	4	20	2300	2145	12	10	5095	737.5	20.11	20.06	-0.05
[4A]-[4A]-17A	4	10	20000	1715	2000	2115	16QAM	1	49	4	20	2300	2145	17	10	5790	740	20.11	20.09	-0.02
12A-[66A]-[66A]	66	20	132072	1720	66536	2120	16QAM	1	0	66	20	67036	2170	12	10	5095	737.5	20.15	20.08	-0.07

### 3. LTE Downlink Carrier Aggregation Powers

#### LTE Downlink 2CA Maximum Conducted Power

Combination	PCC									SCC				Tx Power		Deviation (2)-(-1)
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	
2A-2A	2	15	18900	1880	900	1960	QPSK	1	0	2	20	1100	1980	23.17	23.12	-0.05
2C	2	15	18900	1880	900	1960	QPSK	1	0	2	20	1071	1977.1	23.17	23.15	-0.02
2A-4A(0,2)	2	15	18900	1880	900	1960	QPSK	1	0	4	20	2175	2132.5	23.17	23.18	0.01
2A-4A(1)	2	10	18900	1880	900	1960	QPSK	1	49	4	10	2175	2132.5	23.13	23.1	-0.03
2A-4A(0,2)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	2	20	900	1960	23.22	23.3	0.08
2A-4A(1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	2	10	900	1960	23.22	23.34	0.12
2A-5A(0)	2	15	18900	1880	900	1960	QPSK	1	0	5	10	2525	881.5	23.17	23.18	0.01
2A-5A(1)	2	10	18900	1880	900	1960	QPSK	1	0	5	10	2525	881.5	23.13	23.13	0
2A-5A(0)	5	5	20625	846.5	2625	891.5	QPSK	1	0	2	20	900	1960	25.04	24.89	-0.15
2A-5A(1)	5	5	20625	846.5	2625	891.5	QPSK	1	0	2	10	900	1960	25.04	24.88	-0.16
2A-12A(0)	2	15	18900	1880	900	1960	QPSK	1	0	12	10	5095	737.5	23.17	23.13	-0.04
2A-12A(1)	2	10	18900	1880	900	1960	QPSK	1	49	12	10	5095	737.5	23.13	23.11	-0.02
2A-12A(0,1)	12	10	23095	707.5	5095	737.5	QPSK	1	0	2	20	900	1960	23.97	23.96	-0.01
2A-12A(2)	12	10	23095	707.5	5095	737.5	QPSK	1	0	2	10	900	1960	23.97	23.96	-0.01
2A-13A(0)	2	15	18900	1880	900	1960	QPSK	1	0	13	10	5230	751	23.17	23.13	-0.04
2A-13A(1)	2	10	18900	1880	900	1960	QPSK	1	49	13	10	5230	751	23.13	23.14	0.01
2A-13A(0)	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	23.99	24.08	0.09
2A-13A(1)	13	10	23230	782	5230	751	QPSK	1	24	2	10	900	1960	23.99	24.1	0.11
2A-17A	2	10	18900	1880	900	1960	QPSK	1	49	17	10	5790	740	23.13	23.13	0
2A-17A	17	10	23790	710	5790	740	QPSK	1	0	2	10	900	1960	23.94	23.96	0.02
2A-66A(0,2)	2	15	18900	1880	900	1960	QPSK	1	0	66	20	66786	2145	23.17	23.16	-0.01
2A-66A(1)	2	10	18900	1880	900	1960	QPSK	1	49	66	10	66786	2145	23.13	23.12	-0.01
2A-66A(0,2)	66	20	132322	1745	66786	2145	QPSK	1	99	2	20	900	1960	23.4	23.26	-0.14
2A-66A(1)	66	10	132022	1715	66486	2115	QPSK	1	49	2	10	900	1960	23.36	23.28	-0.08
4A-4A(0)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	4	20	2050	2120	23.22	23.33	0.11
4A-4A(1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	4	10	2000	2115	23.22	23.3	0.08
4A-5A(0,1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	5	10	2525	881.5	23.22	23.29	0.07
4A-5A(0)	5	5	20625	846.5	2625	891.5	QPSK	1	0	4	10	2175	2132.5	25.04	24.91	-0.13
4A-5A(1)	5	5	20625	846.5	2625	891.5	QPSK	1	0	4	20	2175	2132.5	25.04	24.89	-0.15
4A-12A(0,1,2,3,4)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	12	10	5095	737.5	23.22	23.32	0.1
4A-12A(5)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	12	5	5095	737.5	23.22	23.28	0.06
4A-12A(0,3)	12	10	23095	707.5	5095	737.5	QPSK	1	0	4	10	2175	2132.5	23.97	23.98	0.01
4A-12A(1,2,4)	12	10	2309	707.5	5095	737.5	QPSK	1	0	4	20	2175	2132.5	23.97	23.96	-0.01
4A-12A(5)	12	5	23155	713.5	5155	743.5	QPSK	1	0	4	15	2175	2132.5	23.86	23.89	0.03
4A-13A(0,1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	13	10	5230	751	23.22	23.31	0.09
4A-13A(0)	13	10	23230	782	5230	751	QPSK	1	24	4	20	2175	2132.5	23.99	24.09	0.1
4A-13A(1)	13	10	23230	782	5230	751	QPSK	1	24	4	10	2175	2132.5	23.99	24.11	0.12
4A-17A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	17	10	5790	740	23.22	23.31	0.09
4A-17A	17	10	23790	710	5790	740	QPSK	1	0	4	10	2175	2132.5	23.94	23.93	-0.01
5A-41A	5	5	20625	846.5	2625	891.5	QPSK	1	0	41	20	40620	2593	25.04	24.91	-0.13
5A-41A(PC3)	41	20	41490	2680	41490	2680	QPSK	1	0	5	10	2525	881.5	24.72	24.71	-0.01
5A-41A(PC2)	41	20	41490	2680	41490	2680	QPSK	1	0	5	10	2525	881.5	26.1	26.09	-0.01
12A-66A(0,3)	12	10	23095	707.5	5095	737.5	QPSK	1	0	66	10	66786	2145	23.97	23.94	-0.03
12A-66A(1,2,4)	12	10	23095	707.5	5095	737.5	QPSK	1	0	66	20	66786	2145	23.97	23.96	-0.01
12A-66A(5)	12	5	23155	713.5	5155	743.5	QPSK	1	0	66	15	66786	2145	23.86	23.89	0.03
12A-66A(0,3)	66	10	132022	1715	66486	2115	QPSK	1	49	12	10	5095	737.5	23.36	23.3	-0.06
12A-66A(1,2,4)	66	20	132322	1745	66786	2145	QPSK	1	99	12	10	5095	737.5	23.4	23.36	-0.04
12A-66A(5)	66	10	132022	1715	66486	2115	QPSK	1	49	12	5	5095	737.5	23.36	23.31	-0.05
41A-41A(PC3)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	39750	2506	24.72	24.71	-0.01
41A-41A(PC2)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	39750	2506	26.1	26.12	0.02
41C(PC3)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	24.72	24.7	-0.02
41C(PC2)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	26.1	26.1	0
66A-66A	66	20	132322	1745	66786	2145	QPSK	1	99	66	20	66536	2120	23.4	23.36	-0.04
66B	66	10	132022	1715	66486	2115	QPSK	1	49	66	10	66585	2124.9	23.36	23.27	-0.09
66C	66	20	132322	1745	66786	2145	QPSK	1	99	66	20	66984	2164.8	23.4	23.37	-0.03

### LTE Downlink 3CA Maximum Conducted Power

Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviation (2)-(1)
2A-4A-5A	2	15	18900	1880	900	1960	QPSK	1	0	4	20	2175	2132.5	5	10	2525	881.5	23.17	23.14	-0.03
2A-4A-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	23.22	23.29	0.07
2A-4A-5A	5	5	20625	846.5	2625	891.5	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	25.04	24.91	-0.13
2A-4A-13A	2	15	18900	1880	900	1960	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	23.17	23.14	-0.03
2A-4A-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	2	20	900	1960	13	10	5230	751	23.22	23.35	0.13
2A-4A-13A	13	10	23230	782	5230	751	QPSK	1	49	2	20	900	1960	4	20	2175	2132.5	23.99	24.1	0.11
4A-4A-12A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	4	20	2050	2120	12	10	5095	737.5	23.22	23.4	0.18
4A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	0	4	20	2050	2120	4	20	2300	2145	23.97	23.98	0.01
4A-4A-17A	4	5	20375	1752.5	2375	2152.5	QPSK	1	0	4	20	2050	2120	17	10	5790	740	23.22	23.35	0.13
4A-4A-17A	17	10	23790	710	5790	740	QPSK	1	0	4	20	2050	2120	4	20	2300	2145	23.94	23.91	-0.03
12A-66A-66A	12	10	23095	707.5	5095	737.5	QPSK	1	0	66	20	66536	2120	66	20	67036	2170	23.97	24.01	0.04
12A-66A-66A	66	20	132322	1745	66786	2145	QPSK	1	99	66	20	66536	2120	12	10	5095	737.5	23.4	23.32	-0.08
41A-41C(PC3)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	39948	2525.8	41	20	39750	2506	24.72	24.72	0
41A-41C(PC2)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	39948	2525.8	41	20	39750	2506	26.1	26.13	0.03
41C-41A(PC3)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	39750	2506	24.72	24.75	0.03
41C-41A(PC2)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	39750	2506	26.1	26.11	0.01
41D(PC3)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	41094	2640.4	24.72	24.81	0.09
41D(PC2)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	41094	2640.4	26.1	26.11	0.01

### LTE Downlink 4CA Maximum Conducted Power

Combination	PCC									SCC				SCC				Tx Power						
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviation (2)-(1)
41C-41C(PC3)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	39948	2525.8	41	20	39750	2506	24.72	24.75	0.03
41C-41C(PC2)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	39948	2525.8	41	20	39750	2506	26.1	26.14	0.04
41A-41D(PC3)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	40146	2545.6	41	20	39948	2525.8	41	20	39750	2506	24.72	24.81	0.09
41A-41D(PC2)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	40146	2545.6	41	20	39948	2525.8	41	20	39750	2506	26.1	26.11	0.01
41D-41A(PC3)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	41094	2640.4	41	20	39750	2506	24.72	24.83	0.11
41D-41A(PC2)	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	41094	2640.4	41	20	39750	2506	26.1	26.13	0.03

### LTE Downlink 2CA Hotspot Reduction Conducted Power

Combination	PCC									SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation (2)-(1)
2A-2A	2	10	18650	1855	650	1935	16QAM	1	0	2	20	1150	1985	20.27	20.26	-0.01
2C	2	10	18900	1880	900	1960	16QAM	1	0	2	20	1044	1974.4	20.3	20.22	-0.08
2A-4A(0,2)	2	10	18900	1880	900	1960	16QAM	1	0	4	20	2175	2132.5	20.3	20.2	-0.1
2A-4A(1)	2	10	18900	1880	900	1960	16QAM	1	0	4	10	2175	2132.5	20.3	20.29	-0.01
2A-4A(0,2)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	2	20	900	1960	20.34	20.31	-0.03
2A-4A(1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	2	10	900	1960	20.31	20.11	-0.2
2A-5A(0,1)	2	10	18900	1880	900	1960	16QAM	1	0	5	10	2525	881.5	20.3	20.21	-0.09
2A-12A(0,1,2)	2	10	18900	1880	900	1960	16QAM	1	0	12	10	5095	737.5	20.3	20.19	-0.11
2A-13A(0,1)	2	10	18900	1880	900	1960	16QAM	1	0	13	10	5230	751	20.3	20.18	-0.12
2A-17A	2	10	18900	1880	900	1960	16QAM	1	0	17	10	5790	740	20.3	20.27	-0.03
2A-66A(0,2)	2	10	18900	1880	900	1960	16QAM	1	0	66	20	66786	2145	20.3	20.21	-0.09
2A-66A(1)	2	10	18900	1880	900	1960	16QAM	1	0	66	10	66786	2145	20.3	20.21	-0.09
2A-66A(0,2)	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	2	20	900	1960	20.43	20.27	-0.16
2A-66A(1)	66	10	132022	1715	66486	2115	64QAM	1	0	2	10	900	1960	20.39	20.25	-0.14
4A-4A(0)	4	15	20025	1717.5	2025	2117.5	16QAM	1	0	4	20	2300	2145	20.3	20.19	-0.11
4A-4A(1)	4	10	20000	1715	2000	2115	16QAM	1	0	4	10	2350	2150	20.28	20.18	-0.1
4A-5A(0)	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	5	10	2525	881.5	20.31	20.21	-0.1
4A-5A(1)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	5	10	2525	881.5	20.34	20.22	-0.12
4A-12A(0,3)	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	12	10	5095	737.5	20.31	20.19	-0.12
4A-12A(1,2,4)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	12	10	5095	737.5	20.34	20.21	-0.13
4A-12A(5)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	12	5	5095	737.5	20.34	20.22	-0.12
4A-13A(0)	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	13	10	5230	751	20.34	20.24	-0.1
4A-13A(1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	13	10	5230	751	20.31	20.19	-0.12
4A-17A	4	10	20175	1732.5	2175	2132.5	16QAM	1	0	17	10	5790	740	20.31	20.25	-0.06
5A-41A(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	0	5	10	2525	881.5	22.89	22.84	-0.05
5A-41A(PC2)	41	20	40185	2549.5	40185	2549.5	16QAM	1	0	5	10	2525	881.5	22.88	22.87	-0.01
12A-66A(0,3)	66	10	132022	1715	66486	2115	64QAM	1	0	12	10	5095	737.5	20.39	20.29	-0.1
12A-66A(1,2,4)	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	12	10	5095	737.5	20.43	20.3	-0.13
12A-66A(5)	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	12	5	5095	737.5	20.43	20.3	-0.13
41A-41A(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	41490	2680	22.83	22.86	0.03
41A-41A(PC2)	41	20	40185	2549.5	40185	2549.5	QPSK	100	0	41	20	41490	2680	22.96	22.84	-0.12
41C(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	22.83	22.88	0.05
41C(PC2)	41	20	40185	2549.5	40185	2549.5	QPSK	100	0	41	20	40383	2569.3	22.96	22.85	-0.11
66A-66A	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	66	20	67036	2170	20.43	20.26	-0.17
66B	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	66	5	66604	2126.8	20.43	20.29	-0.14
66C	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	66	20	66682	2134.6	20.43	20.31	-0.12

### LTE Downlink 3CA Hotspot Reduction Conducted Power

Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation (2)-(1)
2A-4A-5A	2	10	18650	1855	650	1935	16QAM	1	0	4	20	2175	2132.5	5	10	2525	881.5	20.27	20.19	-0.08
2A-4A-5A	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	2	20	900	1960	5	10	2525	881.5	20.34	20.21	-0.13
2A-4A-13A	2	10	18650	1855	650	1935	16QAM	1	0	4	20	2175	2132.5	13	10	5230	751	20.27	20.17	-0.1
2A-4A-13A	4	15	20175	1732.5	2175	2132.5	16QAM	1	0	2	20	900	1960	13	10	5230	751	20.34	20.24	-0.1
4A-4A-12A	4	15	20025	1717.5	2025	2117.5	16QAM	1	0	4	20	2300	2145	12	10	5095	737.5	20.3	20.2	-0.1
4A-4A-17A	4	15	20025	1717.5	2025	2117.5	16QAM	1	0	4	10	2350	2150	17	10	5790	740	20.3	20.21	-0.09
12A-66A-66A	66	15	132047	1717.5	66511	2117.5	64QAM	1	0	66	20	66682	2134.6	12	10	5095	737.5	20.43	20.31	-0.12
41A-41C(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	41292	2660.2	41	20	41490	2680	22.83	22.9	0.07
41A-41C(PC2)	41	20	40185	2549.5	40185	2549.5	QPSK	100	0	41	20	41292	2660.2	41	20	41490	2680	22.96	22.9	-0.06
41C-41A(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	41	20	41490	2680	22.83	22.94	0.11
41C-41A(PC2)	41	20	40185	2549.5	40185	2549.5	QPSK	100	0	41	20	40383	2569.3	41	20	41490	2680	22.96	22.85	-0.11
41D(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	41	20	40581	2589.1	22.83	22.95	0.12
41D(PC2)	41	20	40185	2549.5	40185	2549.5	QPSK	100	0	41	20	40383	2569.3	41	20	40581	2589.1	22.96	22.85	-0.11

### LTE Downlink 4CA Hotspot Reduction Conducted Power

Combination	PCC									SCC				SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation (2)-(1)
41C-41C(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	41	20	41292	2660.2	41	20	41490	2680	22.83	22.91	0.08
41C-41C(PC2)	41	20	40185	2549.5	40185	2549.5	QPSK	100	0	41	20	40383	2569.3	41	20	41292	2660.2	41	20	41490	2680	22.96	22.94	-0.02
41A-41D(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	41094	2640.4	41	20	41292	2660.2	41	20	41490	2680	22.83	22.95	0.12
41A-41D(PC2)	41	20	40185	2549.5	40185	2549.5	QPSK	100	0	41	20	41094	2640.4	41	20	41292	2660.2	41	20	41490	2680	22.96	22.98	0.02
41D-41A(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	41	20	40581	2589.1	41	20	41490	2680	22.83	22.86	0.03
41D-41A(PC2)	41	20	40185	2549.5	40185	2549.5	QPSK	100	0	41	20	40383	2569.3	41	20	40581	2589.1	41	20	41490	2680	22.96	22.92	-0.04

### LTE Downlink 2CA Grip Sensor Reduction Conducted Power

Combination	PCC									SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviation (2)-(1)
2A-2A	2	5	18625	1852.5	625	1932.5	16QAM	1	12	2	20	1100	1980	19.99	19.99	0
2C	2	5	18900	1880	900	1960	16QAM	1	12	2	20	1017	1971.7	20.02	19.98	-0.04
2A-4A(0,2)	2	5	18900	1880	900	1960	16QAM	1	12	4	20	2175	2132.5	20.02	19.96	-0.06
2A-4A(1)	2	5	18900	1880	900	1960	16QAM	1	12	4	10	2175	2132.5	20.02	19.98	-0.04
2A-4A(0,2)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	2	20	900	1960	20.14	20.03	-0.11
2A-4A(1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	2	10	900	1960	20.14	20.05	-0.09
2A-5A(0,1)	2	5	18900	1880	900	1960	16QAM	1	12	5	10	2525	881.5	20.02	20.01	-0.01
2A-12A(0,1,2)	2	5	18900	1880	900	1960	16QAM	1	12	12	10	5095	737.5	20.02	20.01	-0.01
2A-13A(0,1)	2	5	18900	1880	900	1960	16QAM	1	12	13	10	5230	751	20.02	20.02	0
2A-17A	2	5	18900	1880	900	1960	16QAM	1	12	17	10	5790	740	20.02	20.03	0.01
2A-66A(0,2)	2	5	18900	1880	900	1960	16QAM	1	12	66	20	66786	2145	20.02	20.04	0.02
2A-66A(1)	2	5	18900	1880	900	1960	16QAM	1	12	66	10	66786	2145	20.02	20.01	-0.01
2A-66A(0,2)	66	20	132072	1720	66536	2120	16QAM	1	0	2	20	900	1960	20.15	20.05	-0.1
2A-66A(1)	66	10	132022	1715	66486	2115	16QAM	1	0	2	10	900	1960	20.14	20.09	-0.05
4A-4A(0)	4	10	20000	1715	2000	2115	16QAM	1	49	4	20	2300	2145	20.11	20.14	0.03
4A-4A(1)	4	10	20000	1715	2000	2115	16QAM	1	49	4	10	2350	2150	20.11	20.17	0.06
4A-5A(0,1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	5	10	2525	881.5	20.14	20.15	0.01
4A-12A(0,1,2,3,4)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	12	10	5095	737.5	20.14	20.11	-0.03
4A-12A(5)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	12	5	5095	737.5	20.14	20.12	-0.02
4A-13A(0,1)	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	13	10	5230	751	20.14	20.16	0.02
4A-17A	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	17	10	5790	740	20.14	20.15	0.01
5A-41A(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	5	10	2525	881.5	22.83	22.85	0.02
5A-41A(PC2)	41	20	40185	2549.5	40185	2549.5	QPSK	100	0	5	10	2525	881.5	22.96	22.86	-0.1
12A-66A(0,3)	66	10	132022	1715	66486	2115	16QAM	1	0	12	10	5095	737.5	20.14	20.11	-0.03
12A-66A(1,2,4)	66	20	132072	1720	66536	2120	16QAM	1	0	12	10	5095	737.5	20.15	20.09	-0.06
12A-66A(5)	66	10	132022	1715	66486	2115	16QAM	1	0	12	5	5095	737.5	20.14	20.12	-0.02
41A-41A(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	41490	2680	22.89	22.85	-0.04
41A-41A(PC2)	41	20	40185	2549.5	40185	2549.5	16QAM	1	0	41	20	41490	2680	22.88	22.9	0.02
41C(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	22.89	22.84	-0.05
41C(PC2)	41	20	40185	2549.5	40185	2549.5	16QAM	1	0	41	20	40383	2569.3	22.88	22.89	0.01
66A-66A	66	20	132072	1720	66536	2120	16QAM	1	0	66	20	67036	2170	20.15	20.15	0
66B	66	10	132022	1715	66486	2115	16QAM	1	0	66	10	66585	2124.9	20.14	20.11	-0.03
66C	66	20	132072	1720	66536	2120	16QAM	1	0	66	20	66734	2139.8	20.15	20.09	-0.06

### LTE Downlink 3CA Grip Sensor Reduction Conducted Power

Combination	PCC									SCC				SCC				Tx Power		Deviation (2)-(1)
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	
2A-4A-5A	2	5	18900	1880	900	1960	16QAM	1	12	4	20	2175	2132.5	5	10	2525	881.5	20.02	19.97	-0.05
2A-4A-5A	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	2	20	900	1960	5	10	2525	881.5	20.14	20	-0.14
2A-4A-13A	2	5	18900	1880	900	1960	16QAM	1	12	4	20	2175	2132.5	13	10	5230	751	20.02	19.99	-0.03
2A-4A-13A	4	10	20175	1732.5	2175	2132.5	16QAM	1	49	2	20	900	1960	13	10	5230	751	20.14	20.06	-0.08
4A-4A-12A	4	10	20000	1715	2000	2115	16QAM	1	49	4	20	2300	2145	12	10	5095	737.5	20.11	20.03	-0.08
4A-4A-17A	4	10	20000	1715	2000	2115	16QAM	1	49	4	20	2300	2145	17	10	5790	740	20.11	20.07	-0.04
12A-66A-66A	66	20	132072	1720	66536	2120	16QAM	1	0	66	20	67036	2170	12	10	5095	737.5	20.15	20.03	-0.12
41A-41C(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	41292	2660.2	41	20	41490	2680	22.78	22.85	0.07
41A-41C(PC2)	41	20	40185	2549.5	40185	2549.5	16QAM	1	0	41	20	41292	2660.2	41	20	41490	2680	22.88	22.86	-0.02
41C-41A(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	41	20	41490	2680	22.78	22.86	0.08
41C-41A(PC2)	41	20	40185	2549.5	40185	2549.5	16QAM	1	0	41	20	40383	2569.3	41	20	41490	2680	22.88	22.87	-0.01
41D(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	41	20	40581	2589.1	22.78	22.89	0.11
41D(PC2)	41	20	40185	2549.5	40185	2549.5	16QAM	1	0	41	20	40383	2569.3	41	20	40581	2589.1	22.88	22.86	-0.02

### LTE Downlink 4CA Grip Sensor Reduction Conducted Power

Combination	PCC									SCC				SCC				SCC				Tx Power		Deviation (2)-(1)
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	
41C-41C(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	41	20	41292	2660.2	41	20	41490	2680	22.78	22.87	0.09
41C-41C(PC2)	41	20	40185	2549.5	40185	2549.5	16QAM	1	0	41	20	40383	2569.3	41	20	41292	2660.2	41	20	41490	2680	22.88	22.89	0.01
41A-41D(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	41094	2640.4	41	20	41292	2660.2	41	20	41490	2680	22.78	22.89	0.11
41A-41D(PC2)	41	20	40185	2549.5	40185	2549.5	16QAM	1	0	41	20	41094	2640.4	41	20	41292	2660.2	41	20	41490	2680	22.88	22.91	0.03
41D-41A(PC3)	41	20	40185	2549.5	40185	2549.5	QPSK	50	25	41	20	40383	2569.3	41	20	40581	2589.1	41	20	41490	2680	22.78	22.88	0.1
41D-41A(PC2)	41	20	40185	2549.5	40185	2549.5	16QAM	1	0	41	20	40383	2569.3	41	20	40581	2589.1	41	20	41490	2680	22.88	22.93	0.05