

Appendix I. – Down-link CA Power Measurement / 5G NR Call Box Setup

1. LTE Down-link Carrier Aggregation Conducted Powers

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers (CCs) supported by test 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.

Downlink Carrier aggregation:

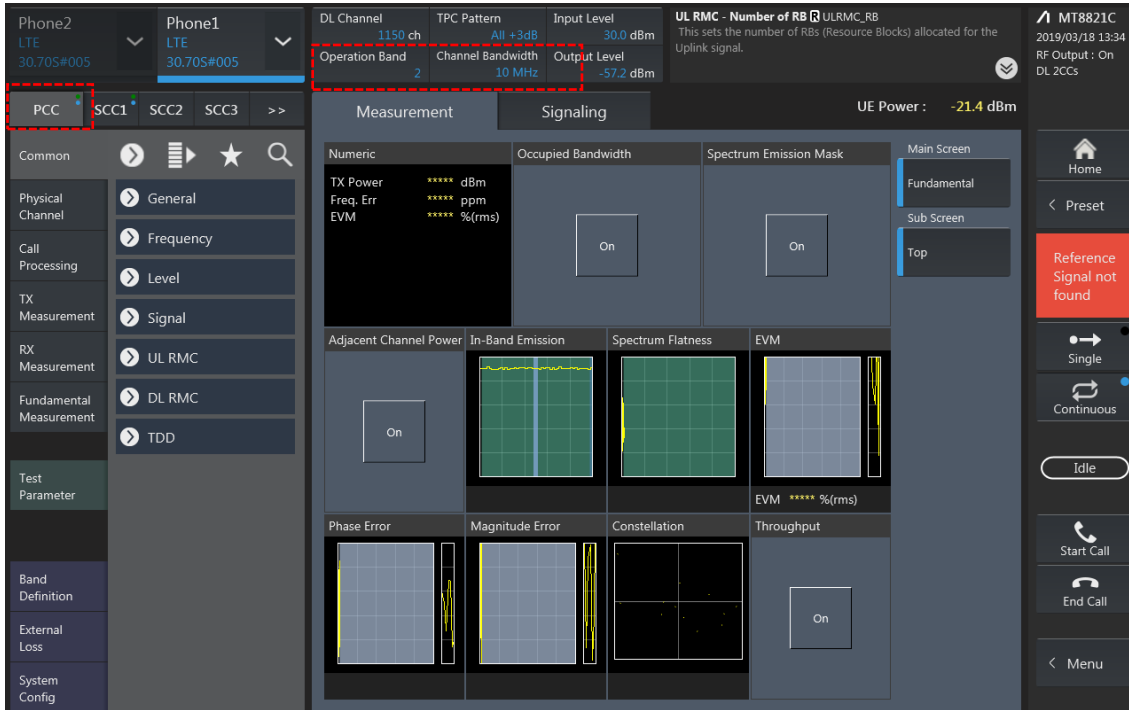
1. This device only supports downlink carrier aggregation. For every supported combination of downlink carrier aggregation, power measurements were performed with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation 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.



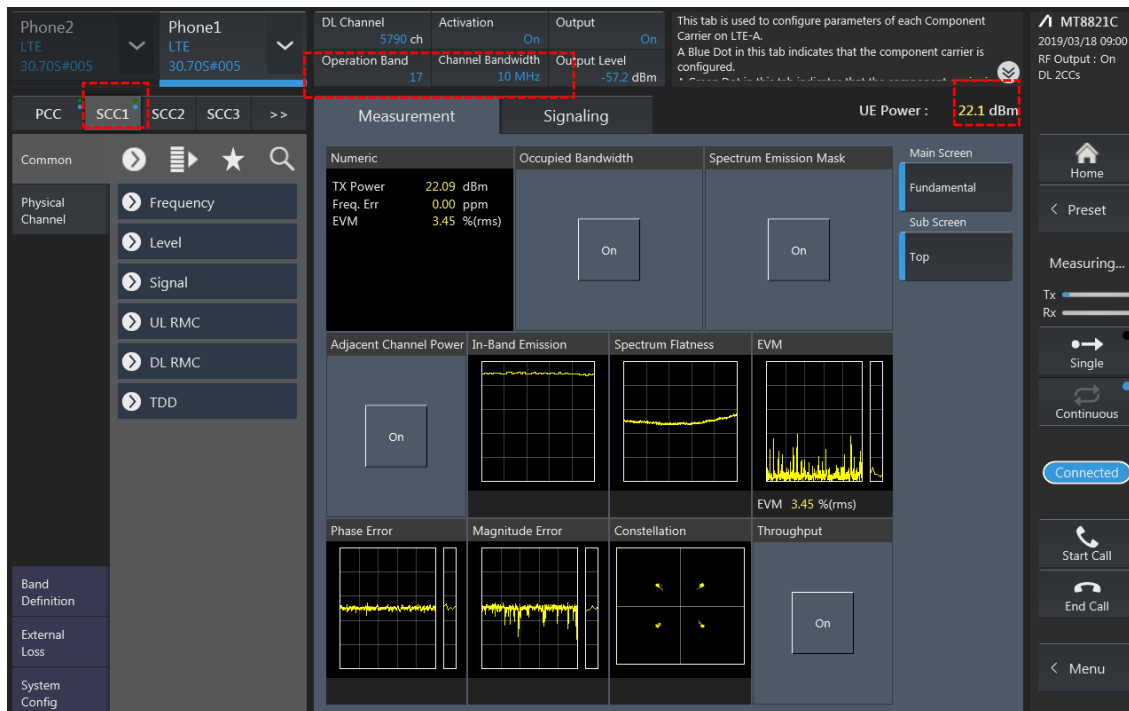
Power Measurement setup

LTE Down Link 2CA Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation



SCC Setting : Channel/ RB/ BW/ Modulation and call Connection

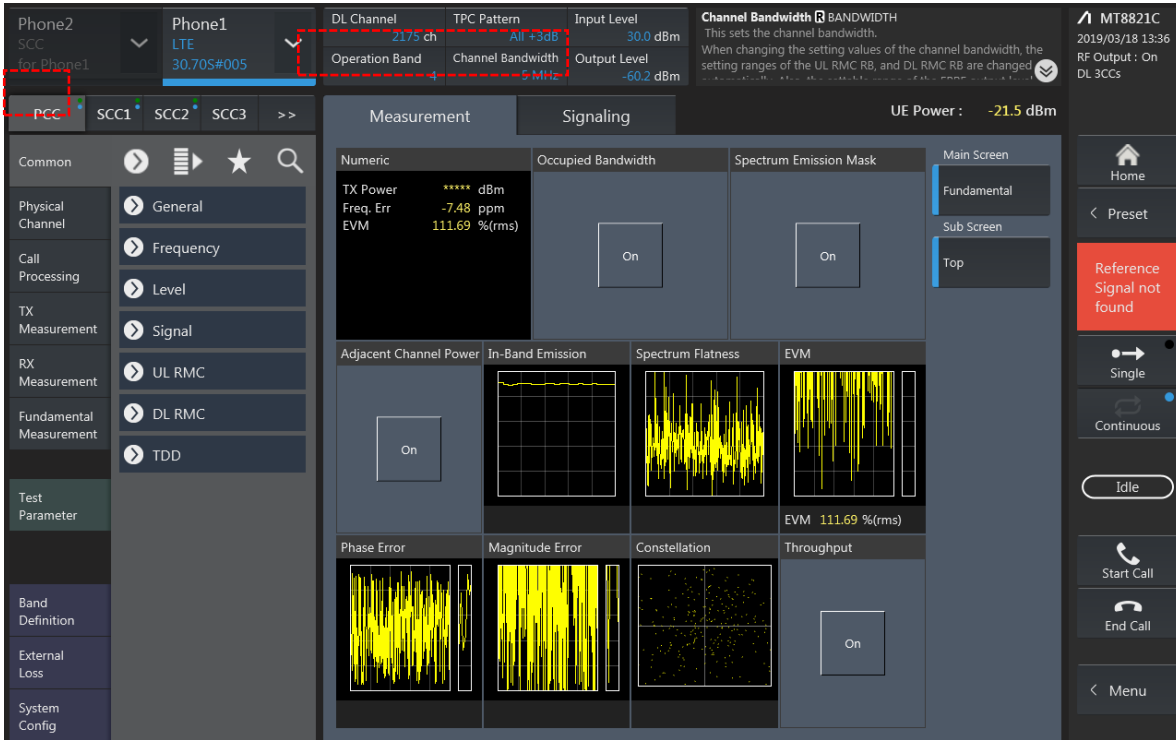


2CA Downlink Carrier aggregation Maximum conducted Powers

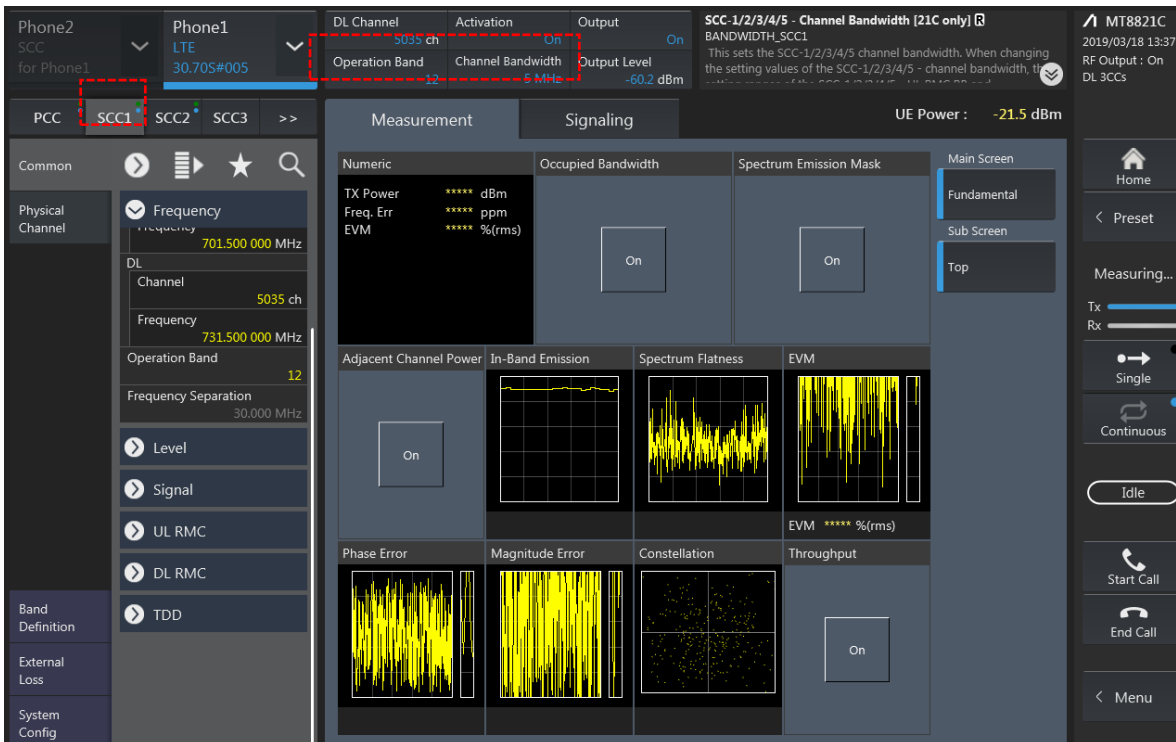
Combination	PCC									SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation(dB) (2)-(1)
5A-25A	5	5	20425	826.5	2425	871.5	QPSK	1	12	25	20	8365	1962.5	24.46	24.50	0.04
5A-25A	25	10	26090	1855	8090	1936	QPSK	1	24	5	10	2525	881.5	23.94	23.92	-0.02
5A-41A	5	5	20425	826.5	2425	871.5	QPSK	1	12	41	20	40620	2593	24.46	24.31	-0.15
5A-41A PC3	41	20	40620	2593	40620	2593	QPSK	1	0	5	10	2525	881.5	24.24	24.30	0.06
5A-41A PC2	41	20	40620	2593	40620	2593	QPSK	1	0	5	10	2525	881.5	25.74	25.72	-0.02
12A-25A	12	10	23095	707.5	5095	737.5	QPSK	1	24	25	20	8365	1962.5	24.37	24.39	0.02
12A-25A	25	10	26090	1855	8090	1936	QPSK	1	24	12	10	5095	737.5	23.94	23.87	-0.07
25A-25A(0)	25	10	26090	1855	8090	1936	QPSK	1	24	25	10	8640	1990	23.94	23.86	-0.08
25A-25A(1)	25	10	26090	1855	8090	1936	QPSK	1	24	25	20	8590	1985	23.94	23.86	-0.08
48B	48	10	56690	3695	56690	3695	QPSK	1	49	48	10	56591	3685.1	22.14	22.20	0.06

LTE Down Link 3CA Call Setup

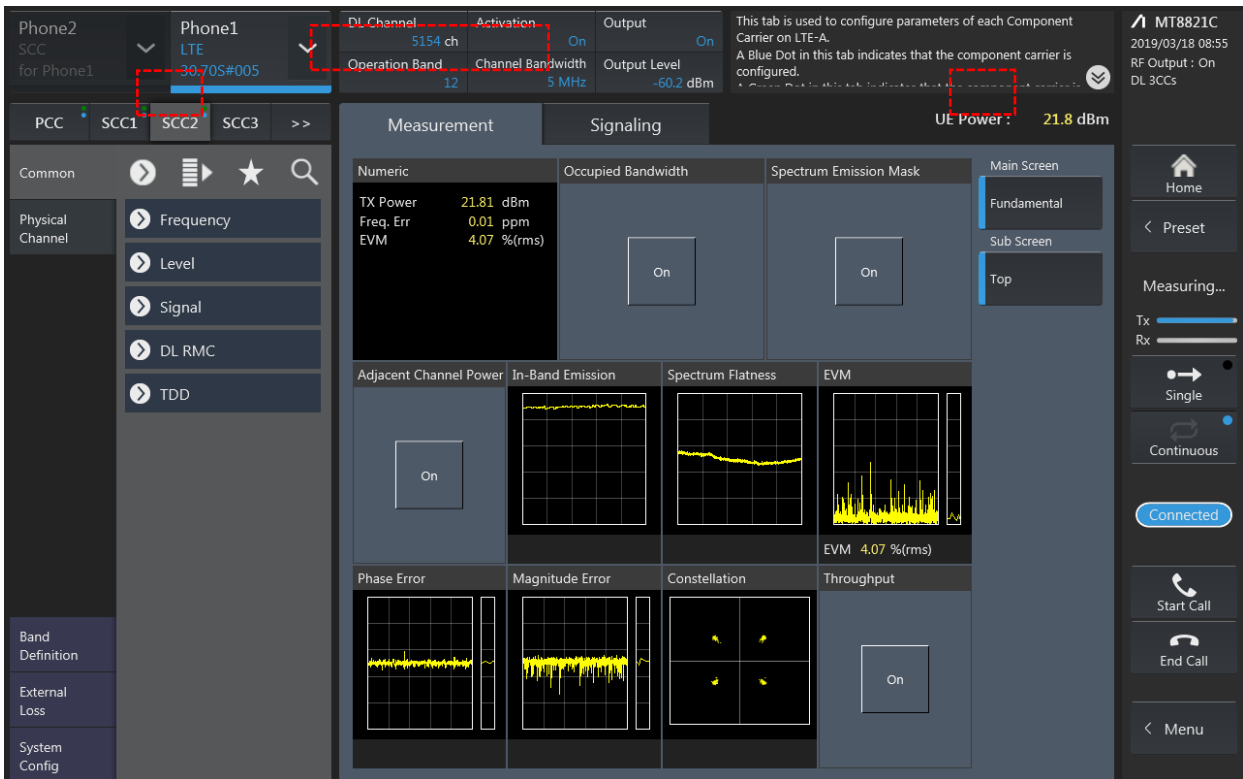
1) PCC Setting: Channel /RB/BW/Modulation



2) SCC1 Setting : Channel /RB/BW/Modulation



3) SCC2 Setting (Channel /RB/BW/Modulation)and call Connection

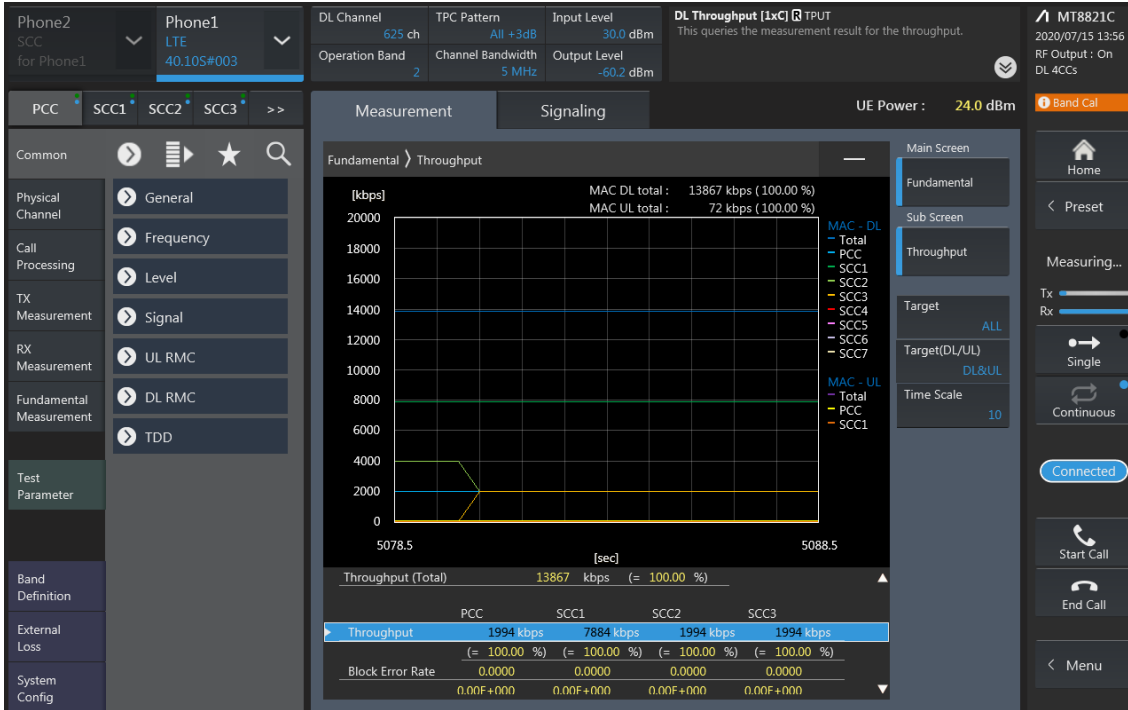


3CA Downlink Carrier aggregation Maximum conducted Powers

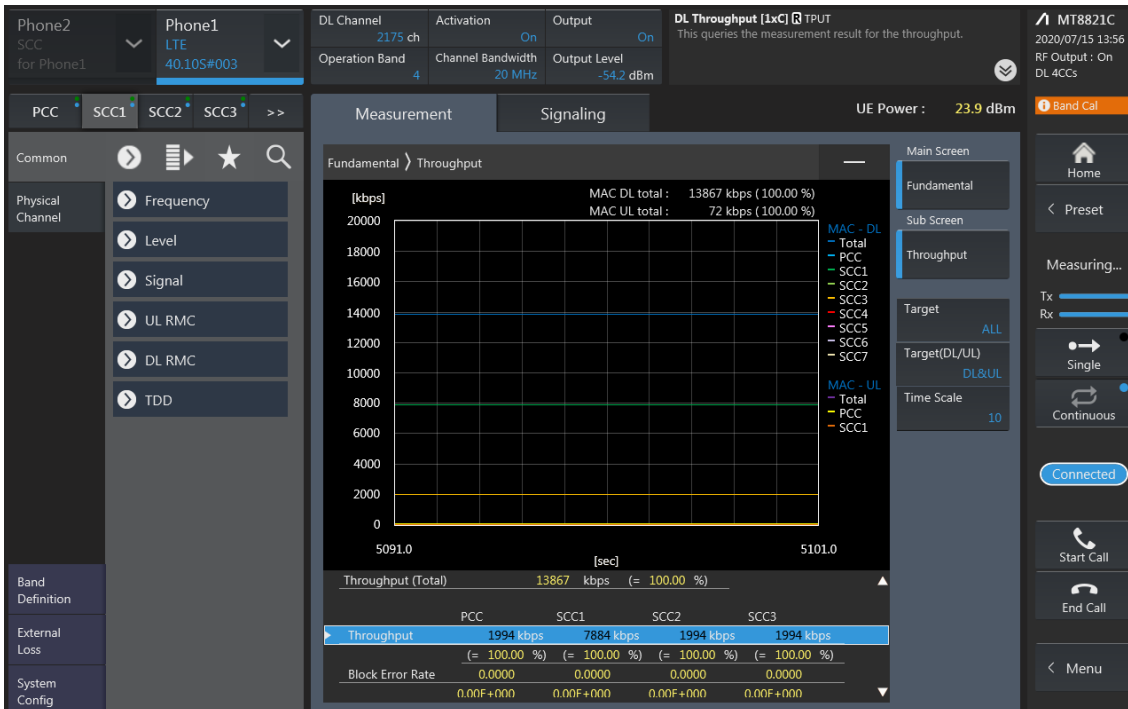
Combination	PCC									SCC				SCC		Tx Power		Devisiom(dB) (2)-(1)		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency		LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)
2A-4A-13A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	24.15	24.25	0.04
2A-4A-13A	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	13	10	5230	751	23.77	23.66	0.04
2A-4A-13A	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	23.98	24.05	0.03
4A-4A-13A	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	13	10	5230	751	23.77	23.79	0.06
4A-4A-13A	13	10	23230	782	5230	751	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	23.98	23.86	0.02
4A-4A-71A	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	71	20	68761	634.5	23.77	23.76	0.09
4A-4A-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	23.87	23.97	0.05
41A-41C(PC3)	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	41292	2660.2	41	20	41490	2680	24.24	24.21	-0.04
41A-41C(PC3)	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	40422	2573.2	41	20	41490	2680	24.24	24.18	-0.15
41A-41C(PC2)	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	41292	2660.2	41	20	41490	2680	25.74	25.59	0.05
41A-41C(PC2)	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	40422	2573.2	41	20	41490	2680	25.74	25.63	-0.02
41D(PC3)	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	40422	2573.2	41	20	40224	2553.4	24.24	24.17	-0.08
41D(PC2)	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	40422	2573.2	41	20	40224	2553.4	25.74	25.71	-0.14
48A-48A-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	48	20	55990	3625	48	20	56640	3690	23.87	23.77	-0.13
48C-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	48	20	55990	3625	48	20	56188	3644.8	23.87	23.92	-0.02

LTE Down Link 4CA Call Setup

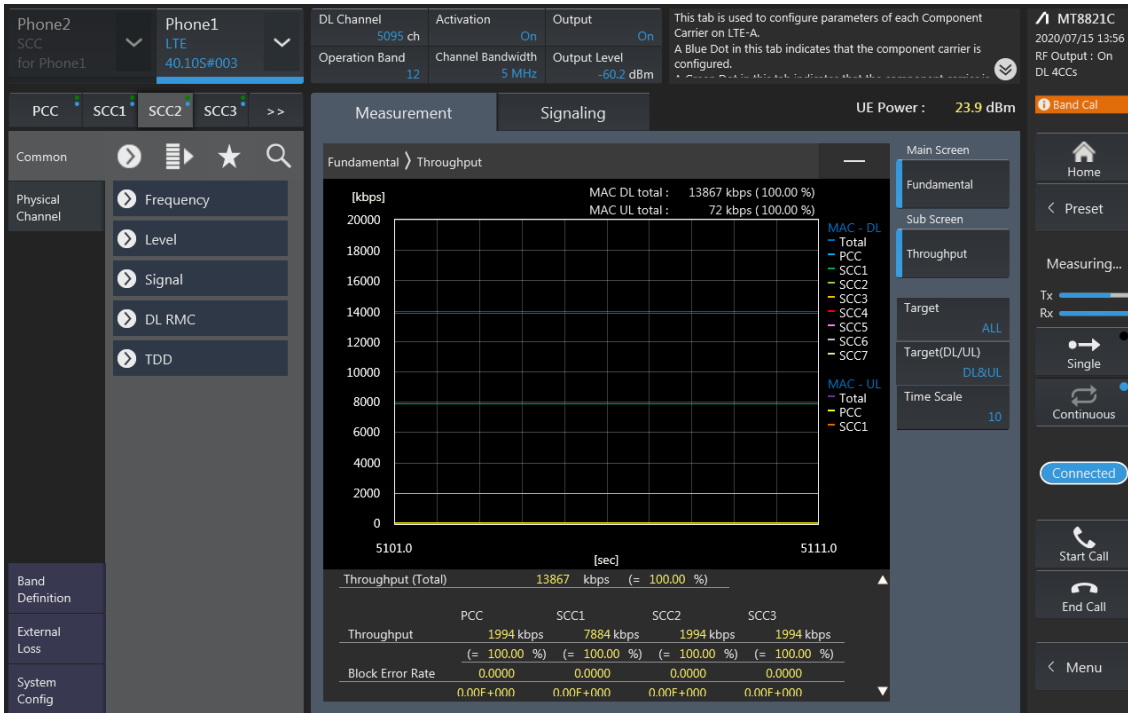
PCC Setting: Channel /RB/BW/Modulation



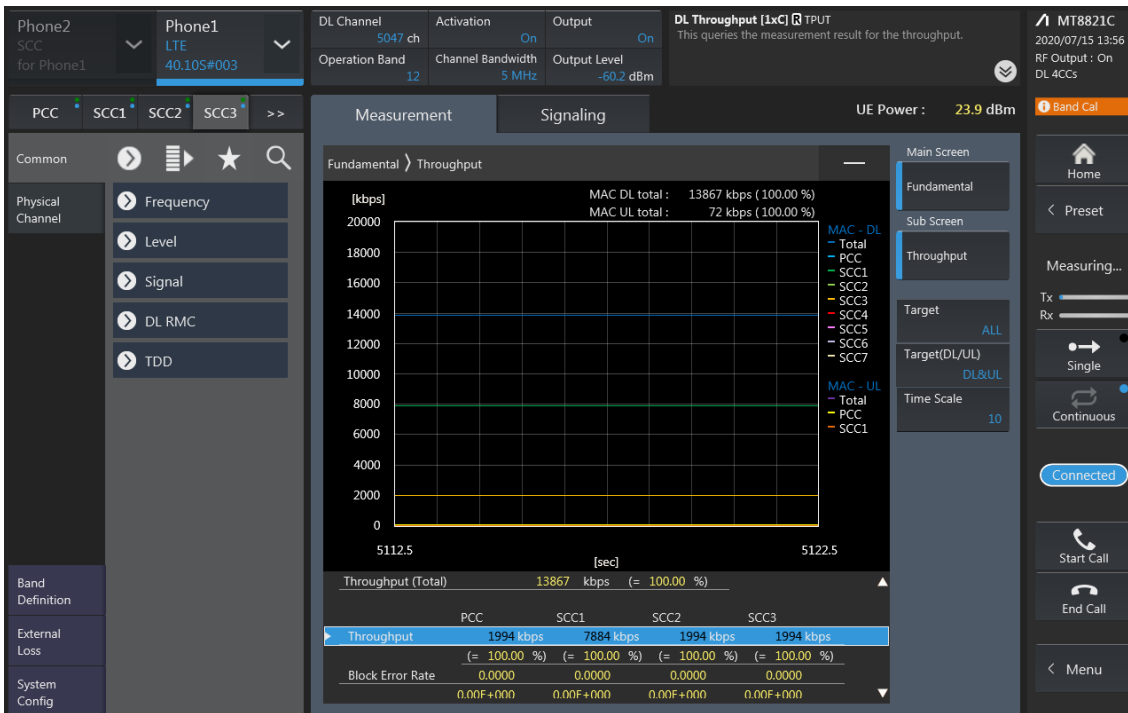
SCC1 Setting (Channel /RB/BW/Modulation)and call Connection



SCC2 Setting (Channel /RB/BW/Modulation)and call Connection



SCC3 Setting (Channel /RB/BW/Modulation)and call Connection

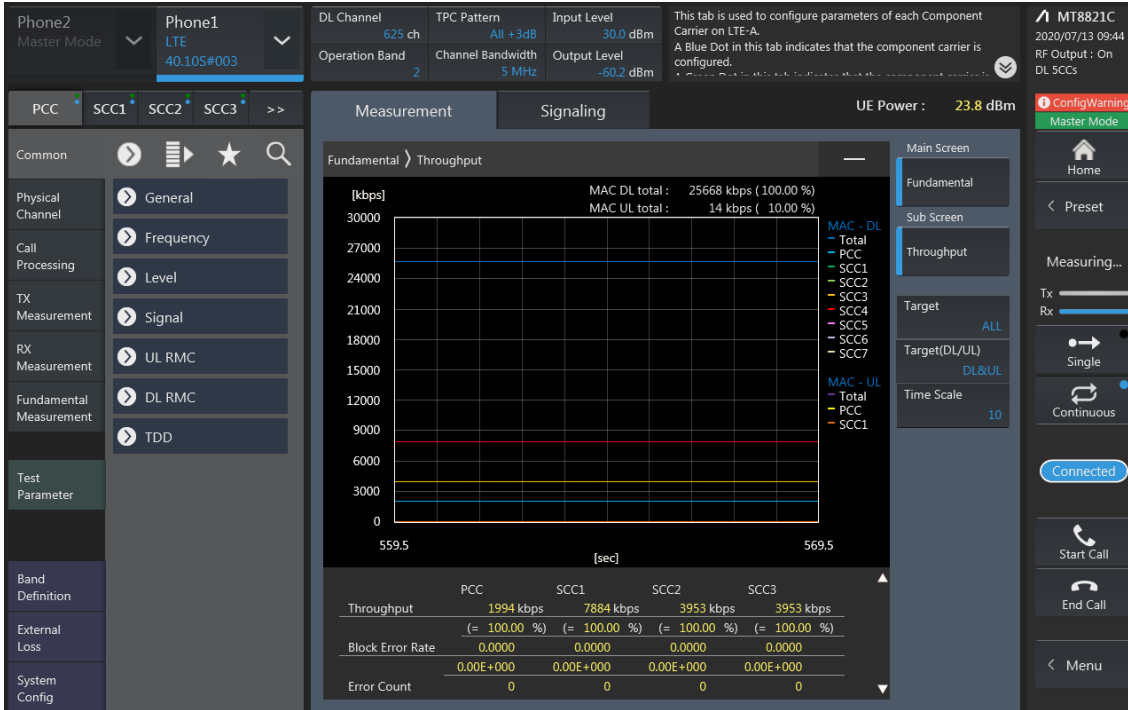


4CA Downlink Carrier aggregation Maximum conducted Powers

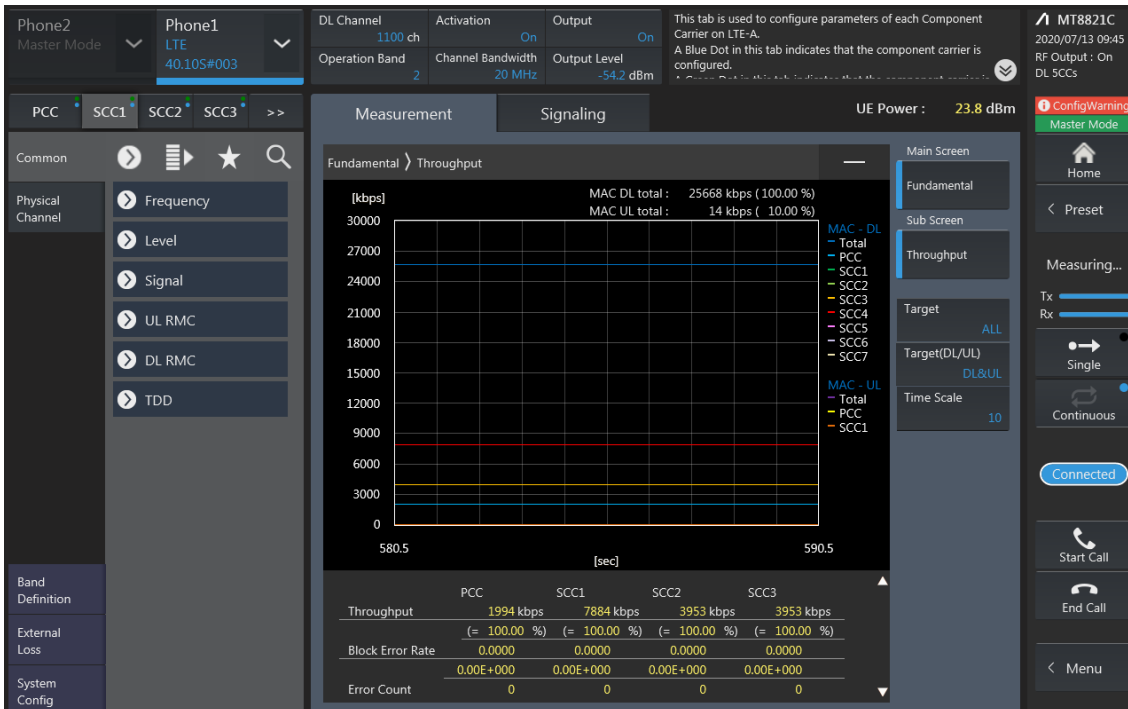
Combination	Band	BW	PCC						Modulation	RB	offset	SCC				SCC				SCC				Tx Power		Deviation(dB) (2-1)
			PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	SCC DL Channel	SCC DL Frequency				Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Simul. Carrier Tx Power (dBm) (1)	LTE Tx Power with 5x CA Enabled (dBm) (2)	
2A-2A-4A-4A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	4	20	2175	2132.5	4	10	2000	2115	24.15	24.23	0.08		
2A-2A-4A-4A	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	2	20	900	1960	2	20	1100	1980	23.77	23.69	-0.08		
2A-2A-4A-5A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	4	20	2175	2132.5	5	10	2525	881.5	24.15	24.03	-0.12		
2A-2A-4A-5A	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	23.77	23.75	-0.02		
2A-2A-4A-5A	5	5	20425	826.5	2425	871.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	4	20	2175	2132.5	24.46	24.32	-0.14		
2A-2A-4A-12A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	4	20	2175	2132.5	12	10	5095	737.5	24.15	24.10	-0.05		
2A-2A-4A-12A	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	23.77	23.87	0.10		
2A-2A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	4	20	2175	2132.5	24.37	24.34	-0.03		
2A-2A-4A-71A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	4	20	2175	2132.5	71	20	68761	634.5	24.15	24.10	-0.05		
2A-2A-4A-71A	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	2	20	1100	1980	71	20	68761	634.5	23.77	23.81	0.04		
2A-2A-4A-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	4	20	2175	2132.5	23.87	23.75	-0.12		
2A-2A-66A-71A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	66	20	66786	2145	71	20	68761	634.5	24.15	24.03	-0.12		
2A-2A-66A-71A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	71	20	68761	634.5	23.89	23.97	0.08		
2A-2A-66A-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	23.87	23.91	0.04		
2A-4A-4A-5A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	5	10	2525	881.5	24.15	24.02	-0.13		
2A-4A-4A-5A	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	2	20	900	1960	5	10	2525	881.5	23.77	23.87	0.10		
2A-4A-4A-5A	5	5	20425	826.5	2425	871.5	QPSK	1	12	2	20	900	1960	4	10	2000	2115	4	10	2000	2115	24.46	24.48	0.02		
2A-4A-4A-12A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	12	10	5095	737.5	24.15	24.10	-0.05		
2A-4A-4A-12A	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	2	20	900	1960	12	10	5095	737.5	23.77	23.73	-0.04		
2A-4A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	4	10	2000	2115	24	10	2000	2115	24.37	24.38	0.01		
2A-4A-12B	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	12	5	5047	732.7	12	5	5047	732.7	24.15	24.07	-0.08		
2A-4A-12B	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	12	5	5095	737.5	12	5	5047	732.7	23.77	23.74	-0.03		
2A-4A-12B	12	5	23095	707.5	5095	737.5	QPSK	1	12	12	5	5047	732.7	2	20	900	1960	4	20	2175	2132.5	24.07	23.93	-0.14		
2A-12A-66C	2	20	19100	1900	1100	1980	QPSK	1	0	12	10	5095	737.5	66	20	66786	2145	66	20	66984	2164.8	24.15	24.19	0.04		
2A-12A-66C	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	66	20	66786	2145	66	20	66984	2164.8	24.37	24.25	-0.12		
2A-12A-66C	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2165.8	2	20	900	1960	12	10	5095	737.5	23.89	23.94	0.05		
2A-13A-66C	2	20	19100	1900	1100	1980	QPSK	1	0	13	10	5230	751	66	20	66786	2145	66	20	66984	2164.8	24.15	24.21	0.06		
2A-13A-66C	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	66	20	66786	2145	66	20	66984	2164.8	23.98	23.87	-0.11		
2A-13A-66C	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2165.8	2	20	900	1960	13	10	5230	751	23.89	23.88	-0.01		
2A-66A-66A-71A	2	20	19100	1900	1100	1980	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	71	20	68761	634.5	24.15	24.24	0.09		
2A-66A-66A-71A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	71	20	68761	634.5	23.89	23.90	0.01		
2A-66A-66A-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	2	20	900	1960	66	20	66786	2145	66	20	67236	2190	23.87	23.87	0.00		
2C-66A-66A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	902	1962	66	20	66786	2145	66	20	67236	2190	24.15	24.07	-0.08		
2C-66A-66A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1098	1979.8	23.89	23.93	0.04		
2A-66C-71A	2	20	19100	1900	1100	1980	QPSK	1	0	66	20	66786	2145	66	20	66984	2164.8	71	20	68761	634.5	24.15	24.20	0.05		
2A-66C-71A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2165.8	2	20	900	1960	71	20	68761	634.5	23.89	23.81	-0.08		
2A-66C-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	2	20	900	1960	66	20	66786	2145	66	20	66984	2164.8	23.87	23.86	-0.01		
4A-4A-12B	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	12	5	5095	737.5	12	5	5047	732.7	23.77	23.66	-0.11		
4A-4A-12B	12	5	23095	707.5	5095	737.5	QPSK	1	12	12	5	5047	732.7	4	20	2175	2132.5	4	10	2000	2115	24.07	24.09	0.02		
13A-48A-66C	13	10	23230	782	5230	751	QPSK	1	0	46	20	55990	3625	66	20	66786	2145	66	20	66984	2164.8	23.98	23.99	0.01		
13A-48A-66C	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2165.8	13	10	5230	751	46	20	55990	3625	23.89	23.89	0.00		
25A-41D	25	10	26290	1855	8090	1936	QPSK	1	24	41	20	40620	2573.2	41	20	40422	2573.2	41	20	40224	2553.4	22.94	23.87	-0.07		
29A-30A-66A-66A	30	5	27685	2307.5	9795	2362.5	QPSK	1	24	29	10	9715	722.5	66	20	66786	2145	66	20	67236	2190	22.4	22.34	-0.06		
29A-30A-66A-66A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	29	10	9715	722.5	30	10	9820	2355	23.89	23.82	-0.07		
48A-48A-66A-66A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	48	20	55990	3625	48	20	56640	3690	23.89	23.81	-0.08		
48C-66C	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2165.8	48	20	55990	3625	48	20	56188	3644.8	23.89	23.90	0.01		

LTE Down Link 5CA Call Setup

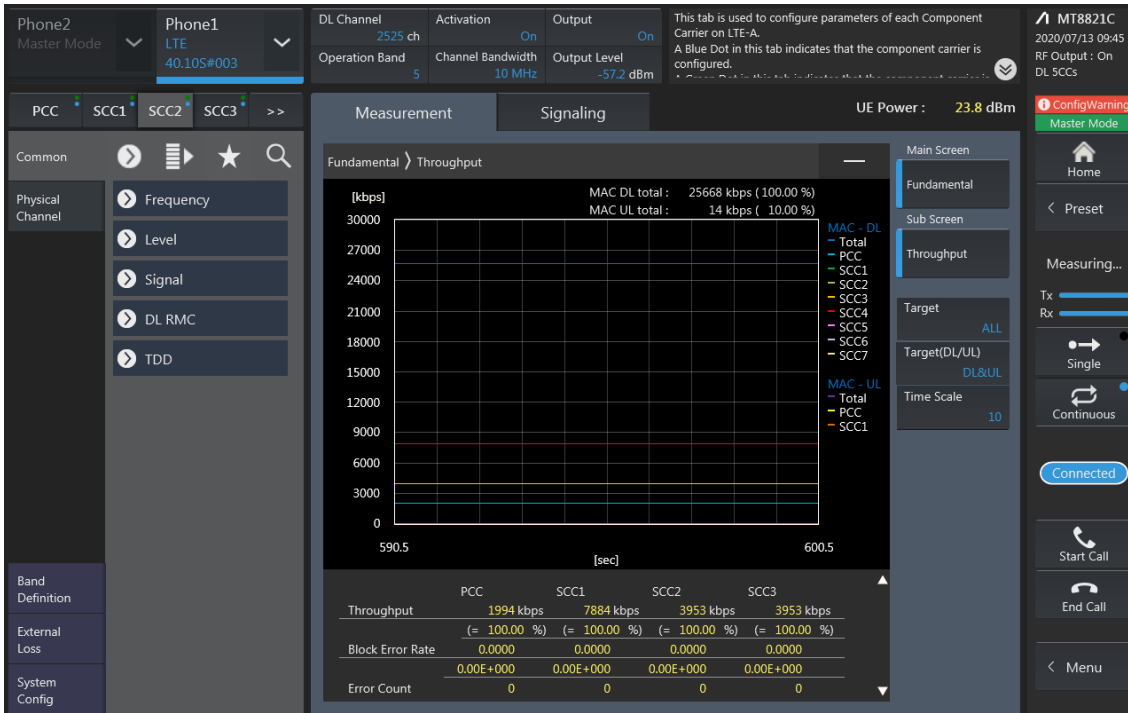
PCC Setting: Channel /RB/BW/Modulation



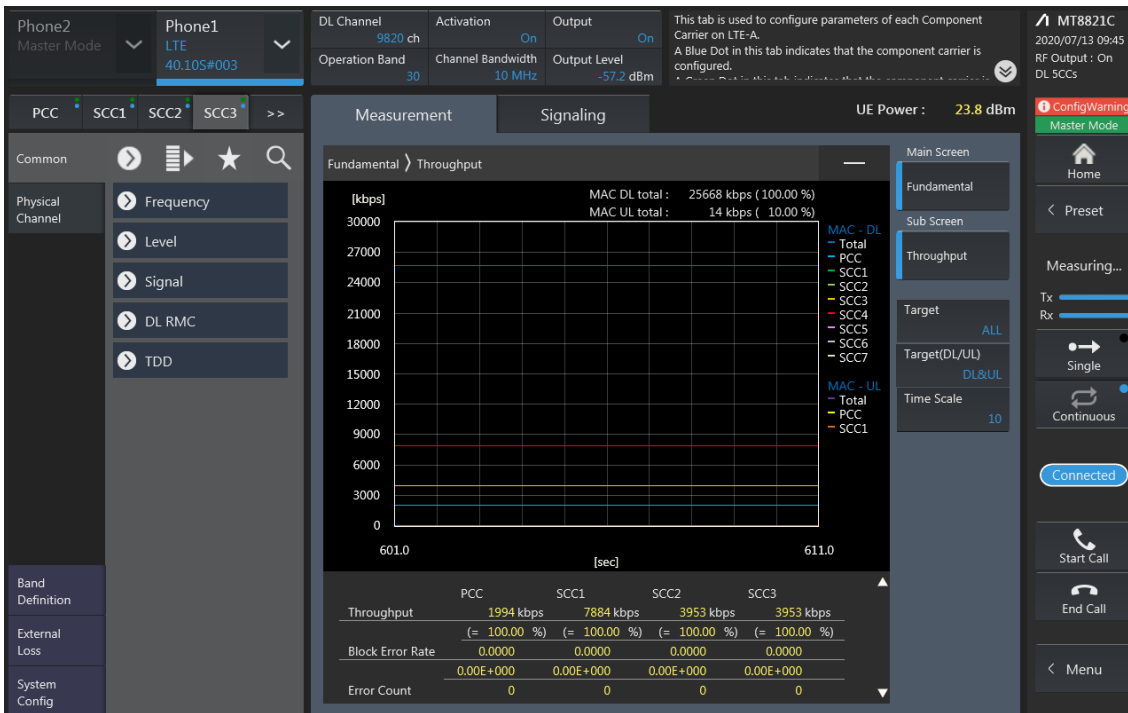
SCC1 Setting (Channel /RB/BW/Modulation)and call Connection



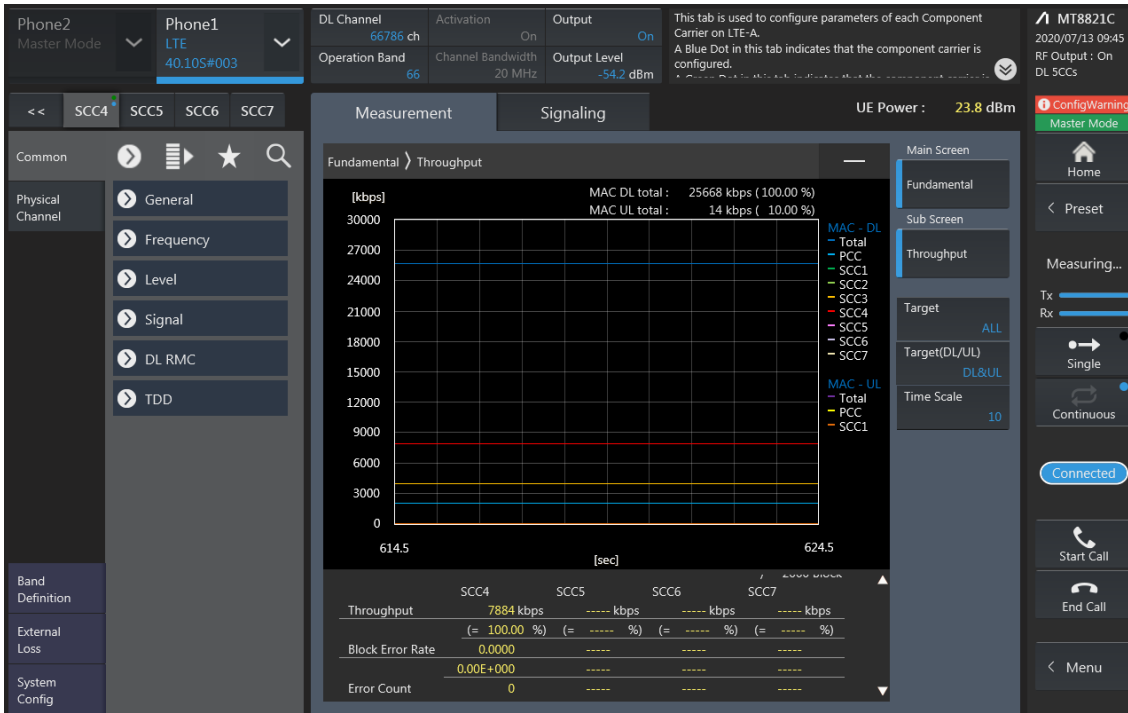
SCC2 Setting (Channel /RB/BW/Modulation)and call Connection



SCC3 Setting (Channel /RB/BW/Modulation)and call Connection



SCC4 Setting (Channel /RB/BW/Modulation)and call Connection

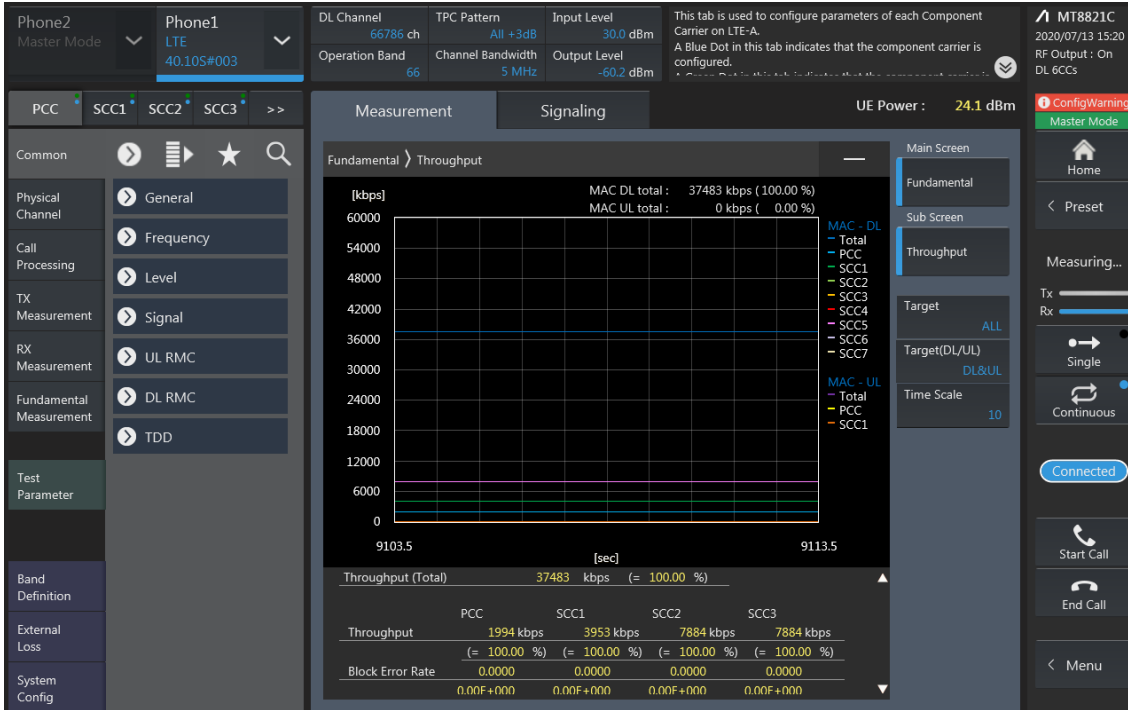


5CA Downlink Carrier aggregation Maximum conducted Powers

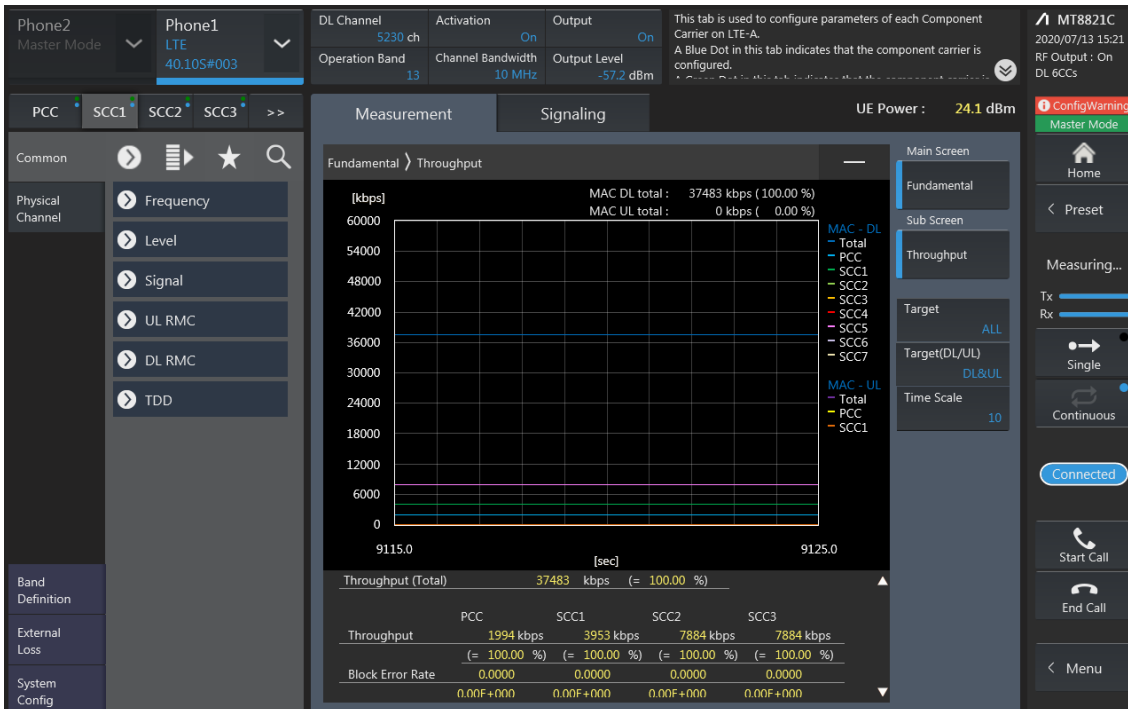
Combination	Band	BW	PCC				SCC				SCC				SCC				Tx Power									
			PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	UE Max. Tx Power (dBm)	UE Max. Tx Power (dBm)	UE Max. Tx Power (dBm)	UE Max. Tx Power (dBm)			
2A-2A-3A-3A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	5	10	2525	881.5	30	10	9820	2355	66	20	66786	2145	2415	2414	-0.01
2A-2A-3A-3A-6A	5	5	20425	826.5	2425	8715	QPSK	1	12	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	2446	2438	-0.08
2A-2A-3A-3A-6A	30	5	27885	2307.5	9795	2362.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	5	10	9820	2355	66	20	66786	2145	2240	2238	-0.02
2A-2A-3A-3A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	5	10	9820	2355	66	20	66786	2145	2389	2374	-0.15
2A-2A-3A-3A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	5	10	2525	881.5	66	20	66786	2145	66	20	66786	2145	2415	2412	-0.03
2A-2A-3A-3A-6A	5	5	20425	826.5	2425	8715	QPSK	1	12	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	66786	2145	2446	2440	-0.06
2A-2A-3A-3A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	5	10	9820	2355	66	20	66786	2145	2389	2386	-0.03
2A-2A-5A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	5	10	2525	881.5	66	20	66786	2145	66	20	66984	2164.8	2415	2409	-0.06
2A-2A-5A-6A	5	5	20425	826.5	2425	8715	QPSK	1	12	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	66984	2164.8	2446	2446	0.00
2A-2A-5A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1100	1980	5	10	9820	2355	2389	2380	-0.09
2A-2A-12A-3A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	12	10	5095	737.5	30	10	9820	2355	66	20	66786	2145	2415	2407	-0.08
2A-2A-12A-3A-6A	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	2437	2440	0.03
2A-2A-12A-3A-6A	30	5	27885	2307.5	9795	2362.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	12	10	9820	2355	66	20	66786	2145	2240	2238	-0.04
2A-2A-12A-3A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	12	10	9820	2355	66	20	66786	2145	2389	2387	-0.02
2A-2A-12A-3A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	12	10	5095	737.5	66	20	66786	2145	66	20	66786	2145	2415	2403	-0.12
2A-2A-12A-3A-6A	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	66786	2145	2437	2435	-0.02
2A-2A-12A-3A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1100	1980	12	10	9820	2355	2389	2383	-0.06
2A-2A-12A-3A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	12	10	5095	737.5	12	5	5047	732.7	66	20	66786	2145	2415	2415	0.00
2A-2A-12A-3A-6A	12	10	23095	707.5	5095	737.5	QPSK	1	12	12	5	5047	732.7	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	2437	2438	0.01
2A-2A-12A-3A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	12	5	5047	732.7	66	20	66786	2145	2389	2385	-0.04
2A-2A-13A-6A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	13	10	5230	751	66	20	66786	2145	66	20	66786	2145	2415	2407	-0.08
2A-2A-13A-6A-6A	13	10	23230	762	5230	751	QPSK	1	0	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	66786	2145	2390	2390	0.00
2A-2A-13A-6A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1100	1980	13	10	9820	2355	2389	2393	0.04
2A-2A-14A-3A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	14	10	5330	763	30	10	9820	2355	66	20	66786	2145	2415	2411	-0.04
2A-2A-14A-3A-6A	14	10	23330	763	5330	763	QPSK	1	24	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	2408	2409	0.01
2A-2A-14A-3A-6A	30	5	27885	2307.5	9795	2362.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	14	10	9820	2355	66	20	66786	2145	2240	2231	-0.09
2A-2A-14A-3A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	14	10	9820	2355	66	20	66786	2145	2389	2377	-0.12
2A-2A-14A-3A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	14	10	5330	763	66	20	66786	2145	66	20	66786	2145	2415	2405	-0.10
2A-2A-14A-3A-6A	14	10	23330	763	5330	763	QPSK	1	24	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	66786	2145	2408	2406	-0.02
2A-2A-14A-3A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	14	10	9820	2355	66	20	66786	2145	2389	2381	-0.02
2A-2A-20A-3A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	29	10	9715	722.5	30	10	9820	2355	66	20	66786	2145	2415	2410	-0.05
2A-2A-20A-3A-6A	30	5	27885	2307.5	9795	2362.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	29	10	9715	722.5	66	20	66786	2145	2240	2227	-0.13
2A-2A-20A-3A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	29	10	9715	722.5	30	10	9820	2355	2389	2380	-0.09
2A-2A-20A-3A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	29	10	9715	722.5	66	20	66786	2145	66	20	66786	2145	2415	2407	-0.08
2A-2A-20A-3A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	29	10	9715	722.5	30	10	9820	2355	2389	2380	-0.09
2A-5A-3A-6A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	30	10	9820	2355	66	20	66786	2145	66	20	66786	2145	2415	2423	0.08
2A-5A-3A-6A-6A	5	5	20425	826.5	2425	8715	QPSK	1	12	2	20	900	1960	30	10	9820	2355	66	20	66786	2145	66	20	66786	2145	2446	2446	0.00
2A-5A-3A-6A-6A	30	5	27885	2307.5	9795	2362.5	QPSK	1	24	2	20	900	1960	5	10	2525	881.5	66	20	66786	2145	66	20	66786	2145	2240	2246	0.06
2A-5A-3A-6A-6A	66	5	13247	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	5	10	9820	2355	66	20	66786	2145	2389	2386	-0.03
2A-5A-4A-6A-6A	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	48	20	55900	3625	48	20	56188	3644.8	48	20	56386	3664.8	2415	2423	0.08
2A-5A-4A-6A-6A	5	5	20425	826.5	2425	8715	QPSK	1	12	2	20	900	1960	48	20	55900	3625	48	20	56188	3644.8	48	20	56386	3664.8	2446	2432	-0.14
2A-5A-4A-6A-6A	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	30	10	9820	2355	66	20	66786	2145	66	20	66786	2145	2415	2411	

LTE Down Link 6CA Call Setup

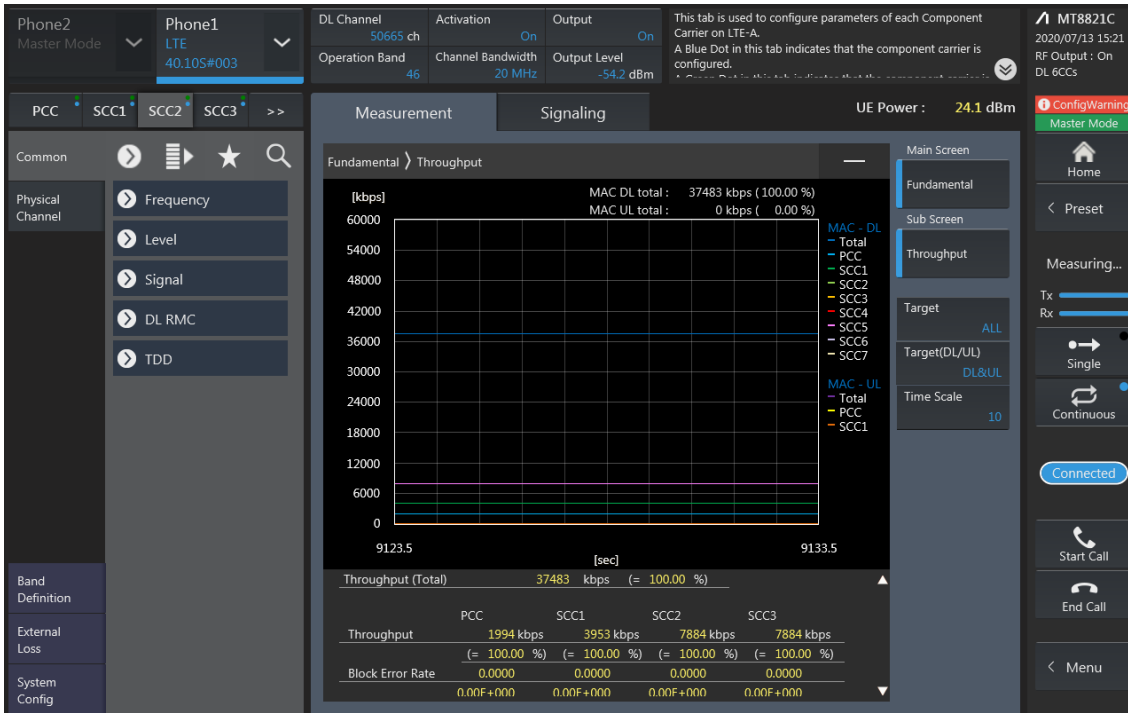
PCC Setting (Channel/ RB/ BW/ Modulation)



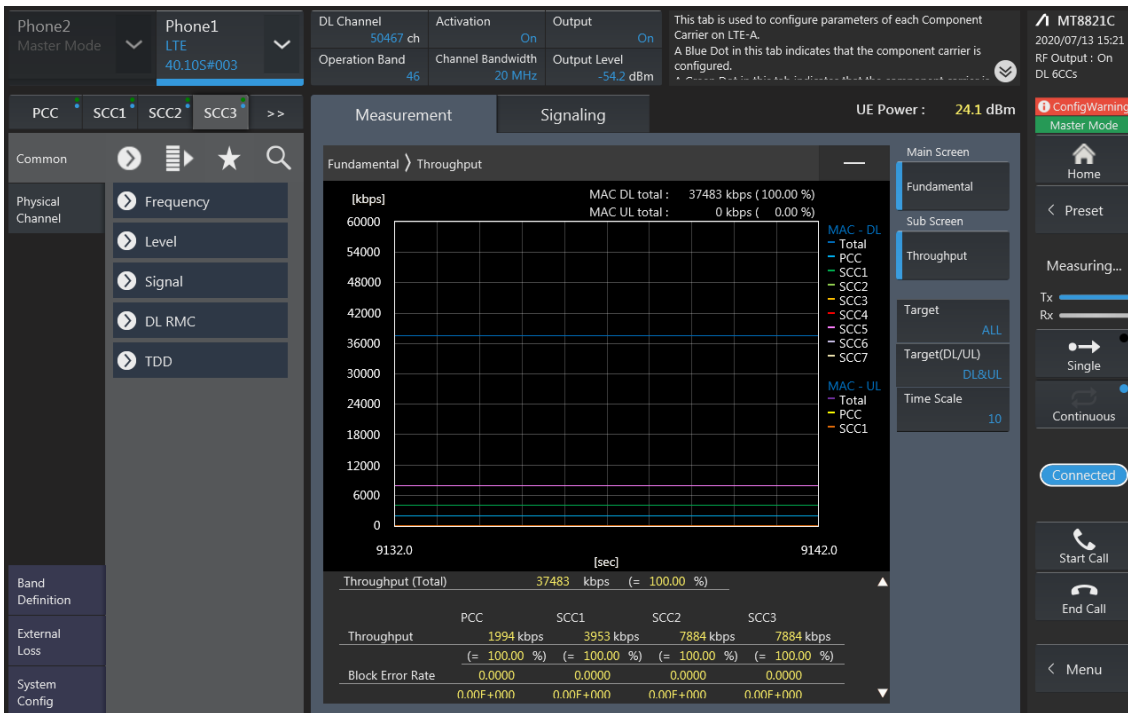
SCC1 Setting (Channel/ RB/ BW/ Modulation) and call Connection



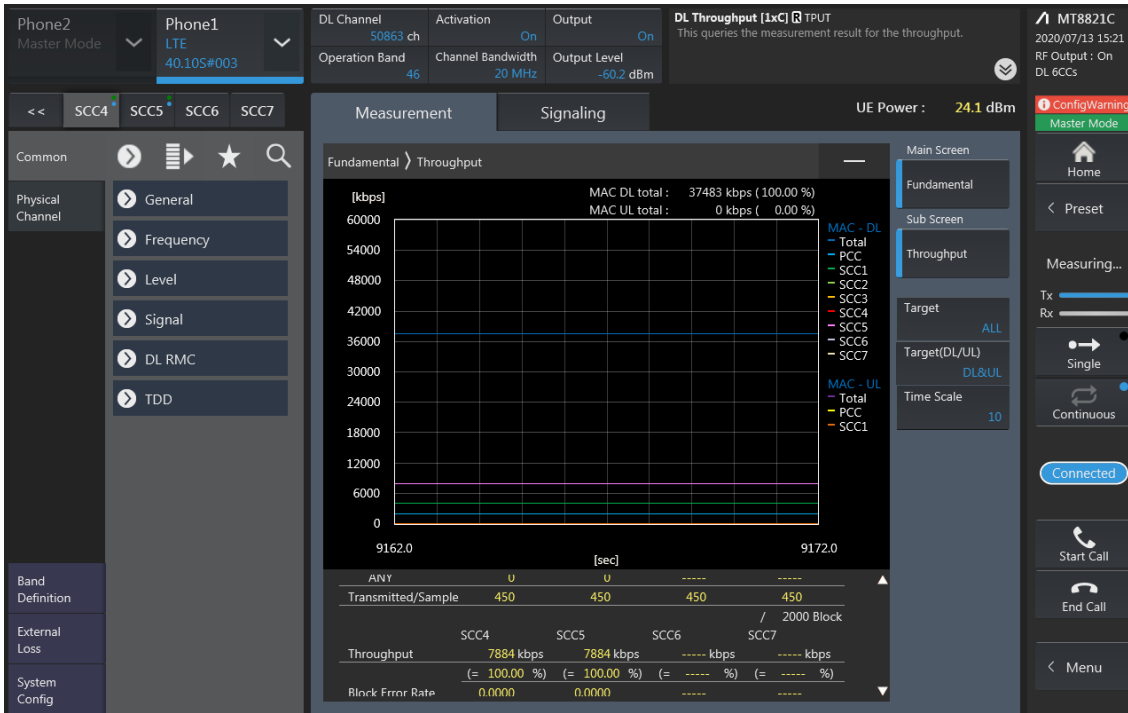
SCC2 Setting (Channel /RB/BW/Modulation) and call Connection



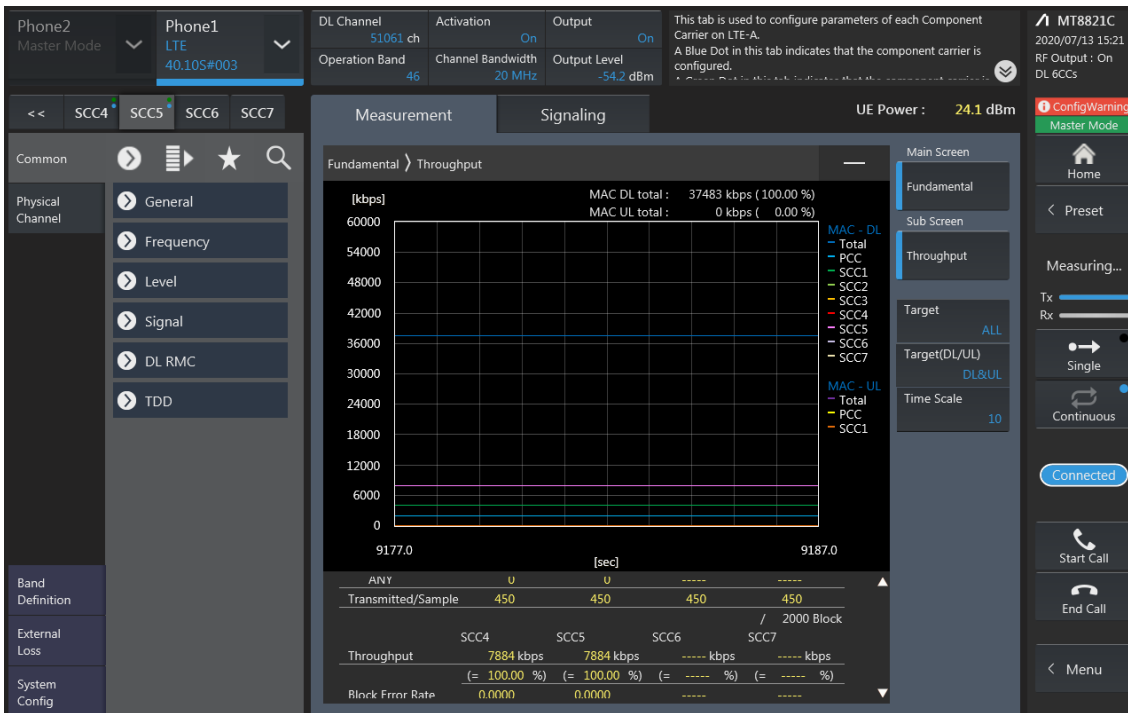
SCC3 Setting (Channel /RB/BW/Modulation) and call Connection



SCC4 Setting (Channel /RB/BW/Modulation) and call Connection



SCC5 Setting (Channel /RB/BW/Modulation) and call Connection

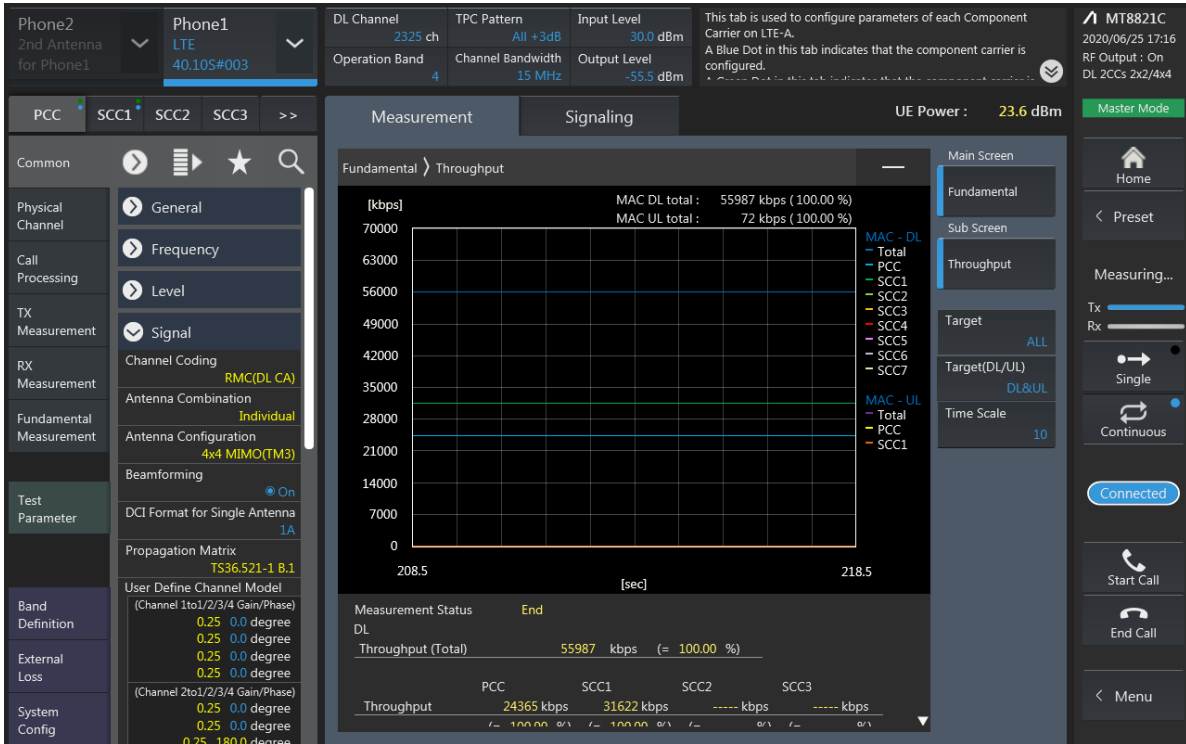


6CA Downlink Carrier aggregation conducted Powers

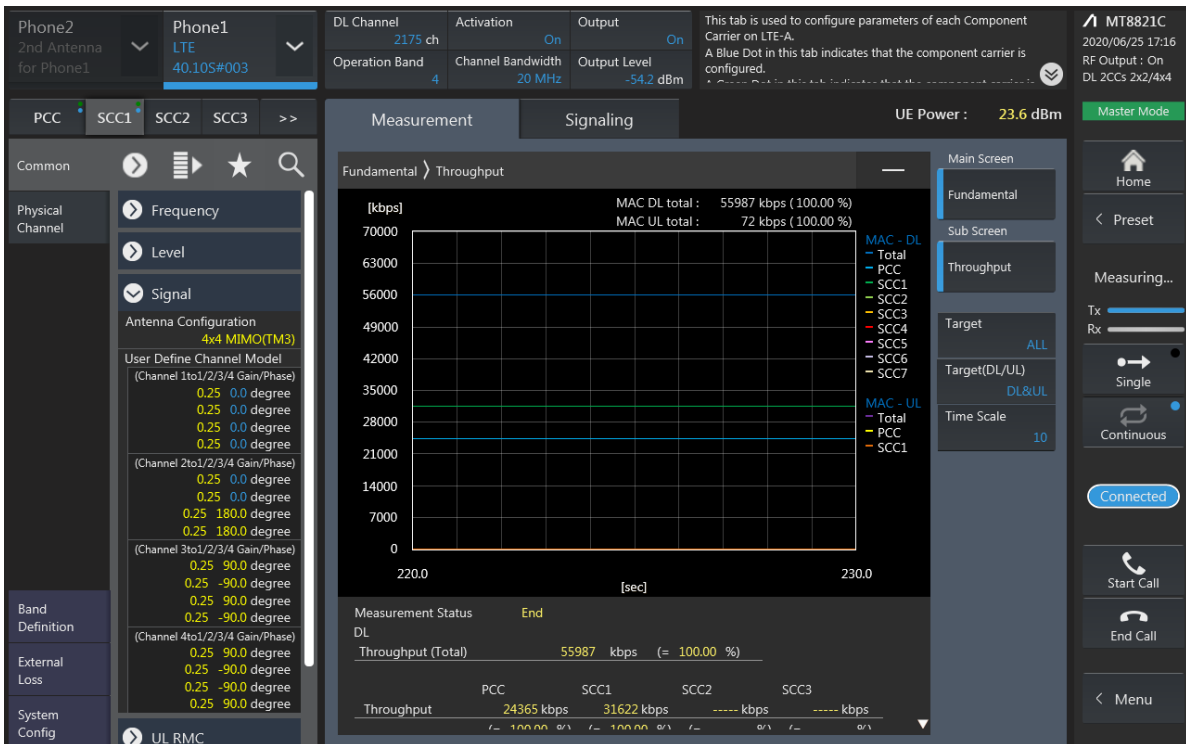
Combination	Band	BW	PCC				SCC				SCC				SCC				SCC				Tx Power		Deviation(dB) (%)							
			PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel		SCC DL Frequency	15.1.1.1 Carrier Power (dBm)	15.1.1.2 Max DL CRF (dBm/100MHz)				
2A-5A-8C-6E4-6E6A	2	20	19100	1900	11100	1980	QPSK	1	0	5	10	2525	881.5	48	20	55900	3625	48	20	56188	3644.8	66	20	66786	2145	66	20	67236	2190	24.15	24.19	0.04
2A-5A-8C-6E4-6E6A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1900	48	20	55900	3625	48	20	56188	3644.8	66	20	66786	2145	66	20	67236	2190	24.46	24.46	0.01
2A-5A-8C-6E4-6E6A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1900	2	20	1100	1080	48	20	55900	3625	48	20	56188	3644.8	23.89	23.90	0.01
2A-8E-6E6A	2	20	19100	1900	11100	1980	QPSK	1	0	48	20	55900	3625	48	20	56188	3644.8	48	20	56386	3664.8	48	20	56584	3684.8	66	20	66786	2145	24.15	24.19	0.04
2A-8E-6E6A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	2	20	900	1900	48	20	55900	3625	48	20	56188	3644.8	48	20	56386	3664.8	48	20	56584	3684.8	23.89	23.90	0.05
5A-8C-6E4-6E6A	5	5	20425	826.5	2425	871.5	QPSK	1	0	48	20	55900	3625	48	20	56188	3644.8	48	20	56386	3664.8	66	20	66786	2145	66	20	67236	2190	24.46	24.47	0.01
5A-8C-6E4-6E6A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	5	10	2525	881.5	48	20	55900	3625	48	20	56188	3644.8	48	20	56386	3664.8	23.89	23.95	0.06

LTE Down Link 2CA 4x4 MIMO Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation



SCC Setting : Channel/ RB/ BW/ Modulation and call Connection

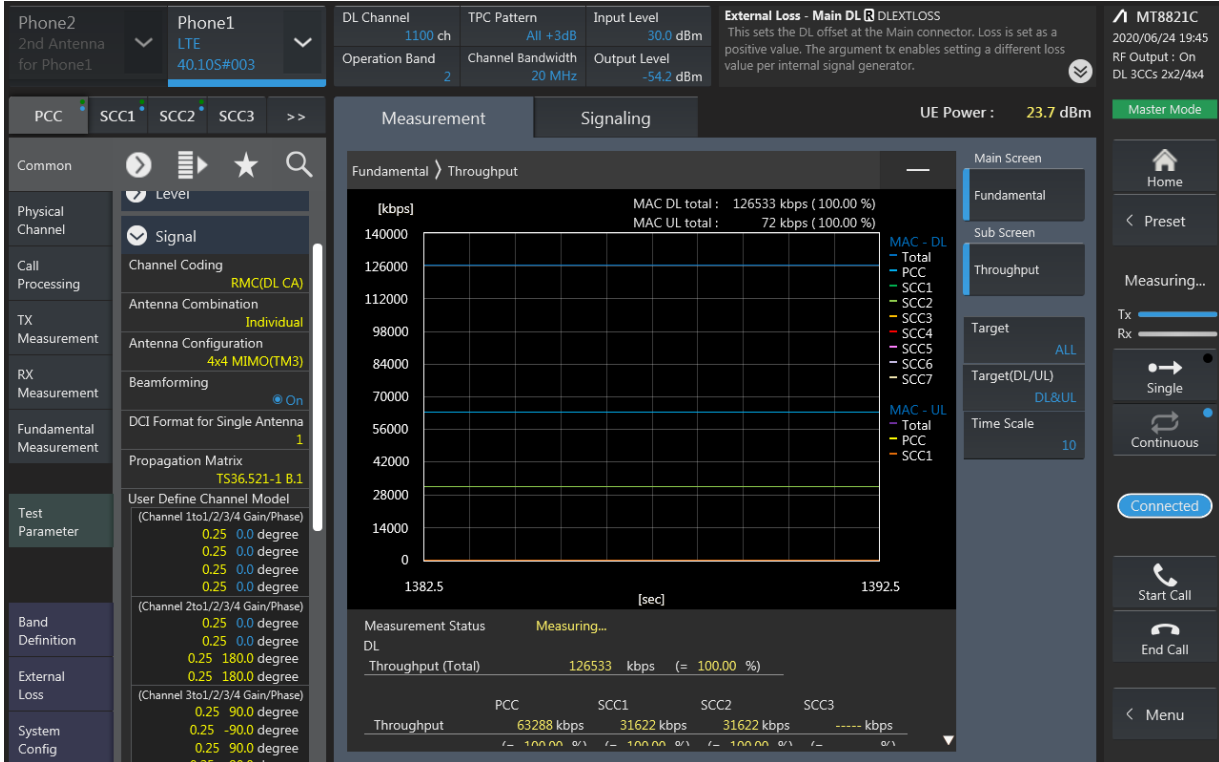


LTE Downlink 2CA 4X4 MIMO Maximum Conducted Power

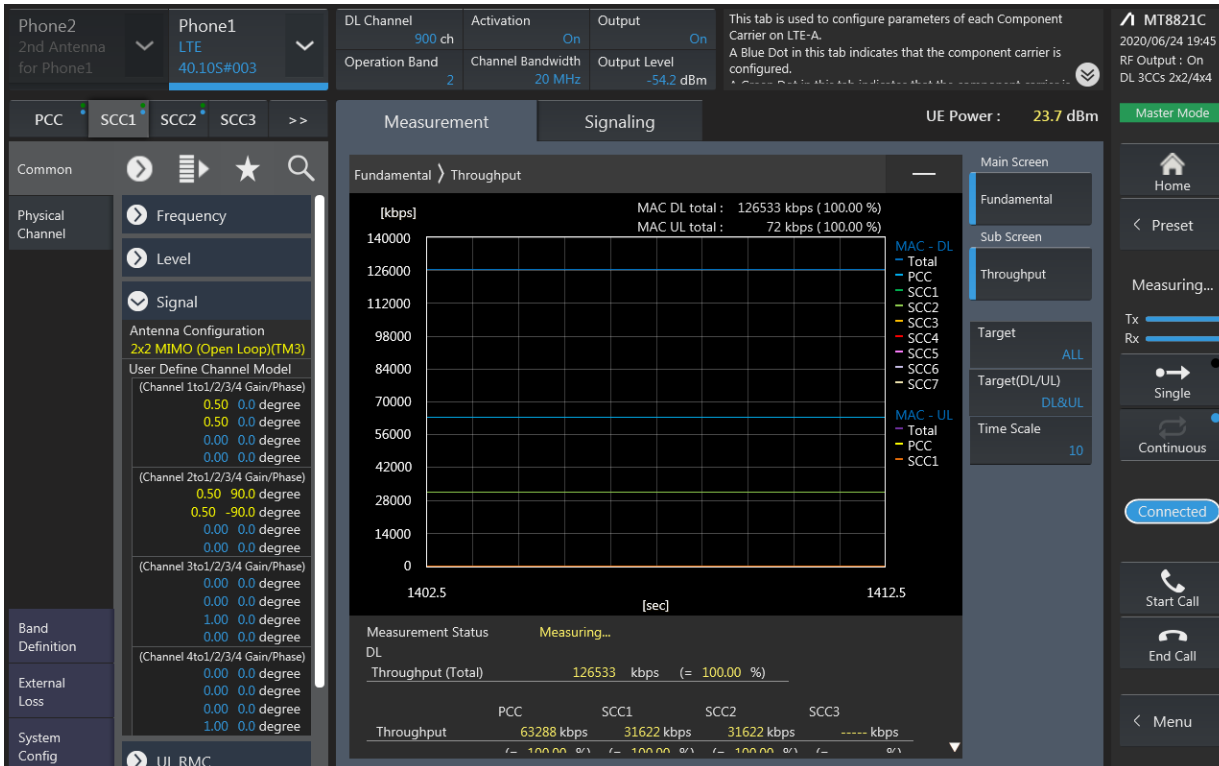
Combination	PCC									SCC				Tx Power		Deviation(dB) (2)-(1)
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	
5A-[25A]	5	5	20425	826.5	2425	871.5	QPSK	1	12	25	20	8365	1962.5	24.46	24.45	-0.01
5A-[25A]	25	10	26090	1855	8090	1936	QPSK	1	24	5	10	2525	881.5	23.94	23.92	-0.02
5A-[41A]	5	5	20425	826.5	2425	871.5	QPSK	1	12	41	20	40620	2593	24.46	24.40	-0.06
5A-[41A] PC3	41	20	40620	2593	40620	2593	QPSK	1	0	5	10	2525	881.5	24.24	24.18	-0.06
5A-[41A] PC2	41	20	40620	2593	40620	2593	QPSK	1	0	5	10	2525	881.5	25.74	25.69	-0.05
12A-[25A]	12	10	23095	707.5	5095	737.5	QPSK	1	24	25	20	8365	1962.5	24.37	24.30	-0.07
12A-[25A]	25	10	26090	1855	8090	1936	QPSK	1	24	12	10	5095	737.5	23.94	24.02	0.08
[25A]-[25A](0)	25	10	26090	1855	8090	1936	QPSK	1	24	25	10	8640	1990	23.94	23.88	-0.06
[25A]-[25A](1)	25	10	26090	1855	8090	1936	QPSK	1	24	25	20	8590	1985	23.94	23.97	0.03
[48B]	48	10	56690	3695	56690	3695	QPSK	1	49	48	10	56591	3685.1	22.14	22.21	0.07

LTE Down Link 3CA 4x4 MIMO Call Setup

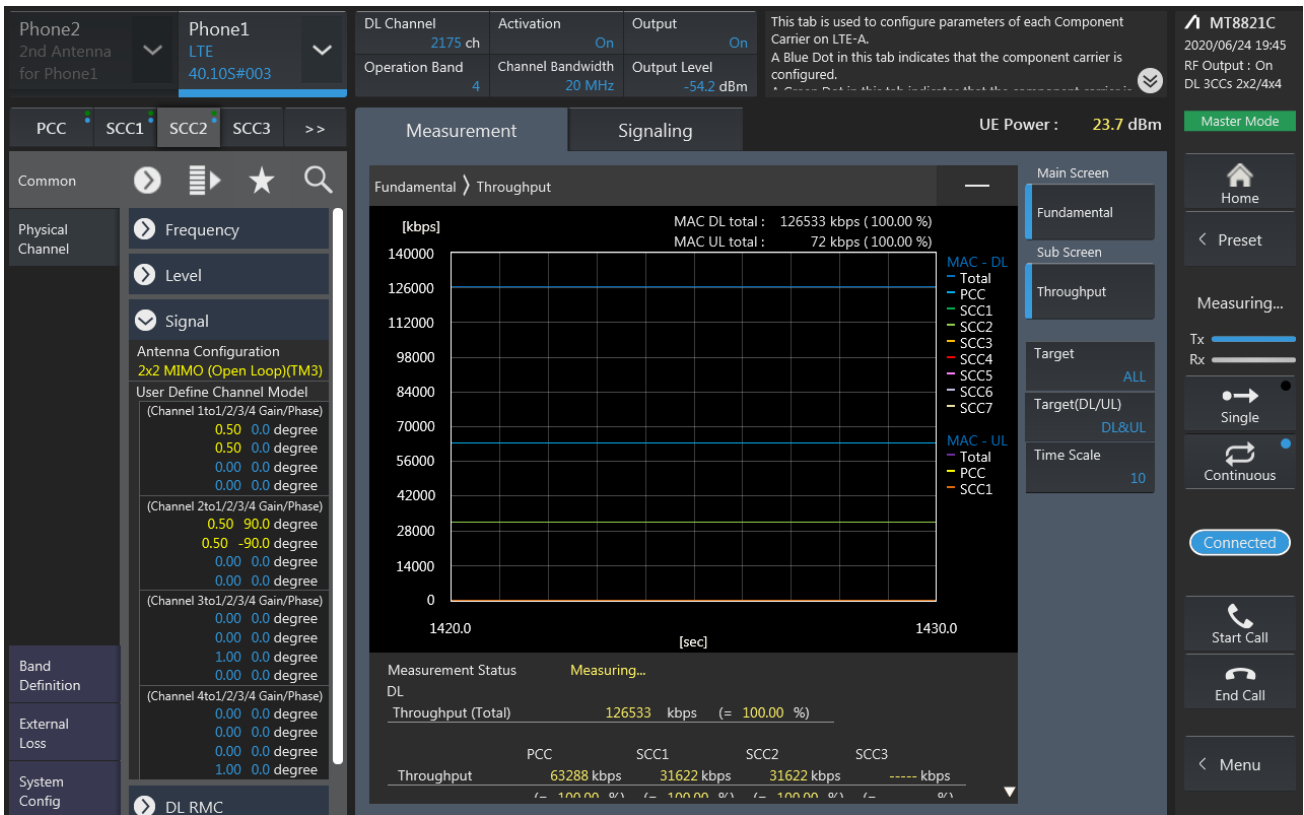
PCC Setting: Channel /RB/BW/Modulation



CC1 Setting : Channel /RB/BW/Modulation



SCC2 Setting (Channel /RB/BW/Modulation)and call Connection

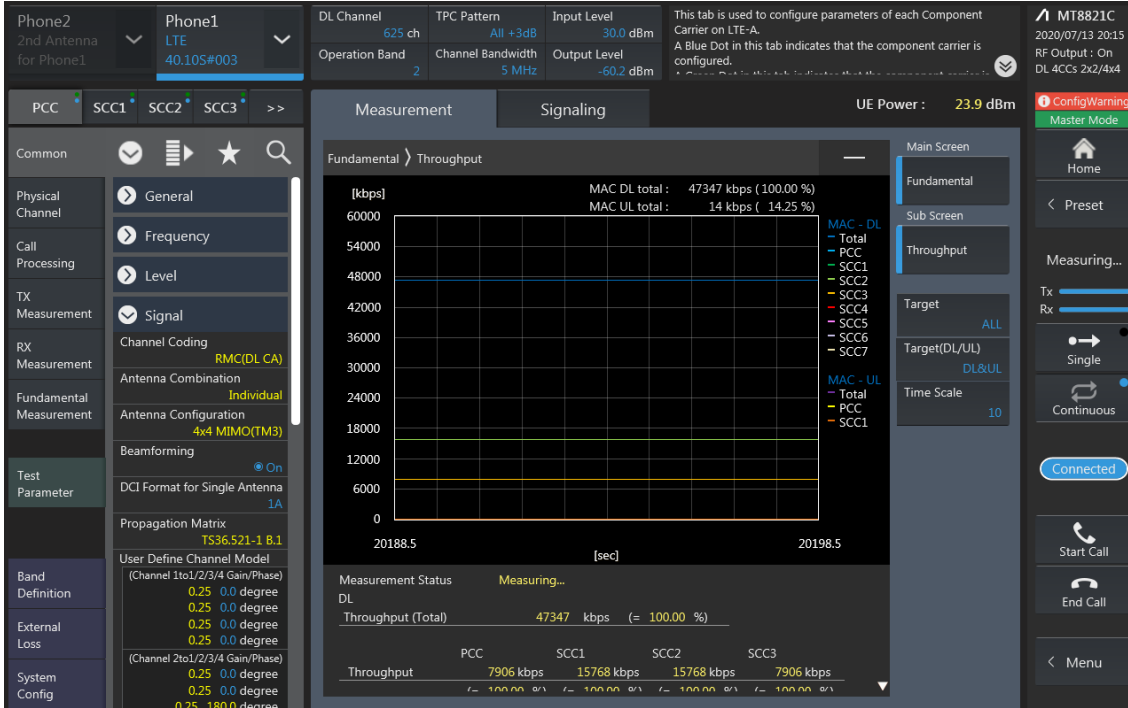


LTE Downlink 3CA 4X4 MIMO Maximum Conducted Power

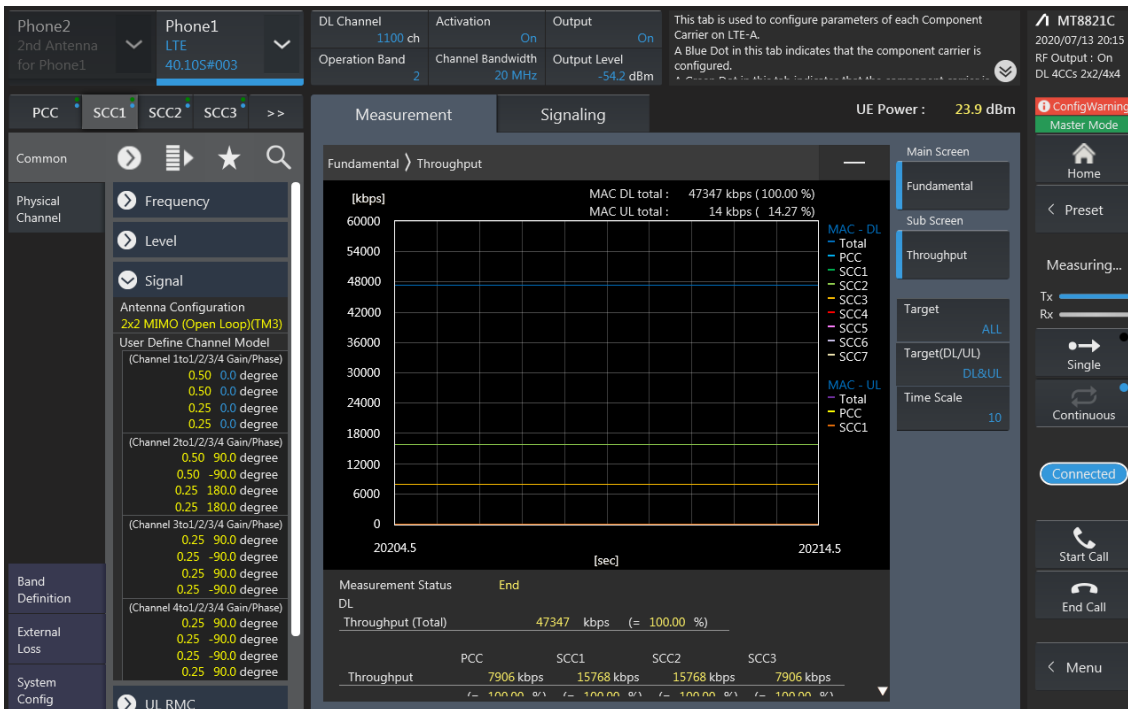
Combination	PCC									SCC				SCC		Tx Power				
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation (dB) (2)-(1)
[2A]-[4A]-13A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	24.15	24.19	0.04
[2A]-[4A]-13A	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	13	10	5230	751	23.77	23.81	0.04
[2A]-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	23.98	24.01	0.03
[4A]-[4A]-13A	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	13	10	5230	751	23.77	23.83	0.06
[4A]-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	23.98	24.00	0.02
[4A]-[4A]-71A	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	71	20	68761	634.5	23.77	23.86	0.09
[4A]-[4A]-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	23.87	23.92	0.05
[41A]-[41C]-[PC3]	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	41292	2660.2	41	20	41490	2680	24.24	24.20	-0.04
[41A]-[41C]-[PC3]	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	40422	2573.2	41	20	41490	2680	24.24	24.09	-0.15
[41A]-[41C]-[PC2]	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	41292	2660.2	41	20	41490	2680	25.74	25.79	0.05
[41A]-[41C]-[PC2]	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	40422	2573.2	41	20	41490	2680	25.74	25.72	-0.02
[41D]-[PC3]	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	40422	2573.2	41	20	40224	2553.4	24.24	24.16	-0.08
[41D]-[PC2]	41	20	40620	2593	40620	2593	QPSK	1	0	41	20	40422	2573.2	41	20	40224	2553.4	25.74	25.60	-0.14
[48A]-[48A]-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	48	20	55990	3625	48	20	56640	3690	23.87	23.74	-0.13
[48C]-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	48	20	55990	3625	48	20	56188	3644.8	23.87	23.85	-0.02

LTE Down Link 4CA 4x4 MIMO Call Setup

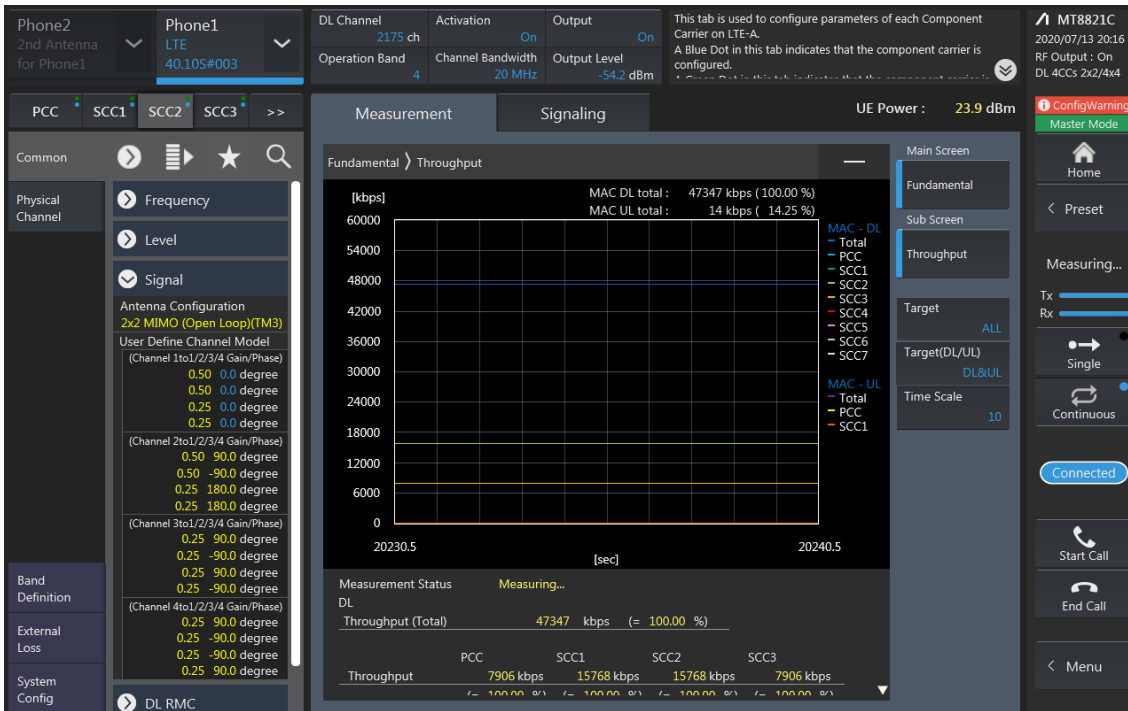
PCC Setting: Channel /RB/BW/Modulation



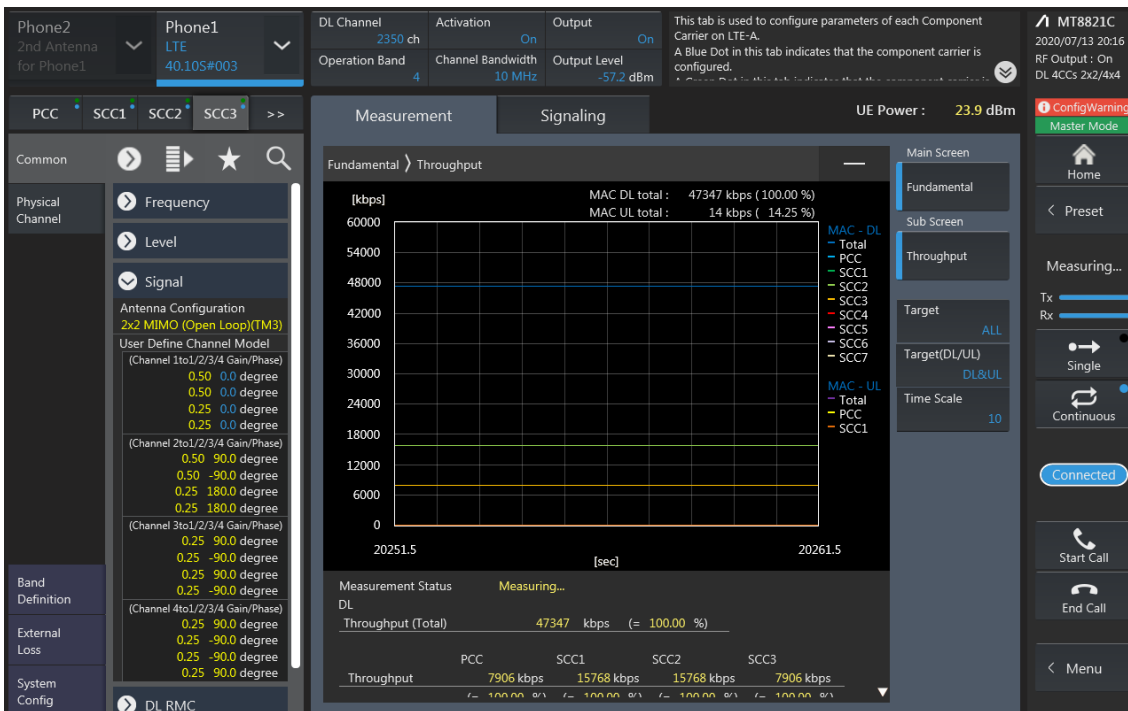
SCC1 Setting : Channel /RB/BW/Modulation



SCC2 Setting (Channel /RB/BW/Modulation) and call Connection



SCC3 Setting (Channel /RB/BW/Modulation) and call Connection

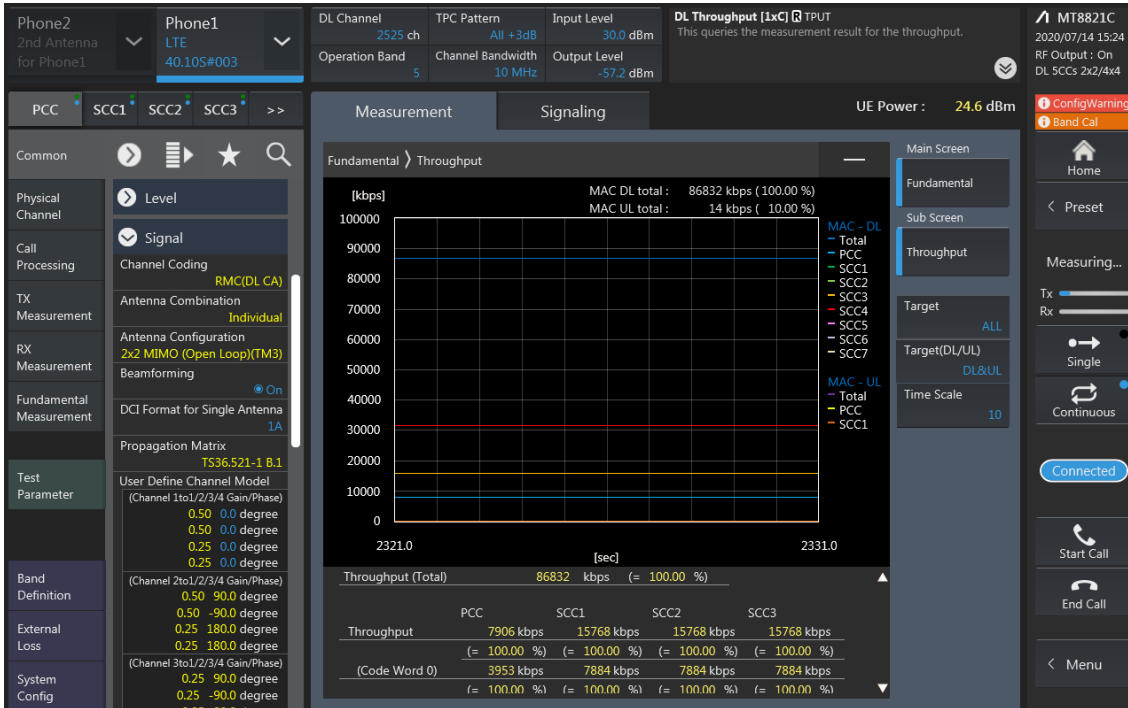


LTE Downlink 4CA 4X4 MIMO Maximum Conducted Power

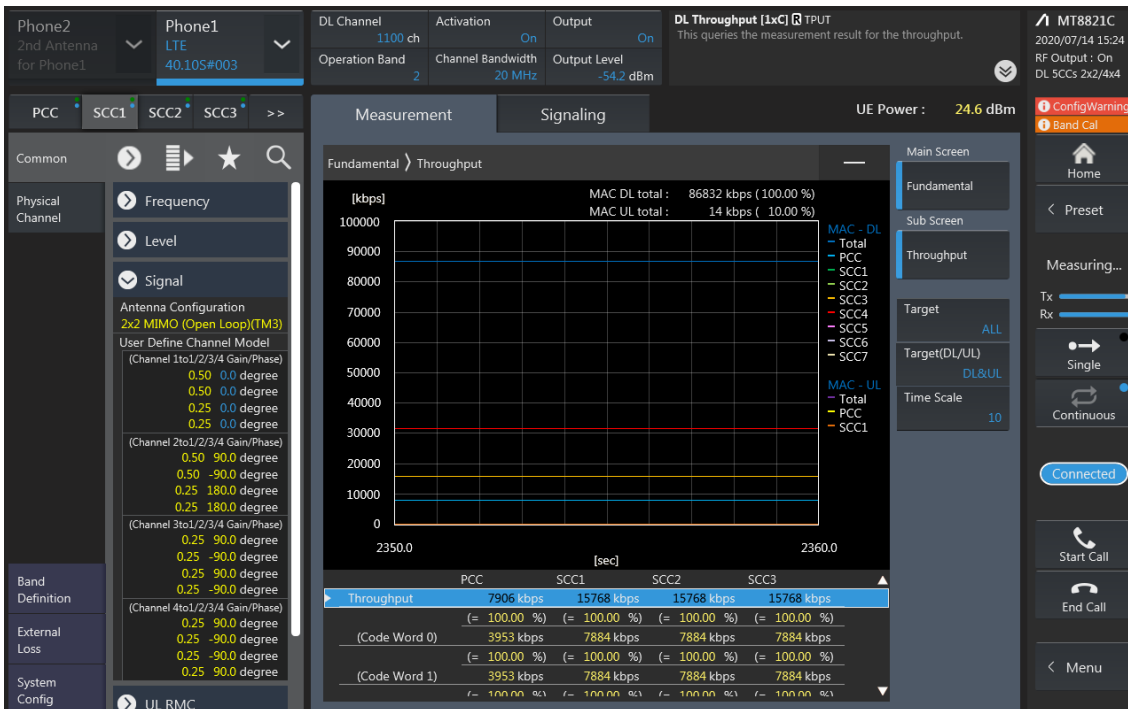
Combination	PCC									SCC				SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enhancement (dBm) (2)	Deviation (dB) (2-1)
[2A]-[2A]-[4A]-[4A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	4	20	2175	2132.5	4	10	2000	2115	24.15	24.01	-0.14
[2A]-[2A]-[4A]-[4A]	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	2	20	900	1960	2	20	1100	1980	23.77	23.81	0.04
[2A]-[2A]-[4A]-5A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	4	20	2175	2132.5	5	10	2525	881.5	24.15	24.10	-0.05
[2A]-[2A]-[4A]-5A	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	23.77	23.82	0.05
[2A]-[2A]-[4A]-5A	5	5	20425	828.5	2425	871.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	4	20	2175	2132.5	24.46	24.49	0.03
[2A]-[2A]-[4A]-12A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	4	20	2175	2132.5	12	10	5095	737.5	24.15	24.12	-0.03
[2A]-[2A]-[4A]-12A	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	23.77	23.75	-0.02
[2A]-[2A]-[4A]-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	4	20	2175	2132.5	24.37	24.28	-0.09
[2A]-[2A]-[4A]-71A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	4	20	2175	2132.5	71	20	68761	634.5	24.15	24.12	-0.03
[2A]-[2A]-[4A]-71A	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	2	20	1100	1980	71	20	68761	634.5	23.77	23.77	0.00
[2A]-[2A]-[4A]-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	4	20	2175	2132.5	23.87	23.79	-0.08
[2A]-[2A]-[66A]-71A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	66	20	66786	2145	71	20	68761	634.5	24.15	24.05	-0.10
[2A]-[2A]-[66A]-71A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	71	20	68761	634.5	23.89	23.85	-0.04
[2A]-[2A]-[66A]-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	23.87	23.88	0.01
[2A]-[4A]-[4A]-5A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	5	10	2525	881.5	24.15	24.22	0.07
[2A]-[4A]-[4A]-5A	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	2	20	900	1960	5	10	2525	881.5	23.77	23.65	-0.12
[2A]-[4A]-[4A]-5A	5	5	20425	828.5	2425	871.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	4	10	2000	2115	24.46	24.49	0.03
[2A]-[4A]-[4A]-12A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	12	10	5095	737.5	24.15	24.22	0.07
[2A]-[4A]-[4A]-12A	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	2	20	900	1960	12	10	5095	737.5	23.77	23.87	0.10
[2A]-[4A]-[4A]-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	4	20	2175	2132.5	4	10	2000	2115	24.37	24.47	0.10
[2A]-[4A]-12B	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	12	5	5047	732.7	12	5	5047	732.7	24.15	24.18	0.03
[2A]-[4A]-12B	4	10	20350	1750	2350	2150	QPSK	1	24	2	20	900	1960	12	5	5095	737.5	12	5	5047	732.7	23.77	23.80	0.03
[2A]-[4A]-12B	12	5	23095	707.5	5095	737.5	QPSK	1	12	12	5	5047	732.7	2	20	900	1960	4	20	2175	2132.5	24.07	24.00	-0.07
[2A]-[12A]-[66C]	2	20	19100	1900	1100	1980	QPSK	1	0	12	10	5095	737.5	66	20	66786	2145	66	20	66984	2164.8	24.15	24.14	-0.01
[2A]-[12A]-[66C]	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	66	20	66786	2145	66	20	66984	2164.8	24.37	24.40	0.03
[2A]-[12A]-[66C]	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2164.8	2	20	900	1960	12	10	5095	737.5	23.89	23.86	-0.03
[2A]-[13A]-[66C]	2	20	19100	1900	1100	1980	QPSK	1	0	13	10	5230	751	66	20	66786	2145	66	20	66984	2164.8	24.15	24.24	0.09
[2A]-[13A]-[66C]	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	66	20	66786	2145	66	20	66984	2164.8	23.89	24.00	0.02
[2A]-[13A]-[66C]	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2164.8	2	20	900	1960	13	10	5230	751	23.89	23.87	-0.02
[2A]-[66A]-[66A]-71A	2	20	19100	1900	1100	1980	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	71	20	68761	634.5	24.15	24.01	-0.14
[2A]-[66A]-[66A]-71A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	71	20	68761	634.5	23.89	23.76	-0.13
[2A]-[66A]-[66A]-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	2	20	900	1960	66	20	66786	2145	66	20	67236	2190	23.87	23.81	-0.06
[2C]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	902	1960.2	66	20	66786	2145	66	20	67236	2190	24.15	24.20	0.05
[2C]-[66A]-[66A]	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1098	1979.8	23.89	23.99	0.10
[2A]-[66C]-71A	2	20	19100	1900	1100	1980	QPSK	1	0	66	20	66786	2145	66	20	66984	2164.8	71	20	68761	634.5	24.15	24.02	-0.13
[2A]-[66C]-71A	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2164.8	2	20	900	1960	71	20	68761	634.5	23.89	23.91	0.02
[2A]-[66C]-71A	71	10	133297	680.5	68761	634.5	QPSK	1	0	2	20	900	1960	66	20	66786	2145	66	20	66984	2164.8	23.87	23.88	0.01
[4A]-[4A]-12B	4	10	20350	1750	2350	2150	QPSK	1	24	4	20	2050	2120	12	5	5095	737.5	12	5	5047	732.7	23.77	23.73	-0.04
[4A]-[4A]-12B	12	5	23095	707.5	5095	737.5	QPSK	1	12	12	5	5047	732.7	4	20	2175	2132.5	4	10	2000	2115	24.07	23.97	-0.10
[13A]-[48A]-[66C]	13	10	23230	782	5230	751	QPSK	1	0	48	20	55990	3625	66	20	66786	2145	66	20	66984	2164.8	23.98	23.83	-0.15
[13A]-[48A]-[66C]	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2164.8	13	10	5230	751	48	20	55990	3625	23.89	23.87	-0.02
[25A]-[41D]	25	10	26090	1855	8090	1936	QPSK	1	24	41	20	40620	2593	41	20	40422	2573.2	41	20	40224	2553.4	23.94	23.95	0.01
[29A]-[30A]-[66A]-[66A]	30	5	27685	2307.5	9795	2352.5	QPSK	1	24	29	10	9715	722.5	66	20	66786	2145	66	20	67236	2190	22.4	22.43	0.03
[29A]-[30A]-[66A]-[66A]	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	29	10	9715	722.5	30	10	9620	2355	23.89	23.88	-0.01
[48A]-[48A]-[66A]-[66A]	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	67236	2190	48	20	55990	3625	48	20	56640	3690	23.89	23.95	0.06
[48C]-[66C]	66	5	132647	1777.5	67111	2177.5	QPSK	1	0	66	20	66984	2164.8	48	20	55990	3625	48	20	56188	3644.8	23.89	23.97	0.08

LTE Down Link 5CA 4x4 MIMO Call Setup

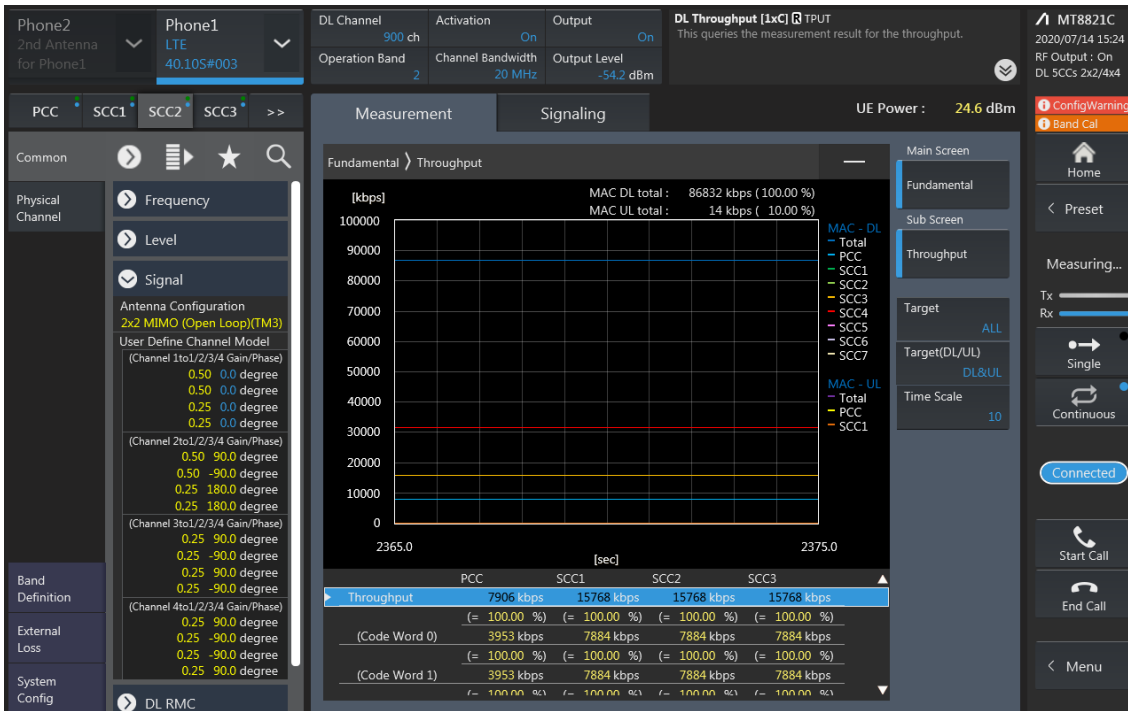
PCC Setting: Channel /RB/BW/Modulation



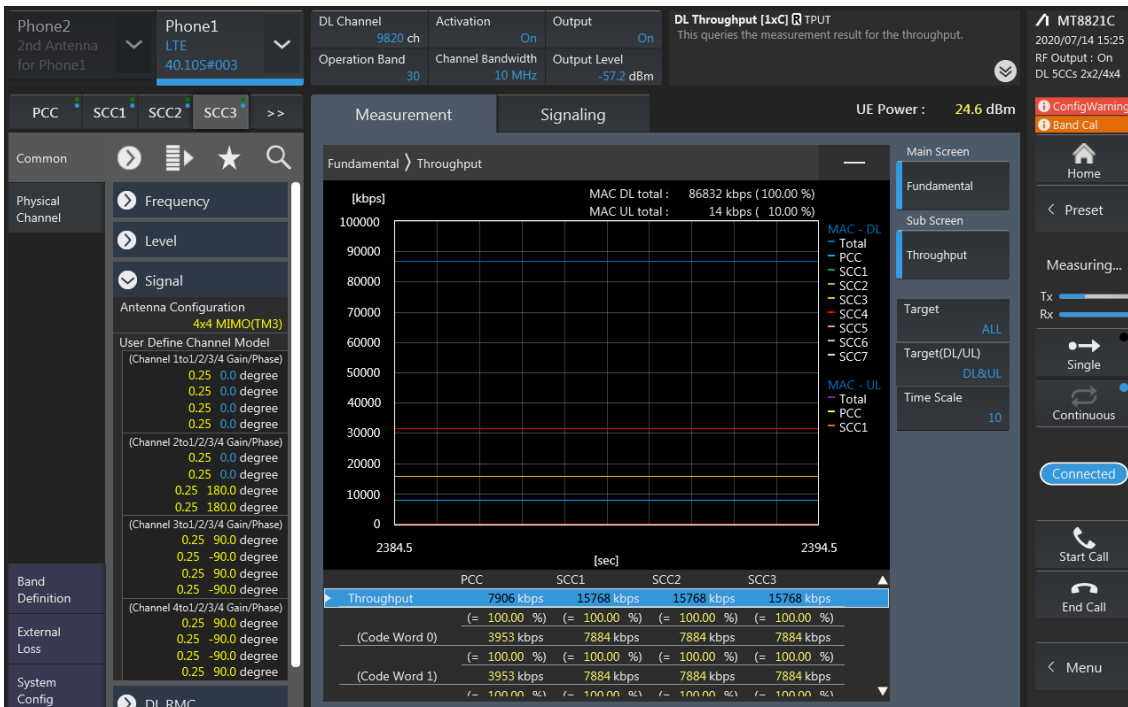
SCC1 Setting : Channel /RB/BW/Modulation



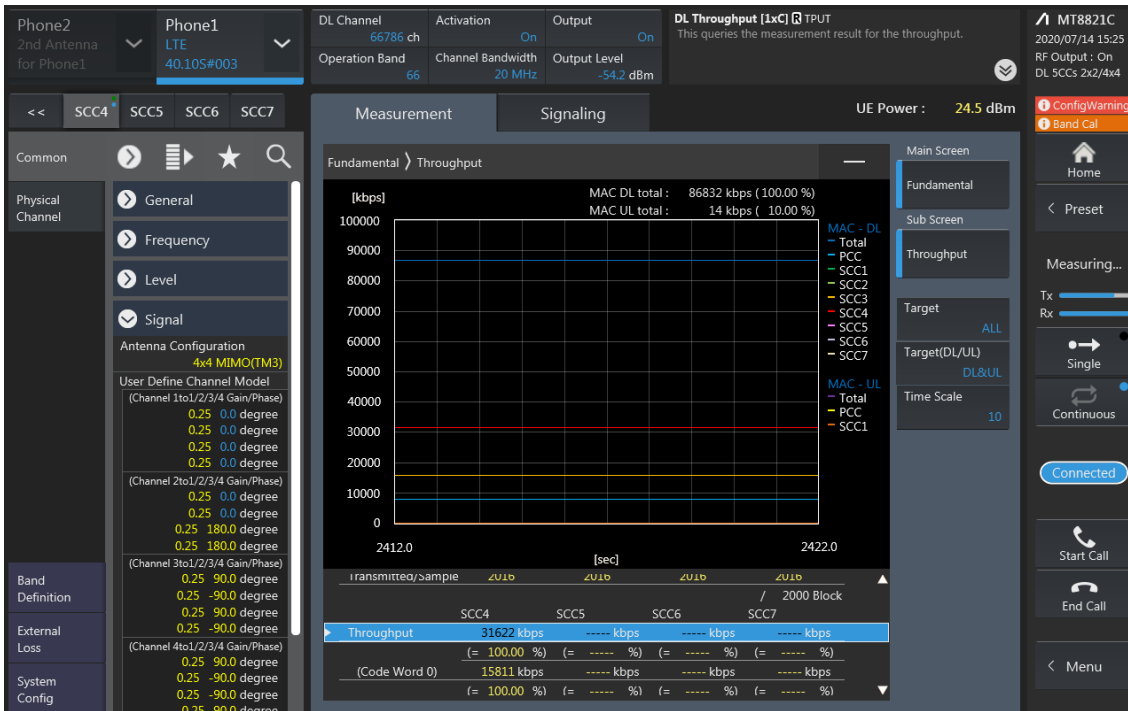
SCC2 Setting (Channel /RB/BW/Modulation) and call Connection



SCC3 Setting (Channel /RB/BW/Modulation) and call Connection



SCC4 Setting (Channel /RB/BW/Modulation) and call Connection



LTE Downlink 5CA 4X4 MIMO Maximum Conducted Power

Combination	Band	BW	PCC				SSC				SSC				SSC				LTE Max Power (W)	LTE Power with DL CA (W)	Duty Cycle (%)							
			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				
[2A]-[2A]-[5A]-[30A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	5	10	2525	881.5	30	10	9820	2355	66	20	66786	2145	2415	2402	-0.13
[2A]-[2A]-[5A]-[30A]-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	2446	2431	-0.15
[2A]-[2A]-[5A]-[30A]-[66A]	30	5	27685	2307.5	9795	2362.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	66	20	66786	2145	2240	2226	-0.14
[2A]-[2A]-[5A]-[30A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	30	10	9820	2355	2389	2388	-0.01
[2A]-[2A]-[5A]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	5	10	2525	881.5	66	20	66786	2145	66	20	67236	2190	2415	2412	-0.03
[2A]-[2A]-[5A]-[66A]-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	66786	2145	2240	2245	0.05
[2A]-[2A]-[5A]-[66A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	2389	2386	0.07
[2A]-[2A]-[5A]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	5	10	2525	881.5	66	20	66786	2145	66	20	66786	2145	2415	2425	0.10
[2A]-[2A]-[5A]-[66A]-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	66786	2145	2446	2431	-0.15
[2A]-[2A]-[5A]-[66A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	66	20	66994	2165.8	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	2389	2392	0.03
[2A]-[2A]-[12A]-[30A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	12	10	5095	737.5	30	10	9820	2355	66	20	66786	2145	2415	2411	-0.04
[2A]-[2A]-[12A]-[30A]-[66A]	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	30	10	9820	2355	66	20	66786	2145	2437	2423	-0.14
[2A]-[2A]-[12A]-[30A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	30	10	9820	2355	2389	2380	-0.09
[2A]-[2A]-[12A]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	12	10	5095	737.5	66	20	66786	2145	66	20	67236	2190	2415	2410	-0.05
[2A]-[2A]-[12A]-[66A]-[66A]	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	2437	2430	-0.07
[2A]-[2A]-[12A]-[66A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	2389	2379	-0.10
[2A]-[2A]-[12B]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	12	5	5047	732.7	12	5	5047	732.7	66	20	66786	2145	2415	2421	0.06
[2A]-[2A]-[12B]-[66A]	12	5	23095	707.5	5095	737.5	QPSK	1	12	12	5	5047	732.7	2	20	900	1960	66	20	66786	2145	66	20	66786	2145	2437	2430	-0.07
[2A]-[2A]-[12B]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	1100	1980	12	5	5047	732.7	12	5	5047	732.7	2389	2386	0.07
[2A]-[2A]-[13A]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	13	10	5230	751	66	20	66786	2145	66	20	67236	2190	2415	2401	-0.14
[2A]-[2A]-[13A]-[66A]-[66A]	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	48	20	5990	3625	48	20	66786	2145	66	20	67236	2190	2388	2402	0.04
[2A]-[2A]-[13A]-[66A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	1100	1980	13	10	5230	751	66	20	66786	2145	2415	2381	-0.08
[2A]-[2A]-[29A]-[30A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	29	10	9715	722.5	30	10	9820	2355	66	20	66786	2145	2415	2416	0.01
[2A]-[2A]-[29A]-[30A]-[66A]	30	5	27685	2307.5	9795	2362.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	29	10	9715	722.5	66	20	66786	2145	2240	2227	-0.13
[2A]-[2A]-[29A]-[30A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	29	10	9715	722.5	66	20	66786	2145	2389	2386	-0.03
[2A]-[2A]-[29A]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	29	10	9715	722.5	66	20	66786	2145	66	20	67236	2190	2415	2407	-0.08
[2A]-[2A]-[29A]-[66A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	1100	1980	29	10	9715	722.5	66	20	66786	2145	2389	2386	-0.03
[2A]-[5A]-[30A]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	2415	2412	-0.03
[2A]-[5A]-[30A]-[66A]-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	12	2	20	900	1960	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	2446	2433	-0.13
[2A]-[5A]-[30A]-[66A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	1100	1980	29	10	9715	722.5	66	20	66786	2145	2415	2407	-0.08
[2A]-[5A]-[30A]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	30	10	9820	2355	66	20	66786	2145	66	20	67236	2190	2415	2412	-0.03
[2A]-[5A]-[49A]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	48	20	5990	3625	48	20	66786	2145	66	20	67236	2190	2415	2419	0.04
[2A]-[5A]-[49A]-[66A]-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	12	2	20	900	1960	48	20	5990	3625	48	20	66786	2145	66	20	66786	2145	2446	2449	0.03
[2A]-[5A]-[49A]-[66A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	66	20	67236	2190	2	20	1100	1980	48	20	5990	3625	48	20	66786	2145	2389	2381	-0.02
[2A]-[5A]-[49A]-[66A]-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	48	20	5990	3625	48	20	66786	2145	66	20	67236	2190	2415	2407	0.09
[2A]-[5A]-[49A]-[66A]-[66A]	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	48	20	5990	3625	48	20	66786	2145	66	20	66786	2145	2388	2407	0.09
[2A]-[5A]-[49A]-[66A]-[66A]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	2	20	900	1960	13	10	5230	751	48	20	5990	3625	48	20	66786	2145	2389	2383	-0.06
[2A]-[13A]-[48B]	2	20	19100	1900	1100	1980	QPSK	1	0	13	10	5230	751	48	20	5990	3625	48	20	66786	2145	66	20	66786	2145	2415	2409	-0.06
[2A]-[13A]-[48B]	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	48	20	5990	3625	48	20	66786	2145	66	20	66786	2145	2389	2390	-0.08
[2A]-[13A]-[48B]	66	5	13847	1777.5	6711	2177.5	QPSK	1	0	48	20	5990	3625	48	20	5990	3625	48	20	66442	3670.2	48	20	66786	2145	2415	2416	0.01
[2A]-[13A]-[48C]	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	900	1960	48	20	5990	3625	48	20	66442	3670.2	48	20	66640	3690	2415	2402	-0.13
[2A]-[13A]-[48C]	13	10	23230	782	5230																							

LTE Down Link 6CA 4x4 MIMO Call Setup

PCC Setting (Channel/ RB/ BW/ Modulation)

	PCC	SCC1	SCC2	SCC3
Throughput	7906 kbps	7906 kbps	15768 kbps	15768 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
(Code Word 0)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
(Code Word 1)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
Block Error Rate	0.0000	0.0000	0.0000	0.0000
0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Error Count	0	0	0	0
NACK	0	0	0	0
DTX	0	0	0	0
ANY	0	0	----	----
Transmitted/Sample	2016	2016	2016	2016
				/ 2000 Block
Throughput	15768 kbps	31622 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)
(Code Word 0)	7884 kbps	15811 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)
(Code Word 1)	7884 kbps	15811 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)
Block Error Rate	0.0000	0.0000	-----	-----

SCC1 Setting (Channel/ RB/ BW/ Modulation) and call Connection

	PCC	SCC1	SCC2	SCC3
Throughput	7906 kbps	7906 kbps	15768 kbps	15768 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
(Code Word 0)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
(Code Word 1)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
Block Error Rate	0.0000	0.0000	0.0000	0.0000
0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Error Count	0	0	0	0
NACK	0	0	0	0
DTX	0	0	0	0
ANY	0	0	----	----
Transmitted/Sample	900	900	900	900
				/ 2000 Block
Throughput	15768 kbps	31622 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)
(Code Word 0)	7884 kbps	15811 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)
(Code Word 1)	7884 kbps	15811 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)
Block Error Rate	0.0000	0.0000	-----	-----

SCC2 Setting (Channel/ RB/ BW/ Modulation) and call Connection

DL Channel: 50665 ch, Operation Band: 46, Channel Bandwidth: 20 MHz, Output Level: -54.2 dBm

UE Power: 23.9 dBm

	PCC	SCC1	SCC2	SCC3
Throughput	7906 kbps	7906 kbps	15768 kbps	15768 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
(Code Word 0)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
(Code Word 1)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
Block Error Rate	0.0000	0.0000	0.0000	0.0000
	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Error Count	0	0	0	0
NACK	0	0	0	0
DTX	0	0	0	0
ANY	0	0	----	----
Transmitted/Sample	2016	2016	2016	2016
			/ 2000 Block	
Throughput	15768 kbps	31622 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)	(= ----- %)
(Code Word 0)	7884 kbps	15811 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)	(= ----- %)
(Code Word 1)	7884 kbps	15811 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)	(= ----- %)
Block Error Rate	0.0000	0.0000	-----	-----

SCC3 Setting (Channel/ RB/ BW/ Modulation) and call Connection

DL Channel: 50467 ch, Operation Band: 46, Channel Bandwidth: 20 MHz, Output Level: -54.2 dBm

UE Power: 23.9 dBm

	PCC	SCC1	SCC2	SCC3
Throughput	7906 kbps	7906 kbps	15768 kbps	15768 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
(Code Word 0)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
(Code Word 1)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)
Block Error Rate	0.0000	0.0000	0.0000	0.0000
	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Error Count	0	0	0	0
NACK	0	0	0	0
DTX	0	0	0	0
ANY	0	0	----	----
Transmitted/Sample	2016	2016	2016	2016
			/ 2000 Block	
Throughput	15768 kbps	31622 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)	(= ----- %)
(Code Word 0)	7884 kbps	15811 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)	(= ----- %)
(Code Word 1)	7884 kbps	15811 kbps	----- kbps	----- kbps
(= 100.00 %)	(= 100.00 %)	(= ----- %)	(= ----- %)	(= ----- %)
Block Error Rate	0.0000	0.0000	-----	-----

SCC4 Setting (Channel/ RB/ BW/ Modulation) and call Connection

DL Channel: 50863 ch, Activation: On, Output: On, UE Power: 23.9 dBm

Operation Band: 46, Channel Bandwidth: 20 MHz, Output Level: -54.2 dBm

Antenna Configuration: 2x2 MIMO (Open Loop(TM3))

Throughput	PCC	SCC1	SCC2	SCC3
Throughput	7906 kbps	7906 kbps	15768 kbps	15768 kbps
(Code Word 0)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(Code Word 1)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
Block Error Rate	0.0000	0.0000	0.0000	0.0000
Error Count	0	0	0	0
NACK	0	0	0	0
DTX	0	0	0	0
ANY	0	0	----	----
Transmitted/Sample	1800	1800	1800	1800

SCC5 Setting (Channel/ RB/ BW/ Modulation) and call Connection

DL Channel: 66786 ch, Activation: On, Output: On, UE Power: 23.9 dBm

Operation Band: 66, Channel Bandwidth: 20 MHz, Output Level: -54.2 dBm

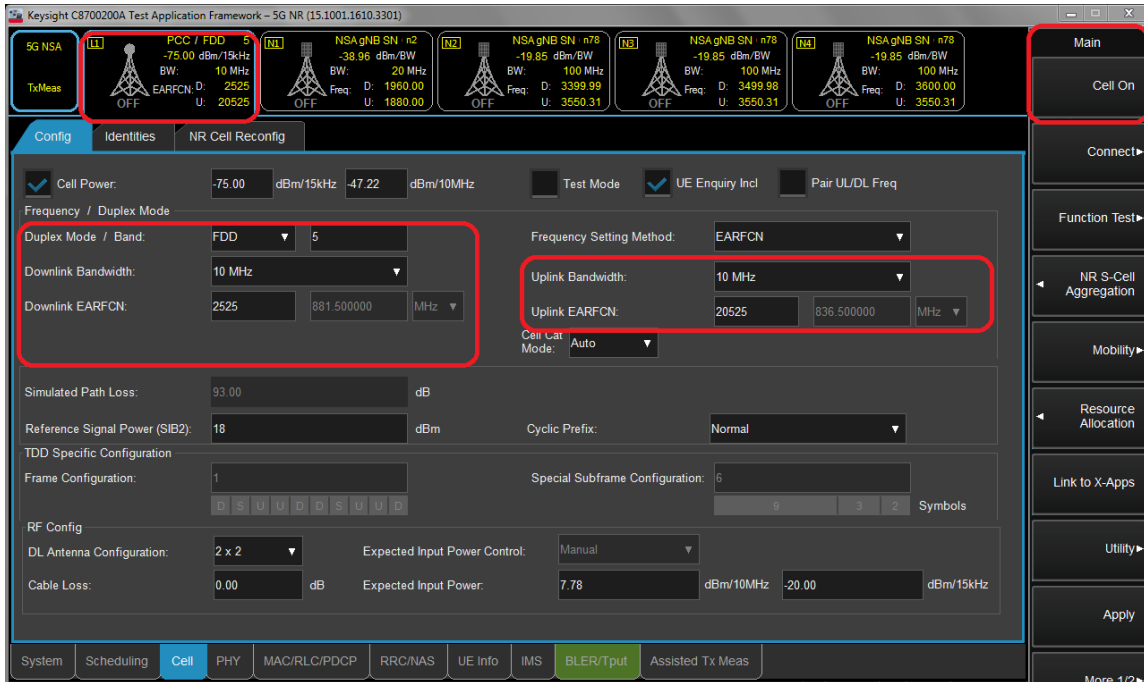
Antenna Configuration: 4x4 MIMO(TM3)

Throughput	PCC	SCC1	SCC2	SCC3
Throughput	7906 kbps	7906 kbps	15768 kbps	15768 kbps
(Code Word 0)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
(Code Word 1)	3953 kbps	3953 kbps	7884 kbps	7884 kbps
Block Error Rate	0.0000	0.0000	0.0000	0.0000
Error Count	0	0	0	0
NACK	0	0	0	0
DTX	0	0	0	0
ANY	0	0	----	----
Transmitted/Sample	2016	2016	2016	2016

2. 5G NR Call Box Setup

Procedure used to establish output Power measurement for NR Bands
 Select operating band, BW and Channel.

- Click Cell on button in the right of Test application screen.
- Turn the LTE Cell On using "ON/OFF" Key.

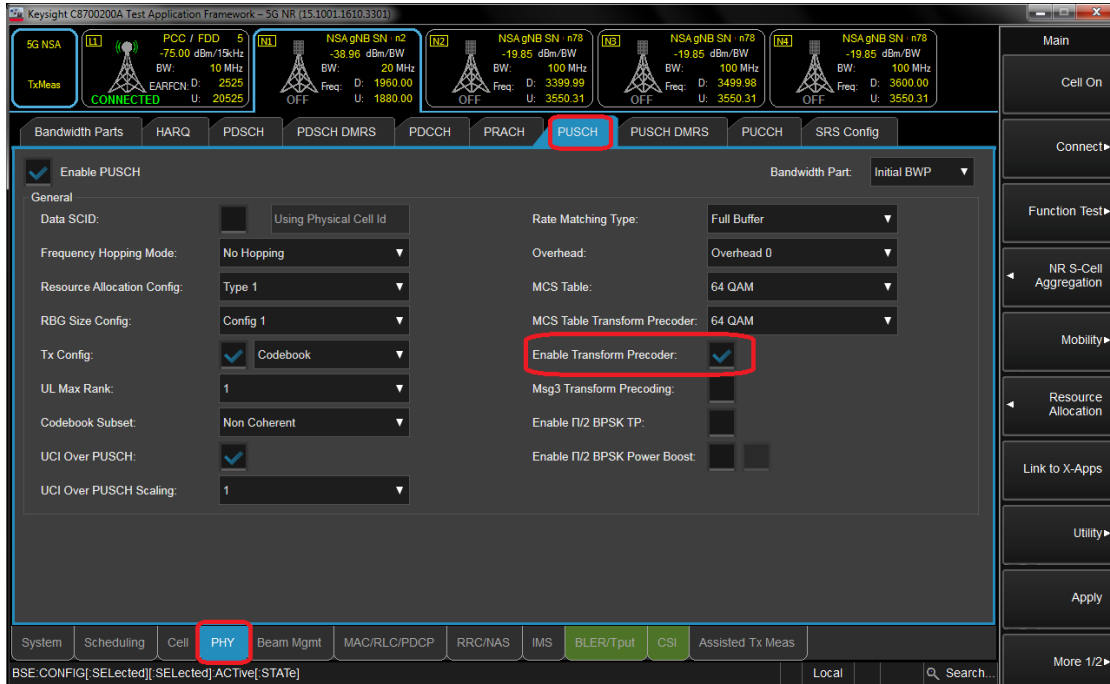


- Turn the Airplane Mode On and then turn the Airplane mode off.
- Select All down bits for UL Power control Mode in LTE.

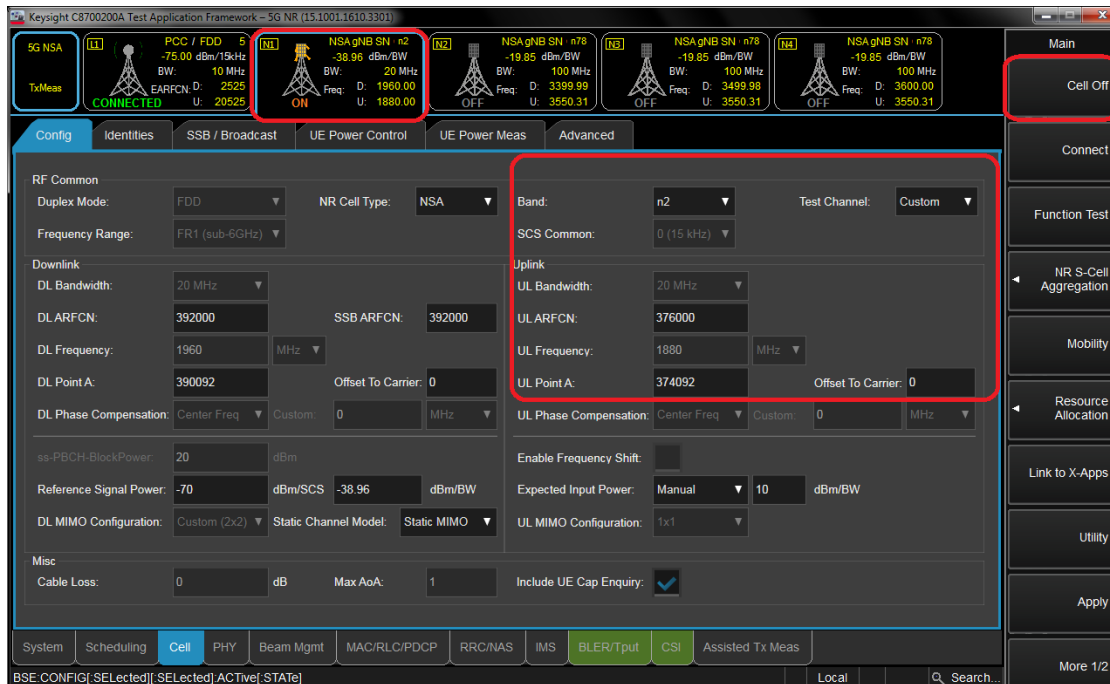


Setup for NR Band

- Select waveform for Setting NR Band (PHY->PUSCH->Enable Transform Precoder)
 - Enable : DFT-s-OFDM, Disable : CP-OFDM

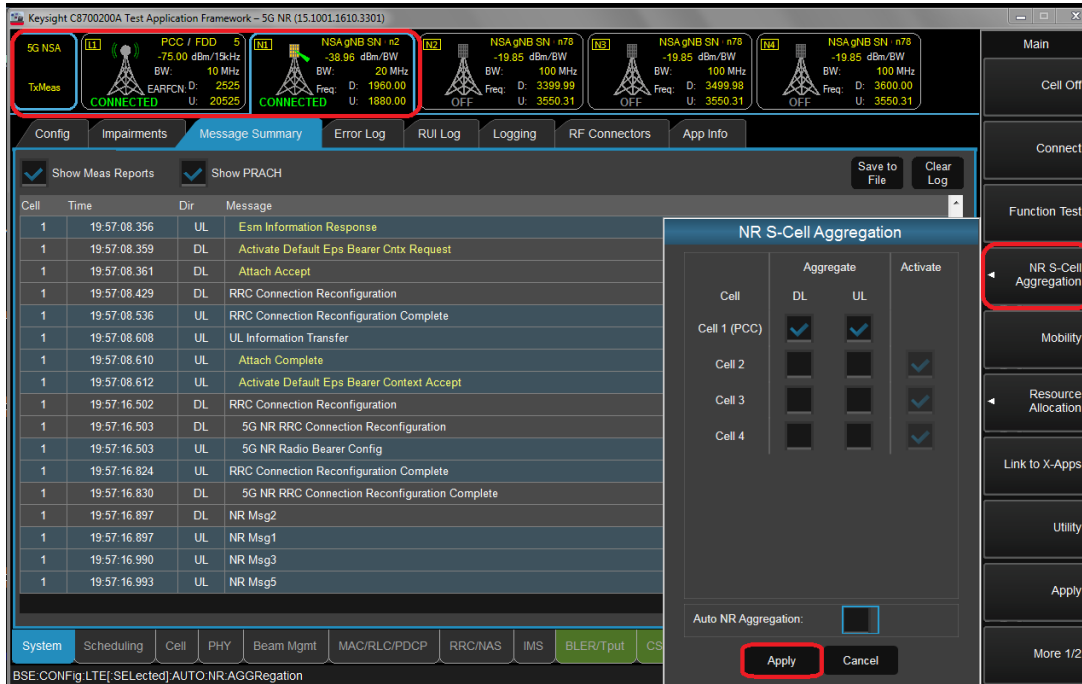


- Select operating band, BW, SCS and Channel.
- Turn the NR Cell On using “ON/OFF” Key.



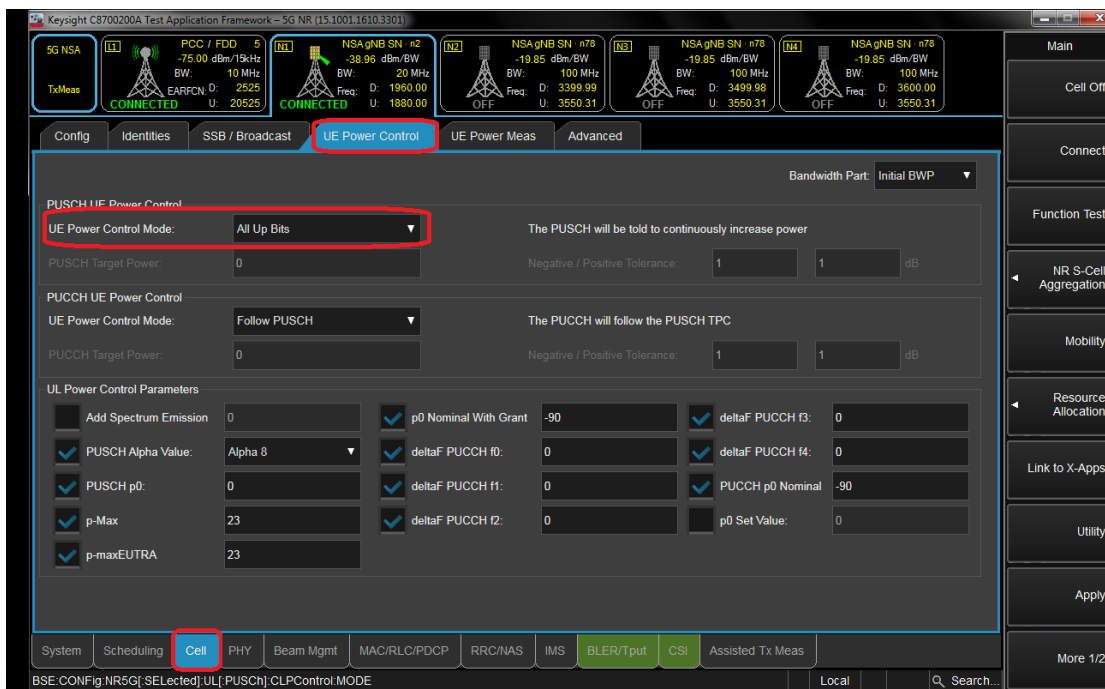
Connect NR S-Cell Aggregation

- Click NR S-Cell Aggregation
- Check the Cell 1's DL and UL box(PCC) and than Click Apply.
- Check the message summary If message shows NR Msg 5, It is connected.



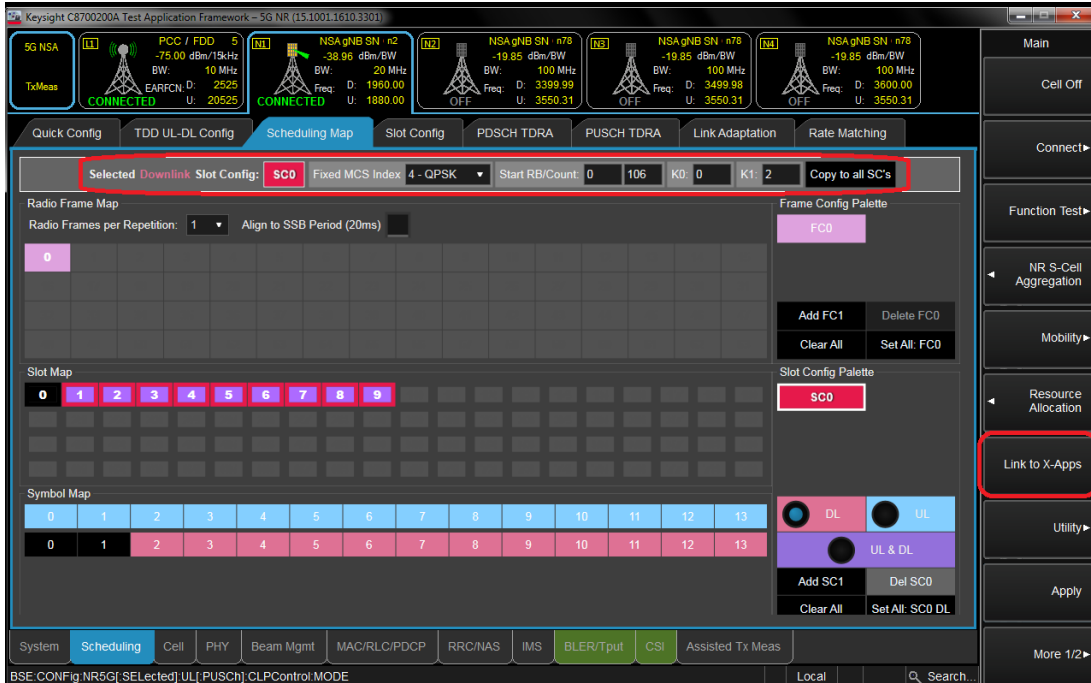
Max Power setting

- Click "Cell in the bottom of screen.
- Click "UE Power control" than change UE Power control mode to All Up bits.



Selecting Start RB/Count/MCS

- Select the each test configuring (Start RB, Count, MCS).



View Tx Power

- Click “Link to X-Apps.”(Please refer to Figure-7)
- Select “Channel Power”.

