

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:

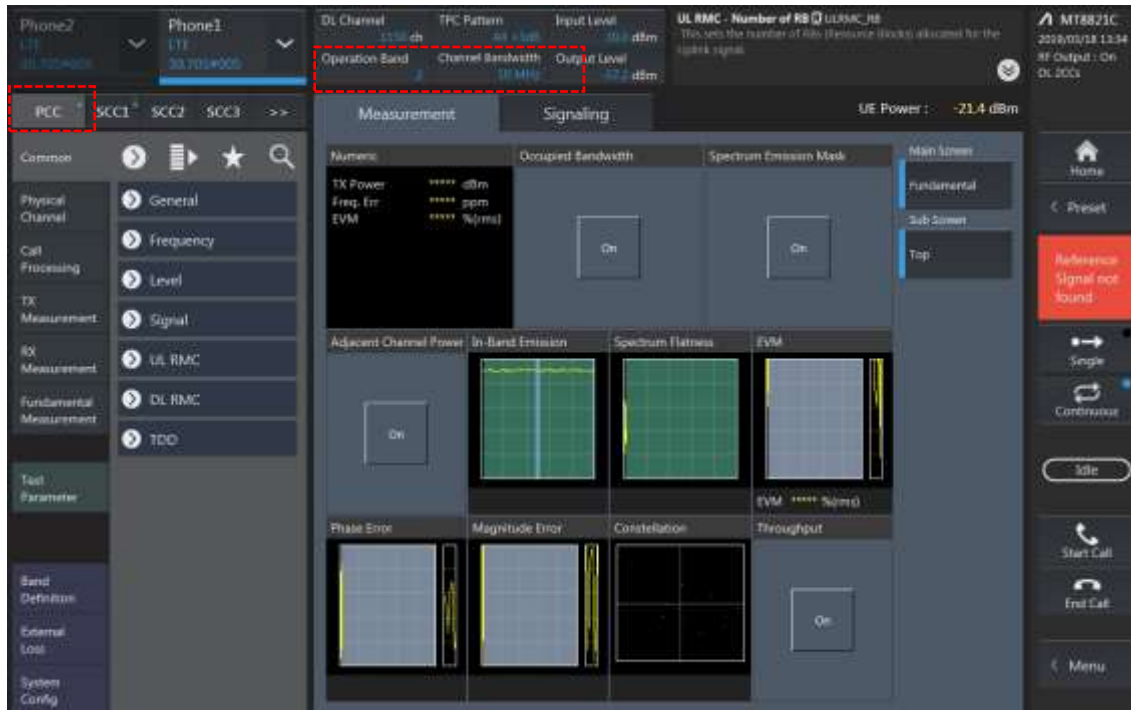
1. This device only supports downlink carrier aggregation. For every supported combination of downlink carrier aggregation, power measurements were performed with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation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



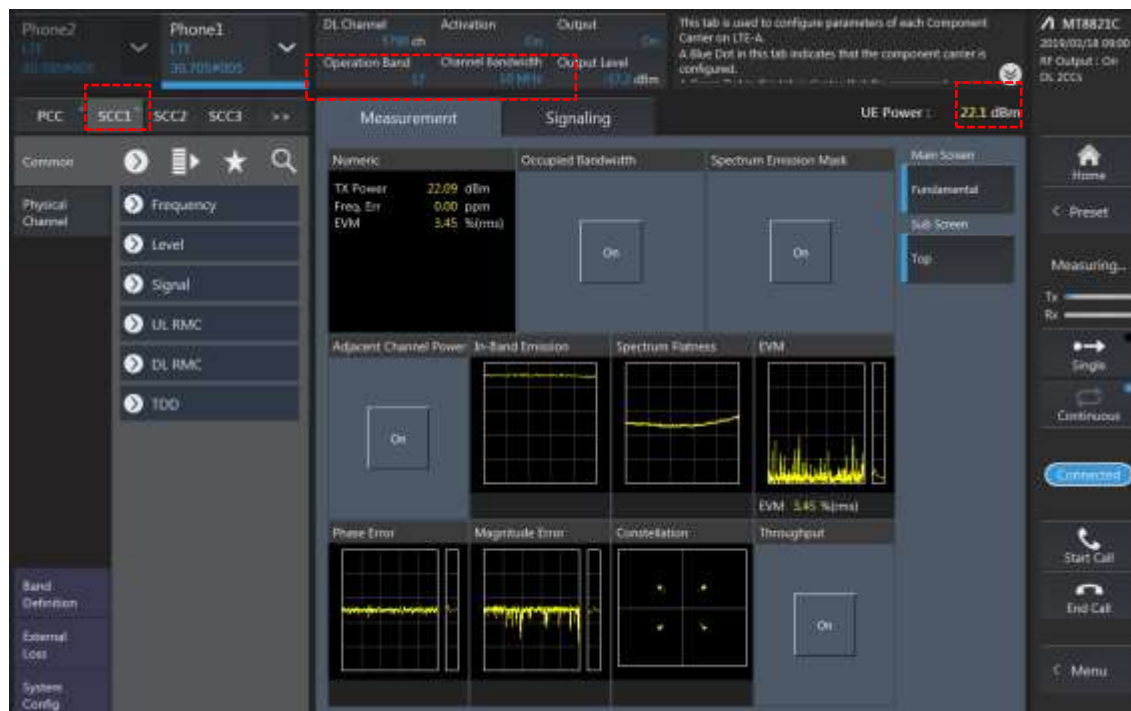
Power Measurement setup

LTE Down Link 2CA Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation



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

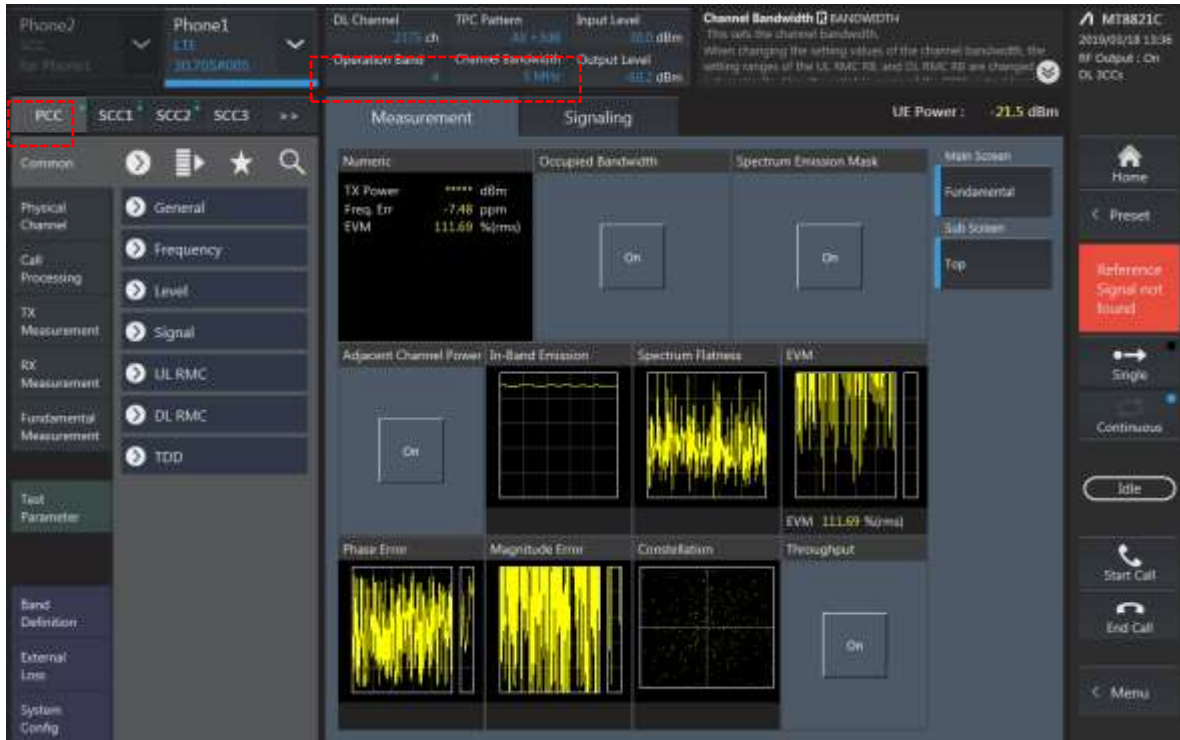


2CA Downlink Carrier aggregation Maximum conducted Powers

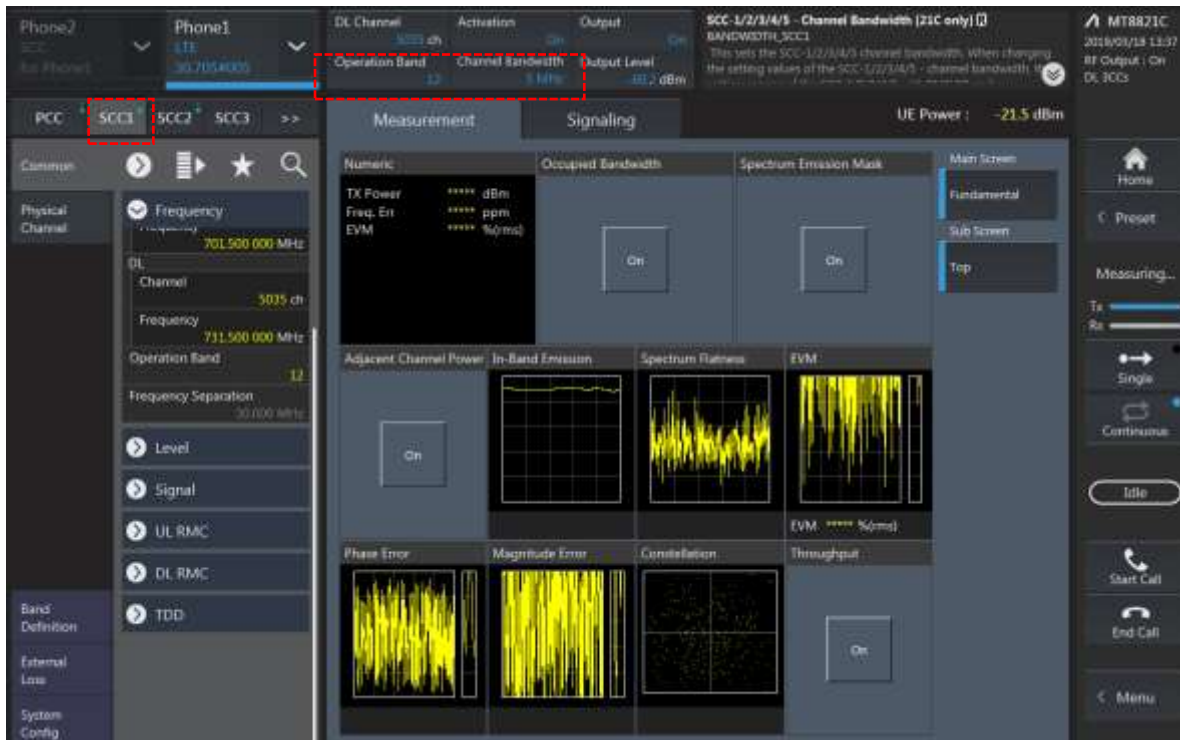
Combination	PCC									SCC				Tx Power		Deviation(dB) (2)-(1)
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	
5A-25A	5	10	20525	836.5	2525	881.5	QPSK	1	24	25	20	8365	1962.5	24.99	24.85	-0.14
5A-25A	25	20	26140	1860	8140	1940	QPSK	1	49	5	10	2525	881.5	24.65	24.85	0.20
5A-41A	5	10	20525	836.5	2525	881.5	QPSK	1	24	41	20	40620	2593	24.99	25.15	0.16
12A-25A	12	10	23095	707.5	5095	737.5	QPSK	1	24	25	20	8365	1962.5	24.86	24.70	-0.16
12A-25A	25	20	26140	1860	8140	1940	QPSK	1	49	12	10	5095	737.5	24.65	24.71	0.06
25A-25A(0)	25	5	26065	1852.5	8065	1932.5	QPSK	1	1	25	10	8640	1990	24.67	24.81	0.14
25A-25A(1)	25	20	26140	1860	8140	1940	QPSK	1	49	25	20	8590	1985	24.65	24.45	-0.20

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

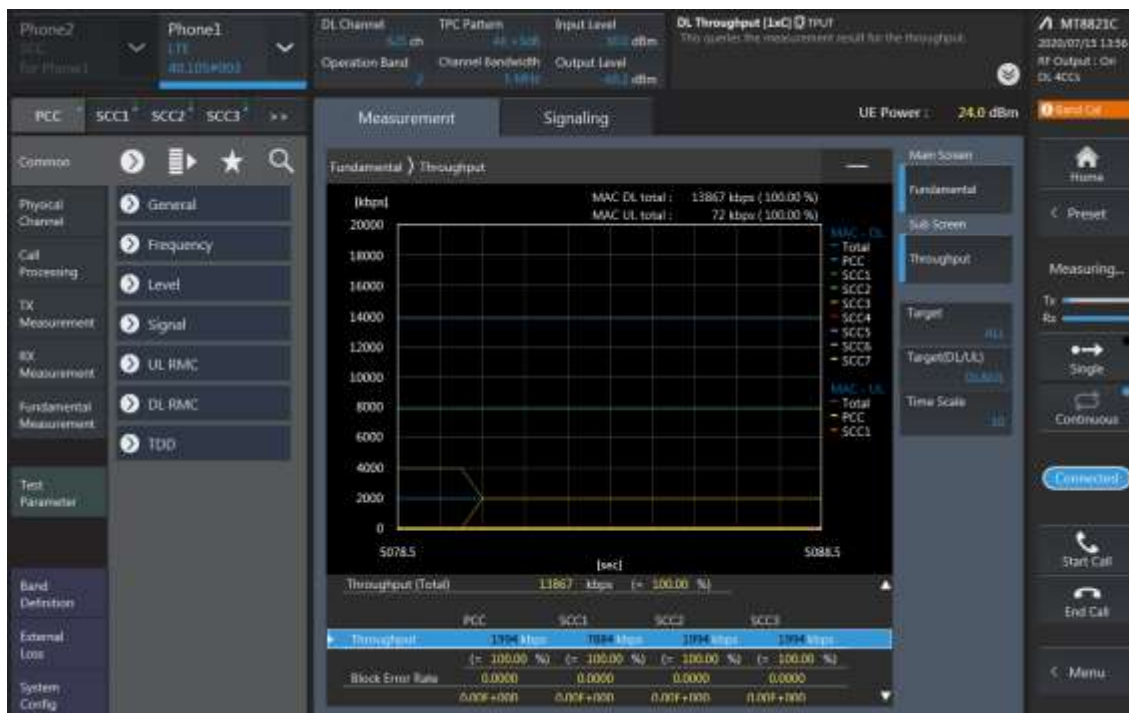


3CA Downlink Carrier aggregation Maximum conducted Powers

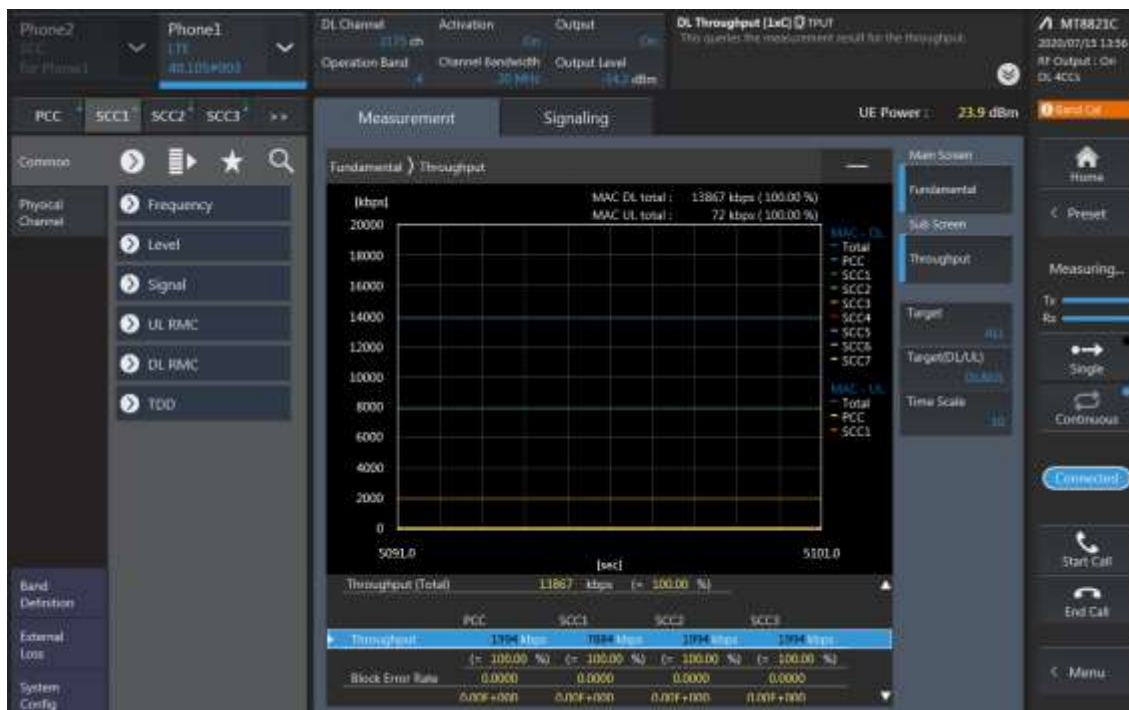
Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation (dB) (2)-(1)
2A-4A-13A	2	5	18625	1852.5	625	1932.5	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	24.75	24.55	-0.20
2A-4A-13A	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	13	10	5230	751	24.42	24.44	0.02
2A-4A-13A	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	24.99	24.81	-0.18
2A-4A-30A	2	5	18625	1852.5	625	1932.5	QPSK	1	0	4	20	2175	2132.5	30	10	9820	2355	24.75	24.57	-0.18
2A-4A-30A	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	30	10	9820	2355	24.42	24.32	-0.10
2A-4A-30A	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	22.87	22.91	0.04
2A-4A-71A	2	5	18625	1852.5	625	1932.5	QPSK	1	0	4	20	2175	2132.5	71	20	68786	637	24.75	24.87	0.12
2A-4A-71A	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2175	2132.5	2	20	900	1960	24.42	24.36	-0.06
2A-4A-71A	71	20	133322	683	68786	637	QPSK	1	0	4	20	2175	2132.5	2	20	900	1960	24.86	24.88	0.02
4A-4A-13A(0,1)	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2300	2145	13	10	5230	751	24.42	24.32	-0.10
4A-4A-13A	13	10	23230	782	5230	751	QPSK	1	0	4	20	2175	2132.5	4	20	2300	2145	24.99	24.91	-0.08
48A-48A-71A	71	20	133322	683	68786	637	QPSK	1	0	48	20	56207	3646.7	48	20	55340	3560	24.86	25.04	0.18
48C-71A	71	20	133322	683	68786	637	QPSK	1	0	48	20	55340	3560	48	20	55538	3579.8	24.86	24.98	0.12

LTE Down Link 4CA Call Setup

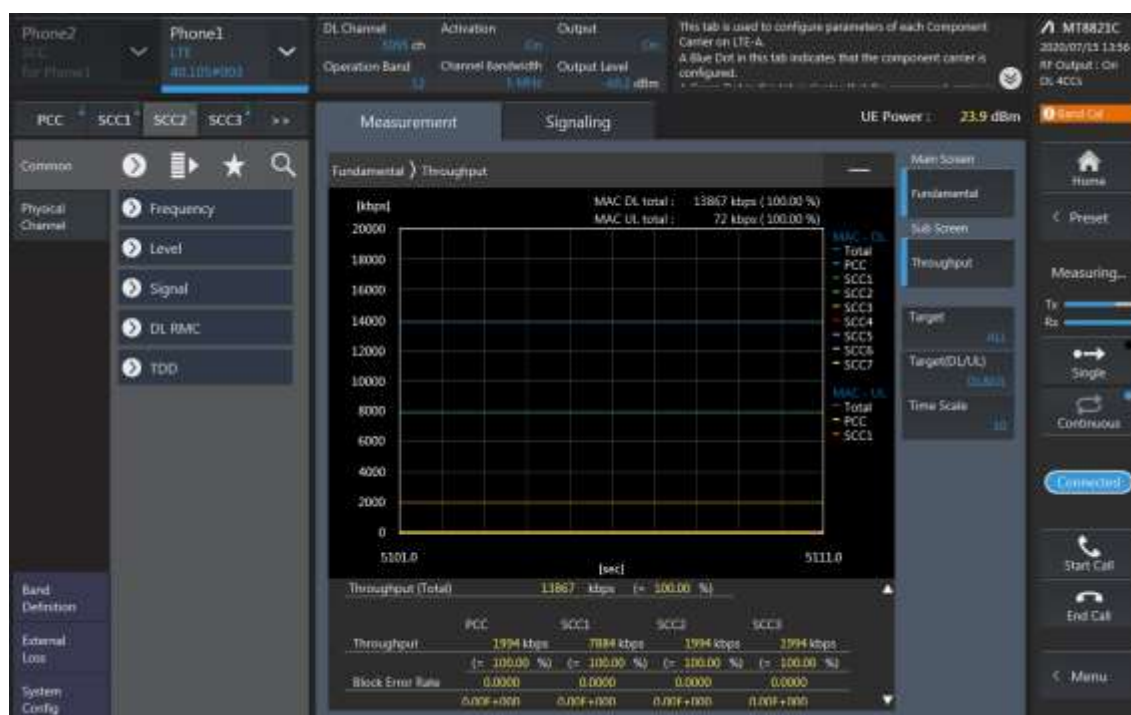
PCC Setting: Channel /RB/BW/Modulation



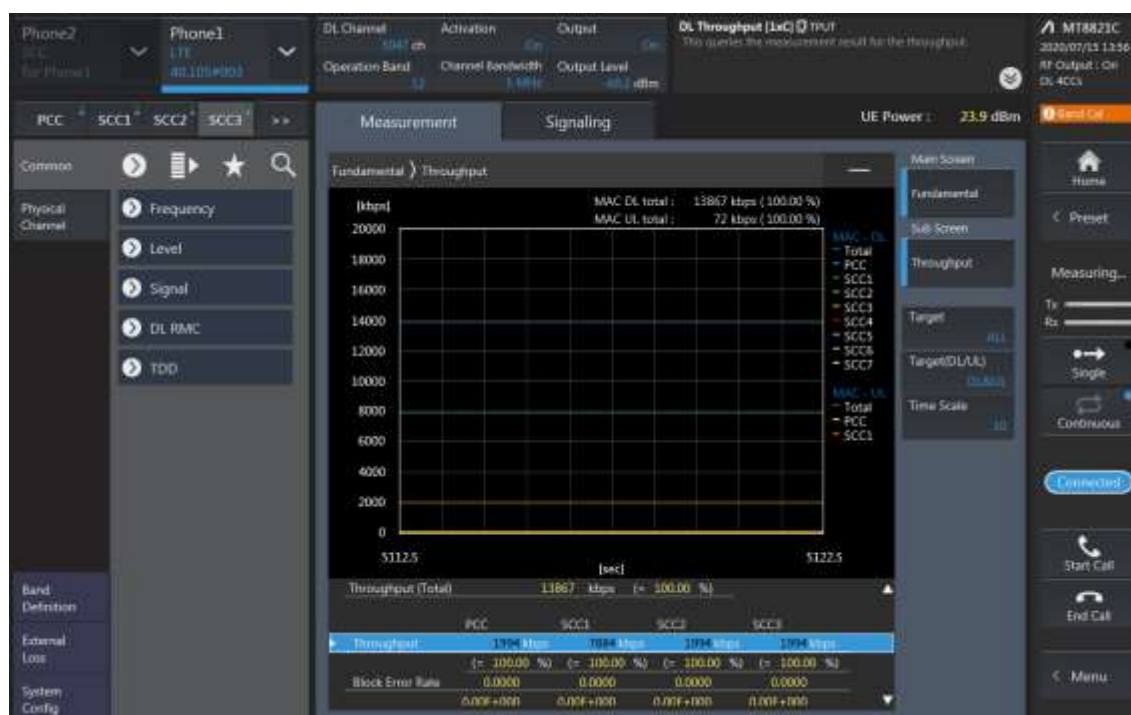
SCC1 Setting (Channel /RB/BW/Modulation)and call Connection



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

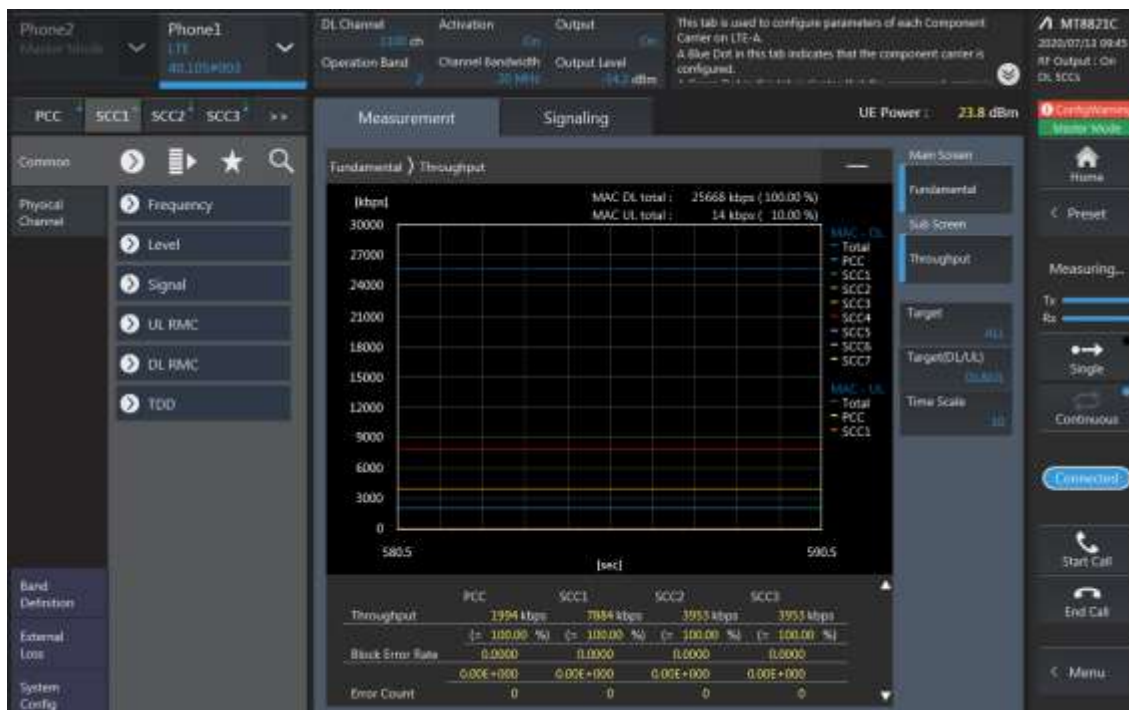
Combination	PCC									SCC				SCC				SCC				Tx Power			
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm)	LTE Tx Power with DL CA Enhancement (dBm)	Deviation (dB)	
2A-2A-4A-4A	2	5	18625	1862.5	625	1932.5	QPSK	1	0	2	20	1100	1980	4	20	2050	2120	4	20	2300	2145	24.75	24.83	0.08	
2A-2A-4A-4A	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2300	2145	2	20	900	1960	2	20	1100	1980	24.42	24.34	-0.08	
2A-2A-4A-5A	2	5	18625	1862.5	625	1932.5	QPSK	1	0	2	20	1100	1980	4	20	2050	2120	5	10	2525	881.5	24.75	24.75	0.00	
2A-2A-4A-5A	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	24.42	24.52	0.10	
2A-2A-4A-5A	5	10	20525	836.5	2525	881.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	4	20	2050	2120	24.99	25.01	0.02	
2A-2A-4A-12A	2	5	18625	1862.5	625	1932.5	QPSK	1	0	2	20	1100	1980	4	20	2050	2120	12	10	5095	737.5	24.75	24.55	-0.20	
2A-2A-4A-12A	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	2	20	1100	2120	12	10	5095	737.5	24.42	24.26	-0.16	
2A-2A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	2120	4	20	2050	2120	24.86	24.92	0.06	
2A-2A-66A-71A	2	5	18625	1862.5	625	1932.5	QPSK	1	0	2	20	1100	1980	66	20	66786	2165	71	20	66786	637	24.75	24.59	-0.16	
2A-2A-66A-71A	66	20	132072	1720	66536	2140	QPSK	1	0	2	20	900	1960	2	20	1100	2120	71	20	66786	637	24.34	24.26	-0.08	
2A-2A-66A-71A	71	20	133322	683	68786	637	QPSK	1	0	2	20	900	1960	2	20	1100	2120	66	20	66786	2165	24.86	24.72	-0.14	
2A-4A-4A-5A	2	5	18625	1862.5	625	1932.5	QPSK	1	0	4	20	2050	2120	4	20	2300	2145	5	10	2525	881.5	24.75	24.83	0.08	
2A-4A-4A-5A	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2300	2145	2	20	900	1960	5	10	2525	881.5	24.42	24.30	-0.12	
2A-4A-4A-5A	5	10	20525	836.5	2525	881.5	QPSK	1	24	2	20	900	1960	4	20	2050	2120	4	20	2300	2145	24.99	24.91	-0.08	
2A-4A-4A-12A	2	5	18625	1862.5	625	1932.5	QPSK	1	0	4	20	2050	2120	4	20	2300	2145	12	10	5095	737.5	24.75	24.81	0.06	
2A-4A-4A-12A	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2300	2145	2	20	900	1960	12	10	5095	737.5	24.42	24.32	-0.10	
2A-4A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	4	20	2050	2120	4	20	2300	2145	24.86	25.06	0.20	
2A-4A-12B	2	5	18625	1862.5	625	1932.5	QPSK	1	0	4	20	2050	2120	12	10	5095	734	12	5	5132	741.2	24.75	24.67	-0.08	
2A-4A-12B	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	12	10	5060	734	12	5	5132	741.2	24.42	24.54	0.12	
2A-4A-12B	12	10	23095	707.5	5095	737.5	QPSK	1	24	12	5	5023	730.3	4	20	2050	2120	4	20	2050	2120	24.86	24.80	-0.06	
2A-66C-71A	2	5	18625	1862.5	625	1932.5	QPSK	1	0	66	20	66786	2165	66	20	66588	2145.2	71	20	66786	637	24.75	24.81	0.06	
2A-66C-71A	66	20	132072	1720	66536	2140	QPSK	1	0	66	20	66734	2159.8	2	20	900	1960	71	20	66786	637	24.34	24.24	-0.10	
2A-66C-71A	71	20	133322	683	68786	637	QPSK	1	0	66	20	66786	2165	66	20	66588	2145.2	2	20	900	1960	24.86	24.72	-0.14	
2A-4A-12B	4	10	20000	1715	2000	2115	QPSK	1	24	66	20	2300	2145	12	10	5090	734	12	5	5132	741.2	24.42	24.34	-0.08	
4A-4A-12B	12	10	23095	707.5	5095	737.5	QPSK	1	24	12	5	5023	730.3	4	20	2050	2120	4	20	2300	2145	24.86	24.84	-0.02	
13A-48A-66B	13	10	23230	782	5230	751	QPSK	1	0	48	20	56207	3646.7	66	15	56786	2165	66	5	66693	2155.7	24.99	24.99	0.00	
13A-48A-66B	66	5	131997	1712.5	66461	2132.5	QPSK	1	0	66	15	66554	2141.8	48	20	56207	3646.7	13	10	5230	751	24.49	24.43	-0.06	
13A-48A-66C	13	10	23230	782	5230	751	QPSK	1	0	48	20	56207	3646.7	66	20	56786	2165	66	20	66588	2145.2	24.99	24.79	-0.20	
13A-48A-66C	66	20	132072	1720	66536	2140	QPSK	1	0	66	20	66734	2159.8	48	20	56207	3646.7	13	10	5230	751	24.34	24.24	-0.10	
25A-41D	25	20	26140	1860	8140	1940	QPSK	1	49	48	20	40620	2593	41	20	40320	2573.2	41	20	40224	2553.4	24.67	24.73	0.06	
25A-41D	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2680.2	41	20	41094	2640.2	25	20	8365	1962.5	24.31	24.39	0.08	
29A-30A-66A-66A	30	5	27735	2312.5	9845	2387.5	QPSK	1	12	66	20	66786	2145	66	20	67236	2190	29	10	9715	722.5	22.87	22.89	0.02	
29A-30A-66A-66A	66	20	132072	1720	66536	2140	QPSK	1	0	66	20	67236	2190	30	10	9820	2355	29	10	9715	722.5	24.34	24.36	0.02	

LTE Down Link 5CA Call Setup

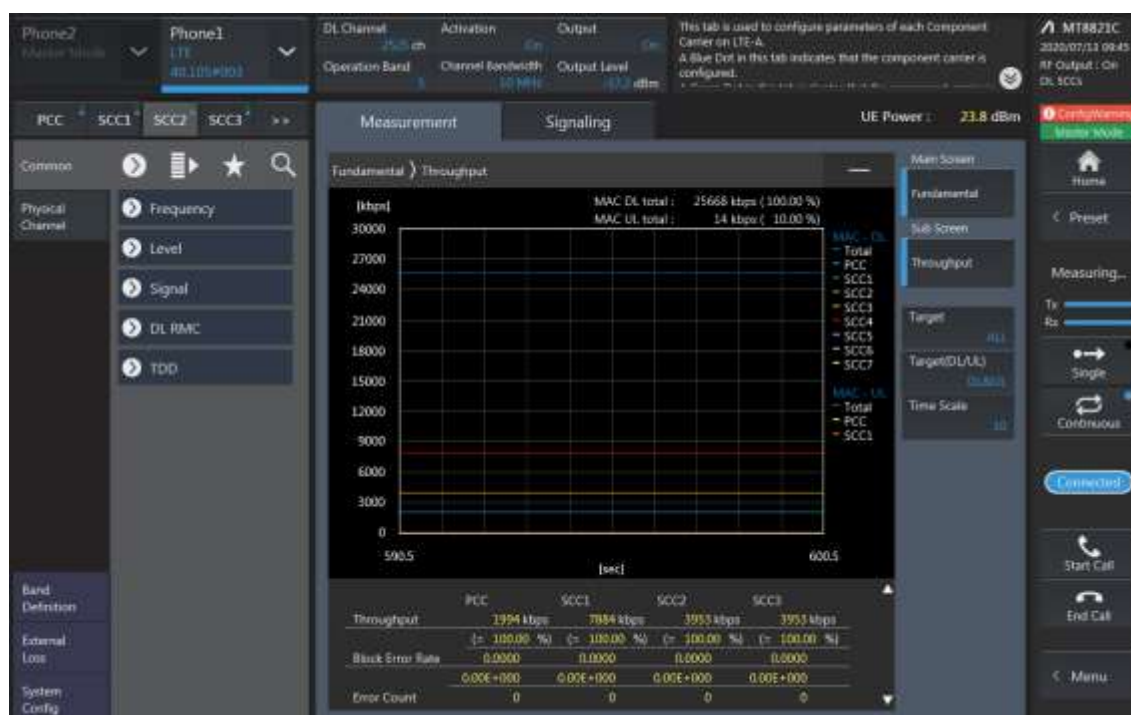
PCC Setting: Channel /RB/BW/Modulation



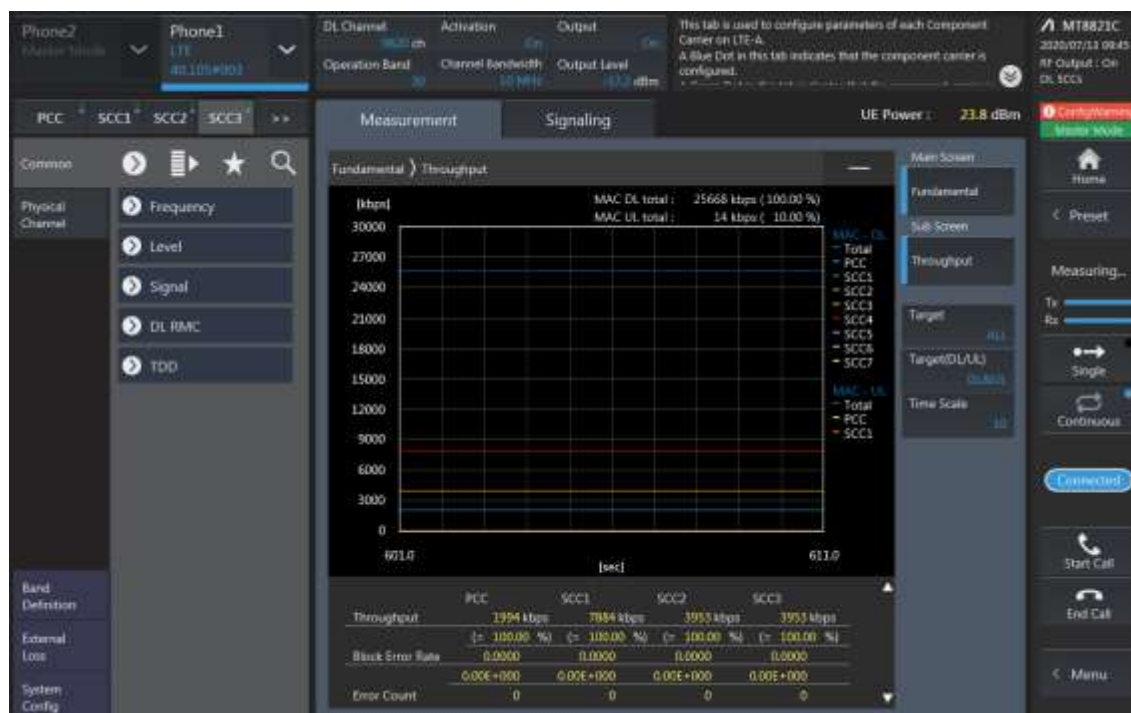
SCC1 Setting (Channel /RB/BW/Modulation)and call Connection



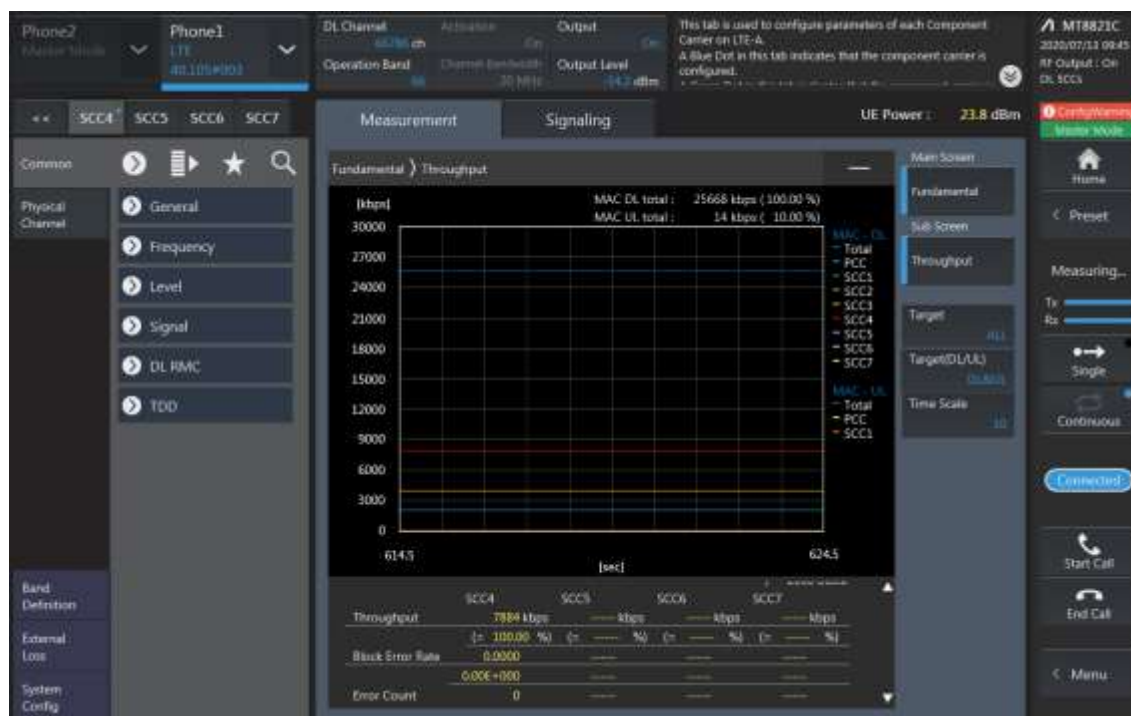
SCC2 Setting (Channel /RB/BW/Modulation)and call Connection



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



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



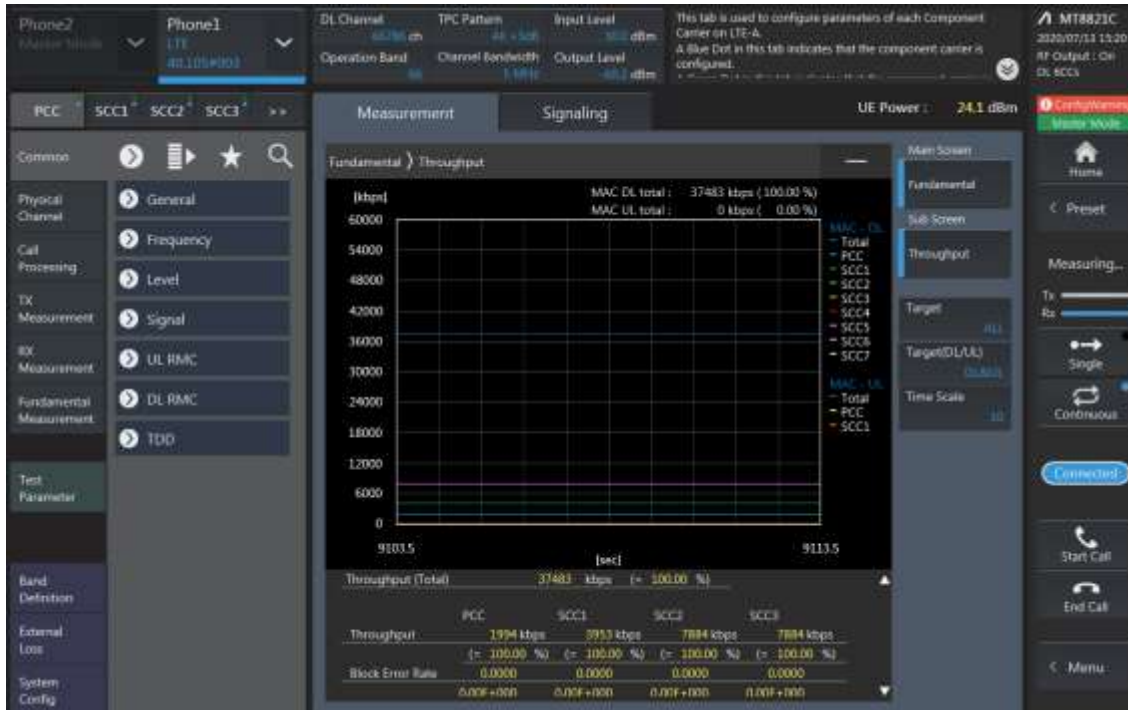


5CA Downlink Carrier aggregation Maximum conducted Powers

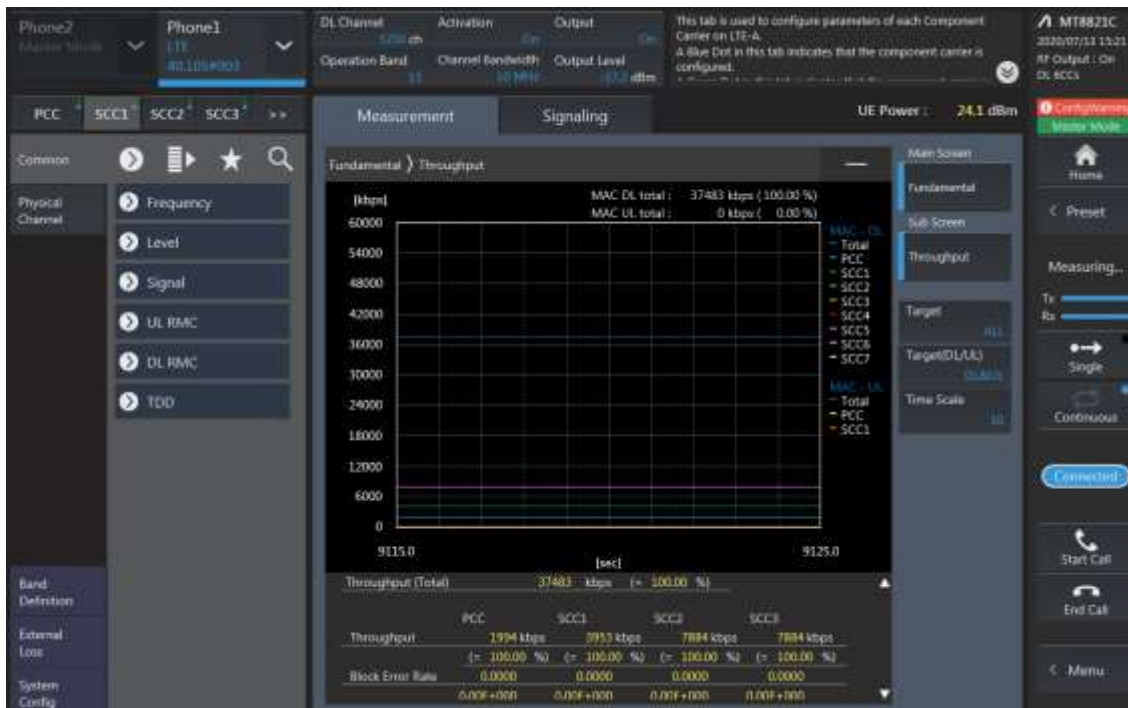
Combination	PCC	Band	BW	PCC UL		PCC DL		Modulation	RB	offset	SCC		SCC		SCC		SCC		Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	Tx Power	
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LTE Down Link 6CA Call Setup

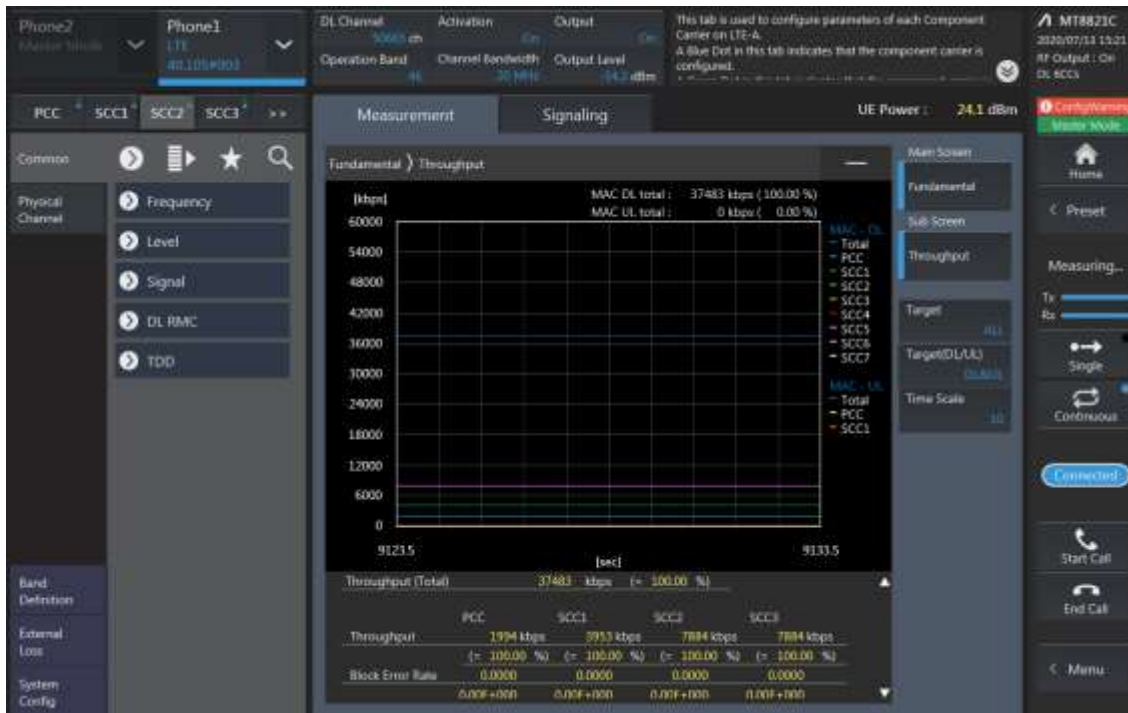
PCC Setting (Channel/ RB/ BW/ Modulation)



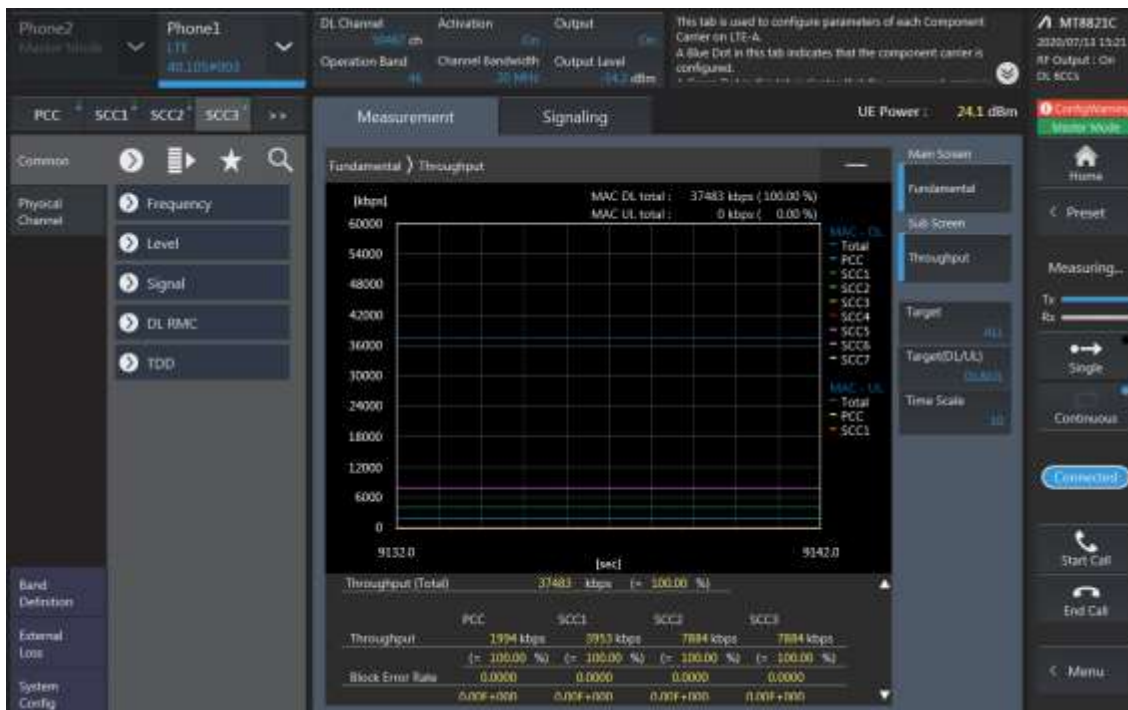
SCC1 Setting (Channel/ RB/ BW/ Modulation) and call Connection



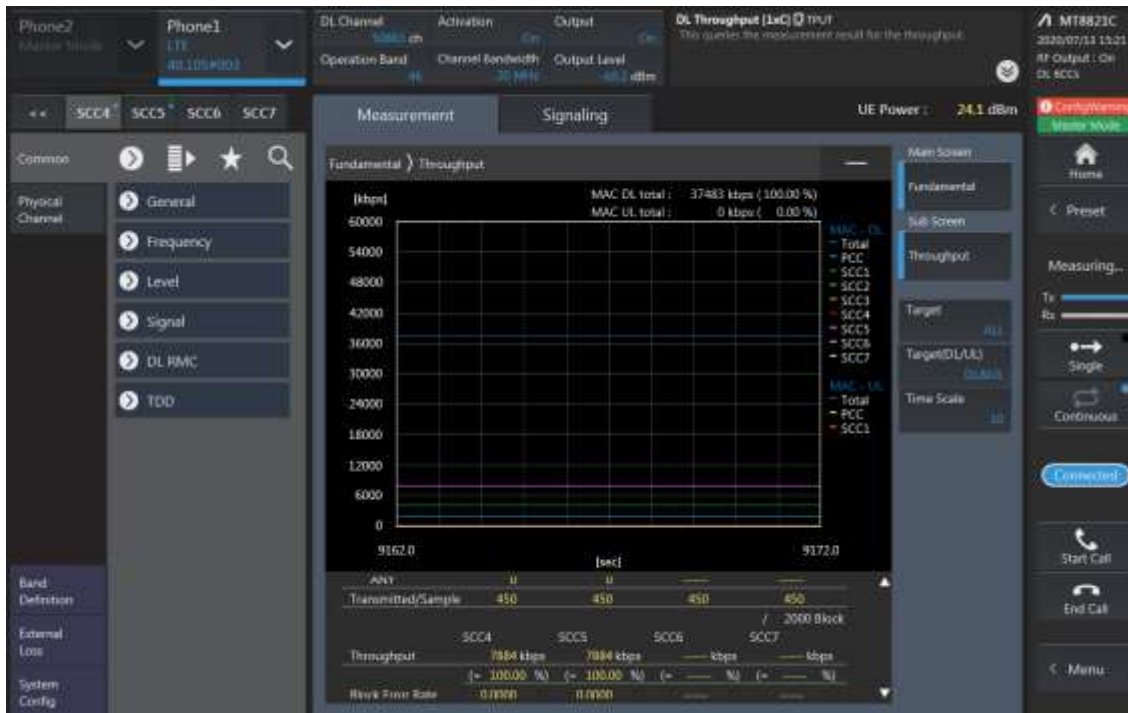
SCC2 Setting (Channel /RB/BW/Modulation) and call Connection



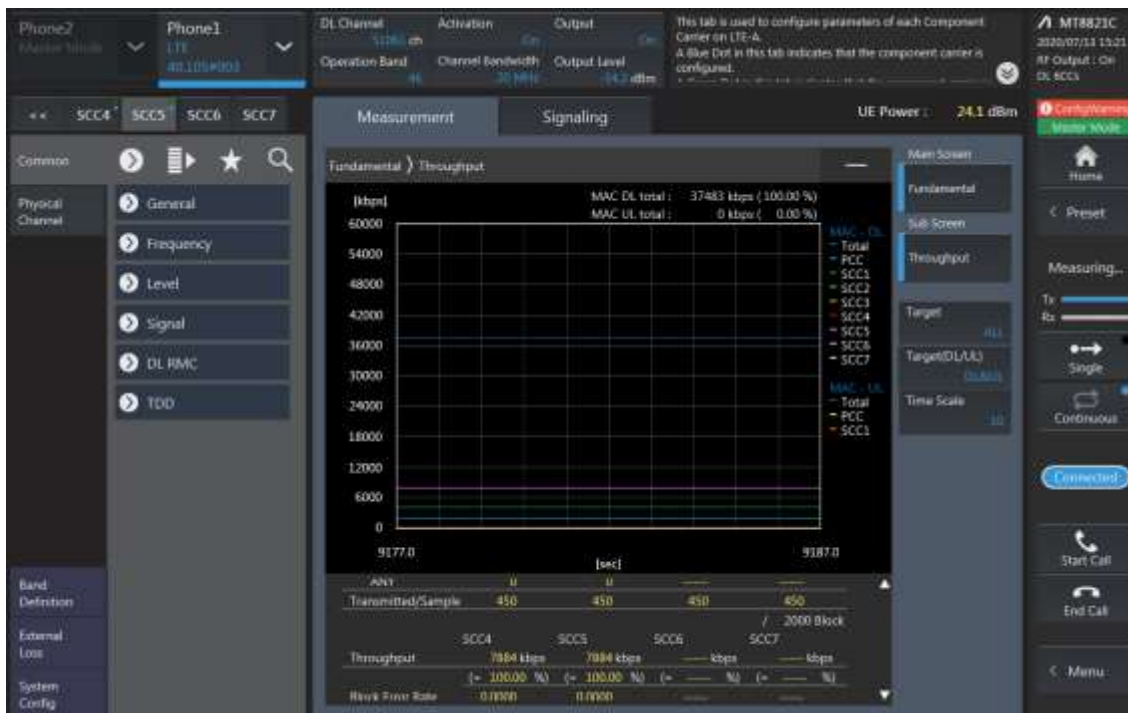
SCC3 Setting (Channel /RB/BW/Modulation) and call Connection



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



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

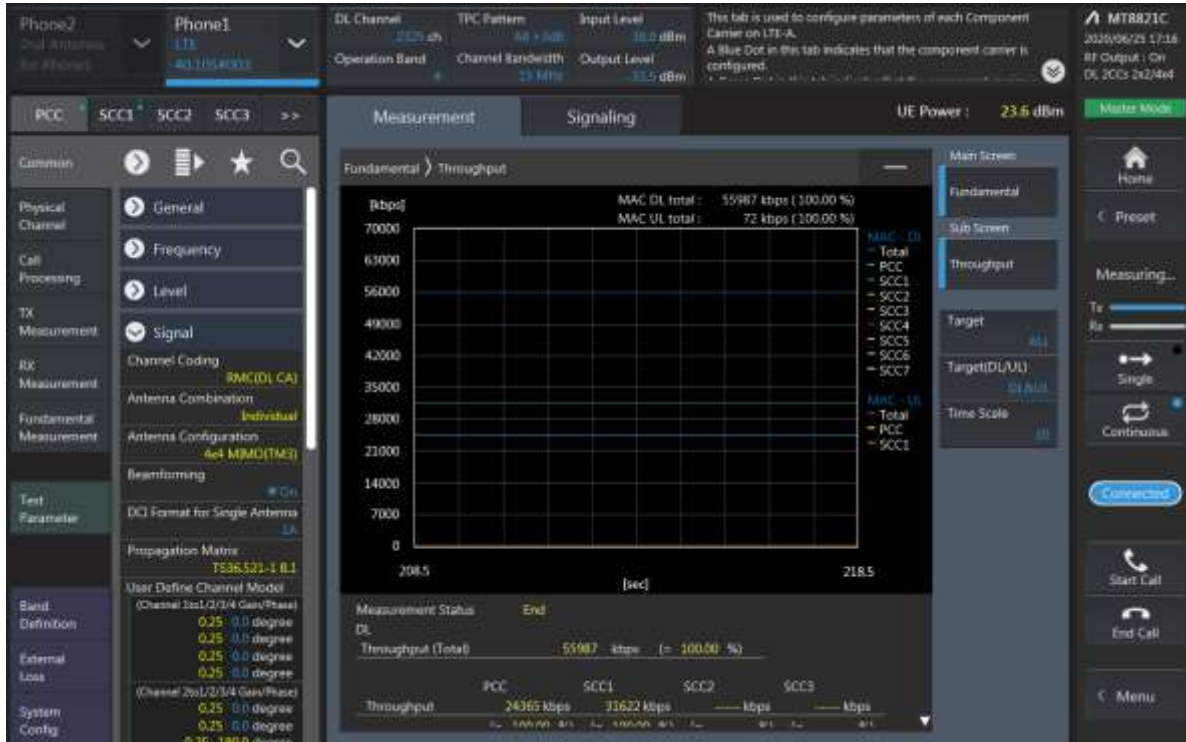


6CA Downlink Carrier aggregation conducted Powers

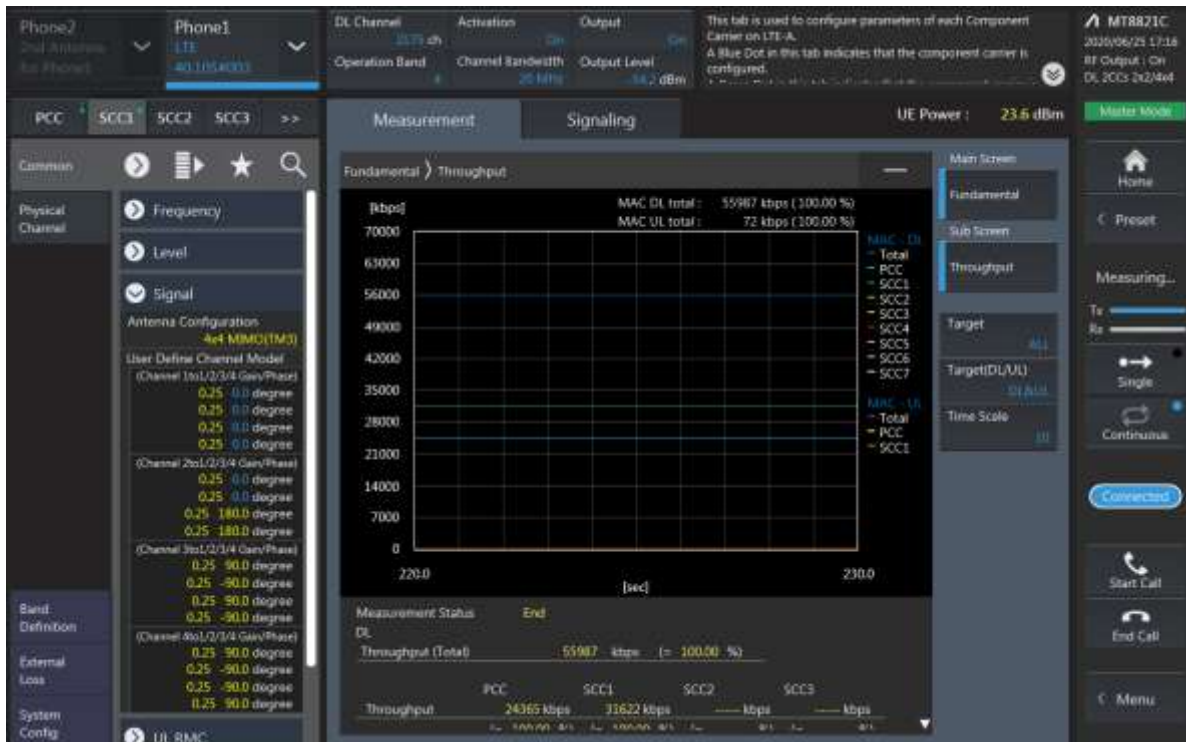
PCC										SCC				SCC				SCC				SCC				Tx Power														
Band	BW	PCC UL Channel	PCC UL Frequency	PCC CL Channel	PCC CL Frequency	Modulation	RS	offset	Band	BW	SCC UL Channel	SCC UL Frequency	Band	BW	SCC UL Channel	SCC UL Frequency	Band	BW	SCC UL Channel	SCC UL Frequency	Band	BW	SCC UL Channel	SCC UL Frequency	Band	BW	SCC UL Channel	SCC UL Frequency	UL Tx Power (dBm) (P _{CC})	UL Tx Power (dBm) (P _{SC})	UL Tx Power (dBm) (P _{SC})									
2	5	18625	1862.5	625	1932.5	QPSK	1	0	8	200	56980	5698.0	2	5	18625	1862.5	8	200	56980	5698.0	2	5	18625	1862.5	8	200	56980	5698.0	66	20	66786	6678.6	24.75	24.75	-0.12					
2	5	18625	1862.5	625	1932.5	QPSK	1	0	8	200	56980	5698.0	2	5	18625	1862.5	8	200	56980	5698.0	2	5	18625	1862.5	8	200	56980	5698.0	66	20	66786	6678.6	66	20	66786	6678.6	24.75	24.75	-0.12	
2	10	12072	1207.2	6636	12140	QPSK	1	0	66	200	67236	6723.6	2	10	12072	1207.2	66	200	67236	6723.6	2	10	12072	1207.2	66	200	67236	6723.6	66	20	67236	6723.6	24.75	24.75	24.75	-0.12				
2	5	18625	1862.5	625	1932.5	QPSK	1	0	48	200	56990	5699.0	2	5	18625	1862.5	48	200	56990	5699.0	2	5	18625	1862.5	48	200	56990	5699.0	66	20	66786	6678.6	66	20	66786	6678.6	24.75	24.75	-0.16	
66	20	12072	1207.2	6636	12140	QPSK	1	0	2	200	800	3900	48	200	56990	5699.0	48	200	56990	5699.0	48	200	56990	5699.0	48	200	56990	5699.0	66	20	66786	6678.6	66	20	66786	6678.6	24.75	24.75	-0.16	
66	20	12072	1207.2	6636	12140	QPSK	1	0	24	66	200	67078	6707.8	66	200	67078	6707.8	66	200	67078	6707.8	66	200	67078	6707.8	66	200	67078	6707.8	66	20	66786	6678.6	66	20	66786	6678.6	24.75	24.75	-0.16
66	20	12072	1207.2	6636	12140	QPSK	1	0	66	200	67236	6723.6	66	200	67236	6723.6	66	200	67236	6723.6	66	200	67236	6723.6	66	200	67236	6723.6	66	20	66786	6678.6	66	20	66786	6678.6	24.75	24.75	-0.16	
13	10	23230	2323.0	757	23300	QPSK	1	0	66	200	67236	6723.6	48	200	56990	5699.0	48	200	56990	5699.0	48	200	56990	5699.0	48	200	56990	5699.0	66	20	66786	6678.6	66	20	66786	6678.6	24.75	24.75	-0.16	
13	10	23230	2323.0	757	23300	QPSK	1	0	66	200	67236	6723.6	48	200	56990	5699.0	48	200	56990	5699.0	48	200	56990	5699.0	48	200	56990	5699.0	66	20	66786	6678.6	66	20	66786	6678.6	24.75	24.75	-0.16	

LTE Down Link 2CA 4x4 MIMO Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation



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

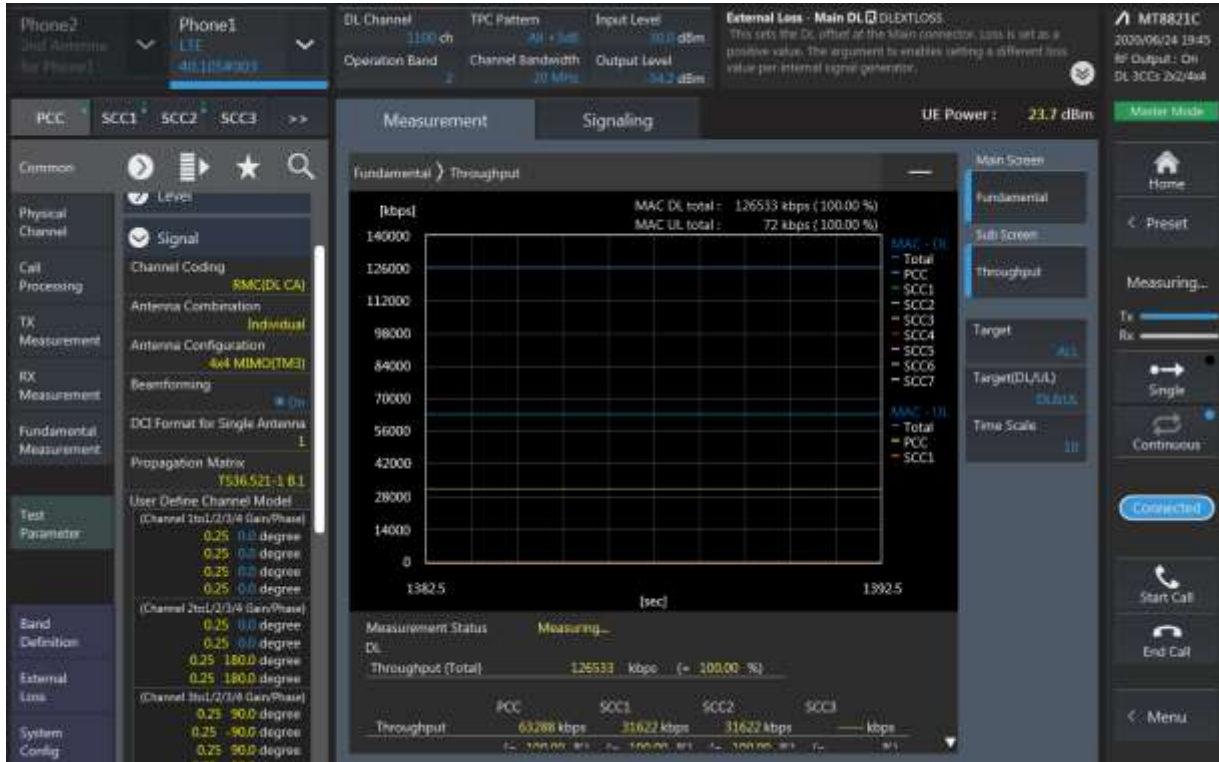


LTE Downlink 2CA 4X4 MIMO Maximum Conducted Power

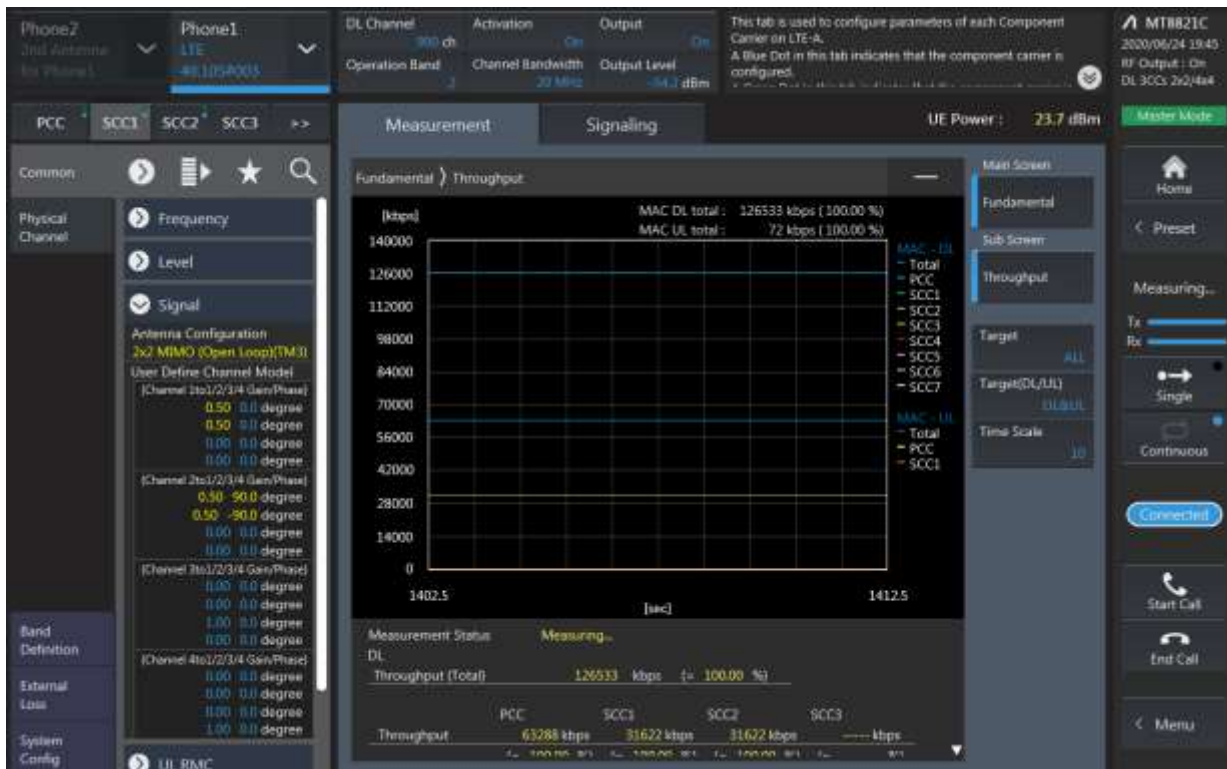
Combination	PCC									SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation (dB) (2)-(1)
5A-[25A]	5	10	20525	836.5	2525	881.5	QPSK	1	24	25	20	8365	1962.5	24.99	25.03	0.04
5A-[25A]	25	20	26140	1860	8140	1940	QPSK	1	49	5	10	2525	881.5	24.65	24.51	-0.14
5A-[41A]	5	10	20525	836.5	2525	881.5	QPSK	1	24	41	20	40620	2593	24.99	24.95	-0.04
12A-[25A]	12	10	23095	707.5	5095	737.5	QPSK	1	24	25	20	8365	1962.5	24.86	24.74	-0.12
12A-[25A]	25	20	26140	1860	8140	1940	QPSK	1	49	12	10	5095	737.5	24.65	24.67	0.02
[25A]-[25A](0)	25	5	26065	1852.5	8065	1932.5	QPSK	1	1	25	10	8640	1990	24.67	24.47	-0.20
[25A]-[25A](1)	25	20	26140	1860	8140	1940	QPSK	1	49	25	20	8590	1985	24.65	24.59	-0.06

LTE Down Link 3CA 4x4 MIMO Call Setup

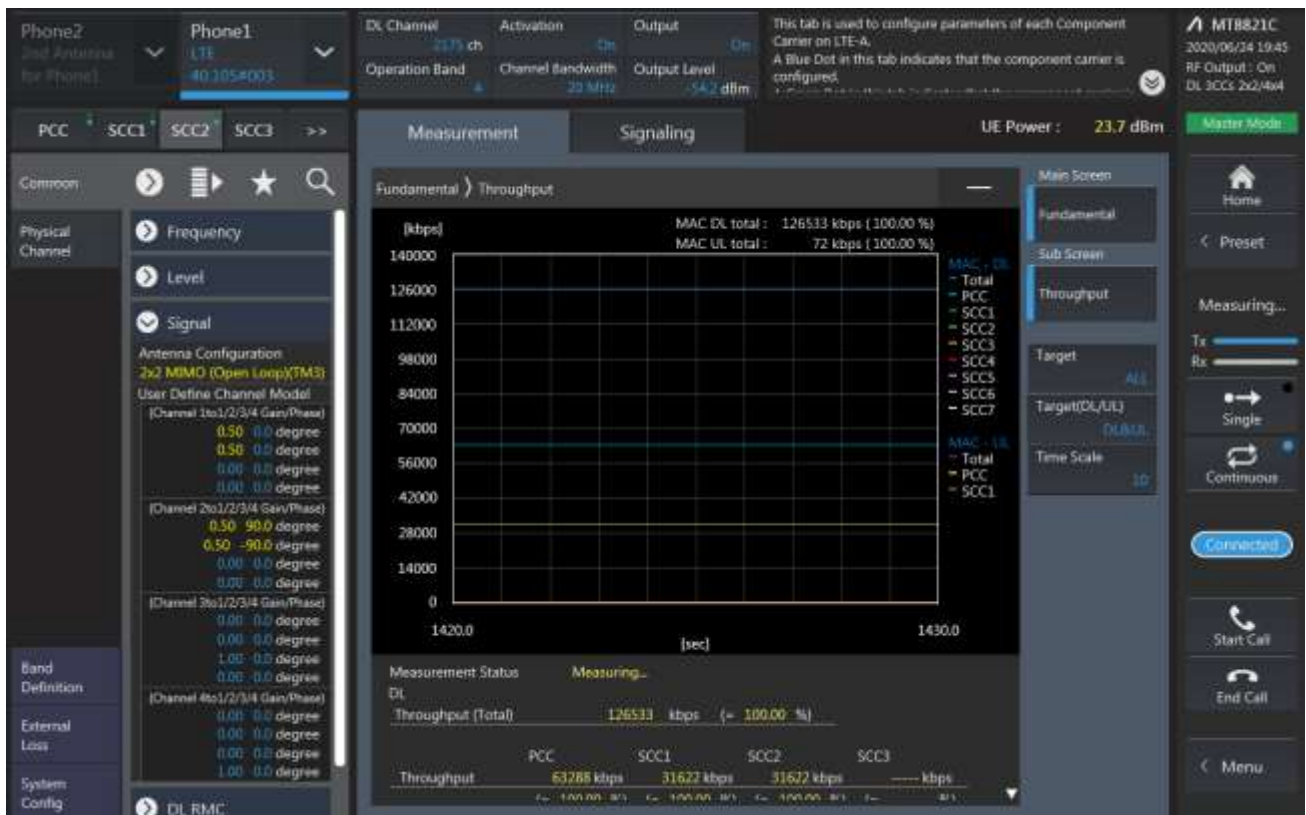
PCC Setting: Channel /RB/BW/Modulation



CC1 Setting : Channel /RB/BW/Modulation



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

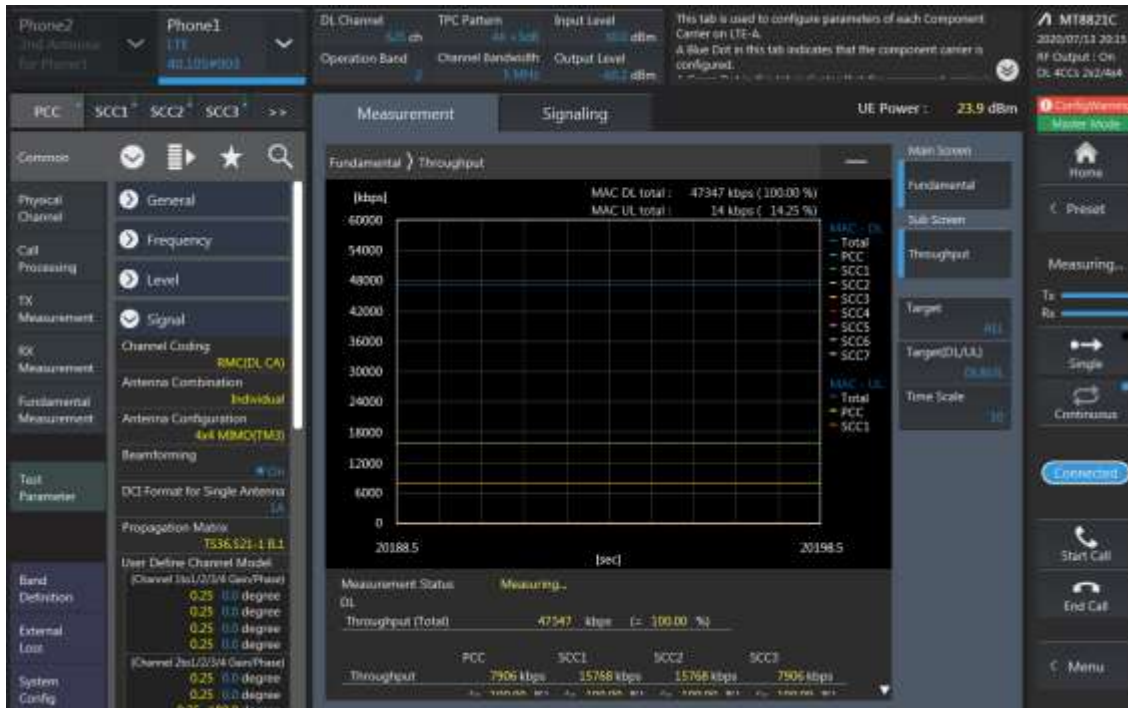


LTE Downlink 3CA 4X4 MIMO Maximum Conducted Power

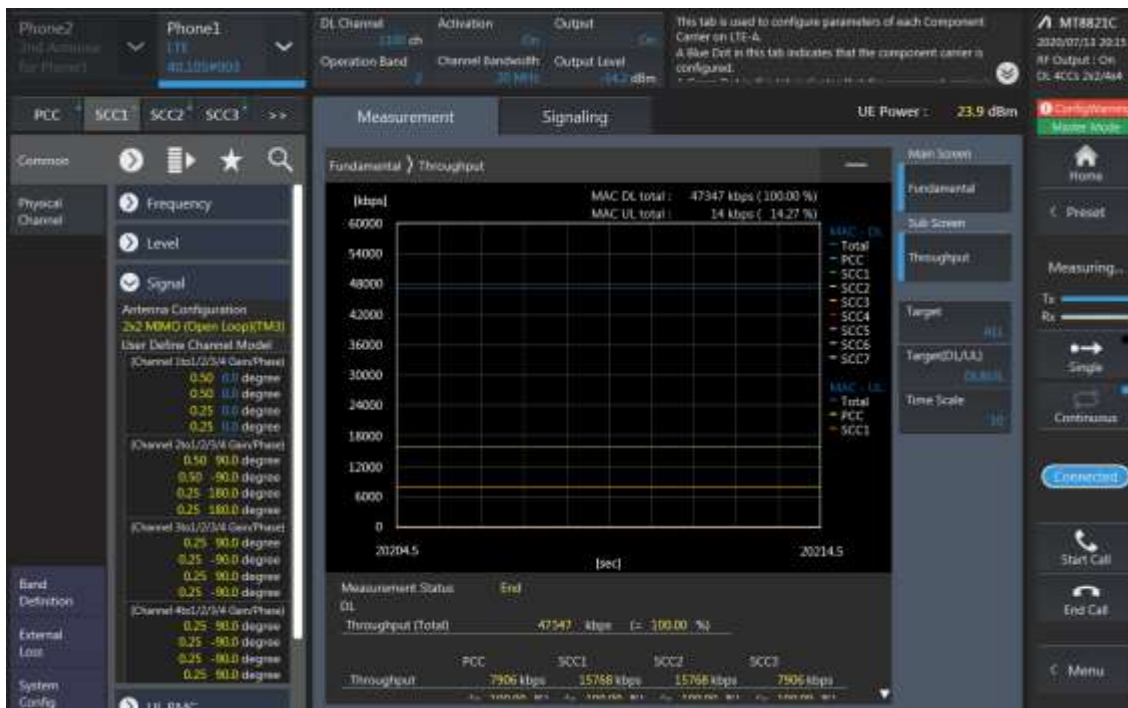
Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation (dB) (2)-(1)
[2A]-[4A]-13A	2	5	18625	1852.5	625	1932.5	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	24.75	24.55	-0.20
[2A]-[4A]-13A	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	13	10	5230	751	24.42	24.40	-0.02
[2A]-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	24.99	25.09	0.10
[2A]-[4A]-[30A]	2	5	18625	1852.5	625	1932.5	QPSK	1	0	4	20	2175	2132.5	30	10	9820	2355	24.75	24.93	0.18
[2A]-[4A]-[30A]	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	30	10	9820	2355	24.42	24.48	0.06
[2A]-[4A]-[30A]	30	5	27735	2312.5	9845	2357.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	22.87	22.75	-0.12
[2A]-[4A]-[30A]	2	5	18625	1852.5	625	1932.5	QPSK	1	0	4	20	2175	2132.5	71	20	68786	637	24.75	24.81	0.06
[2A]-[4A]-71A	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2175	2132.5	2	20	900	1960	24.42	24.56	0.14
[2A]-[4A]-71A	71	20	133322	683	68786	637	QPSK	1	0	4	20	2175	2132.5	2	20	900	1960	24.86	25.00	0.14
[4A]-[4A]-13A(0.1)	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2300	2145	13	10	5230	751	24.42	24.62	0.20
[4A]-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	0	4	20	2175	2132.5	4	20	2300	2145	24.99	24.91	-0.08
[48A]-[48A]-71A	71	20	133322	683	68786	637	QPSK	1	0	48	20	56207	3646.7	48	20	55340	3560	24.86	24.82	-0.04
[48C]-71A	71	20	133322	683	68786	637	QPSK	1	0	48	20	55340	3560	48	20	55538	3579.8	24.86	24.90	0.04

LTE Down Link 4CA 4x4 MIMO Call Setup

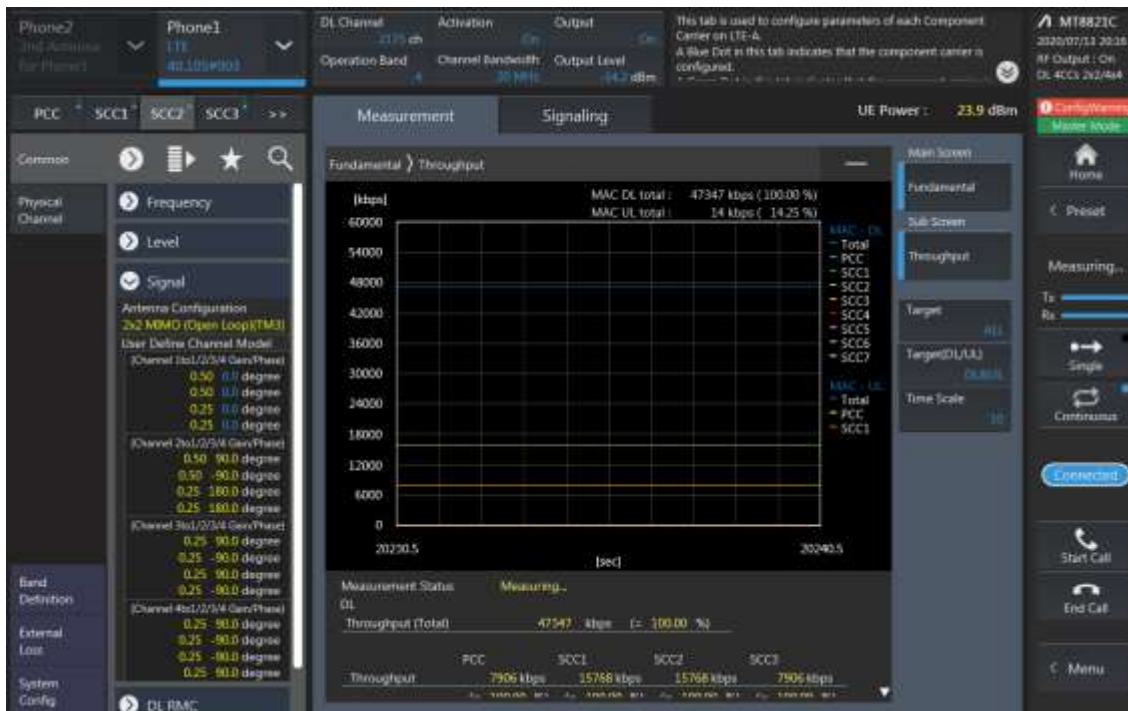
PCC Setting: Channel /RB/BW/Modulation



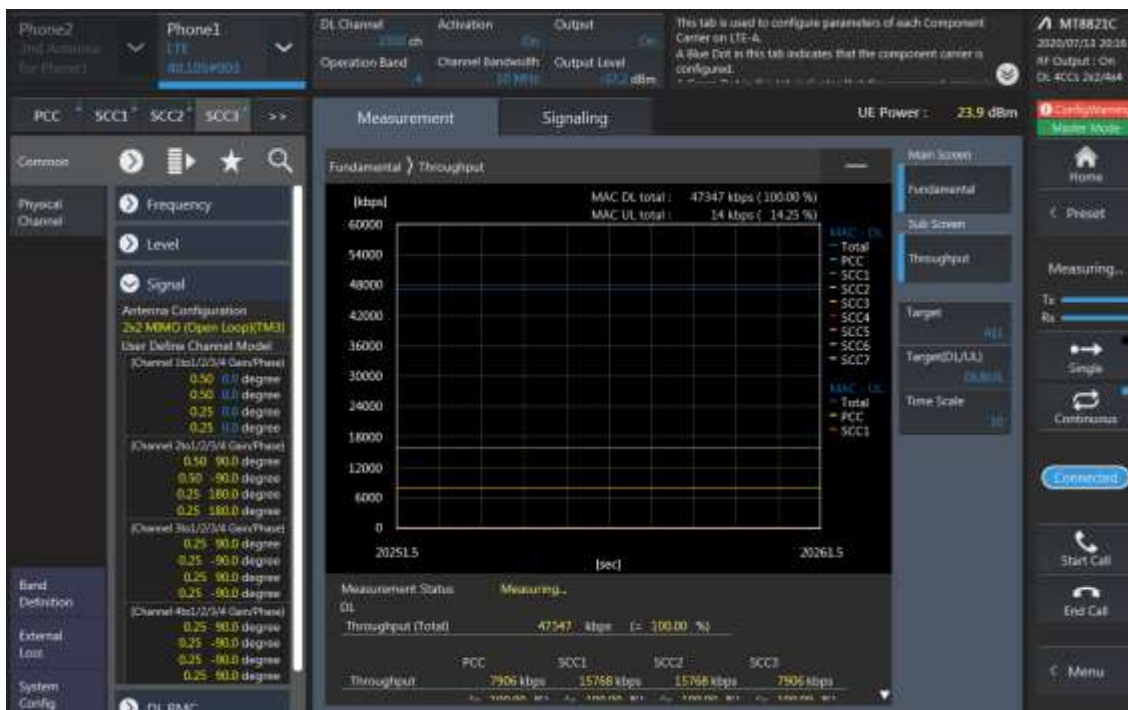
SCC1 Setting : Channel /RB/BW/Modulation



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



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

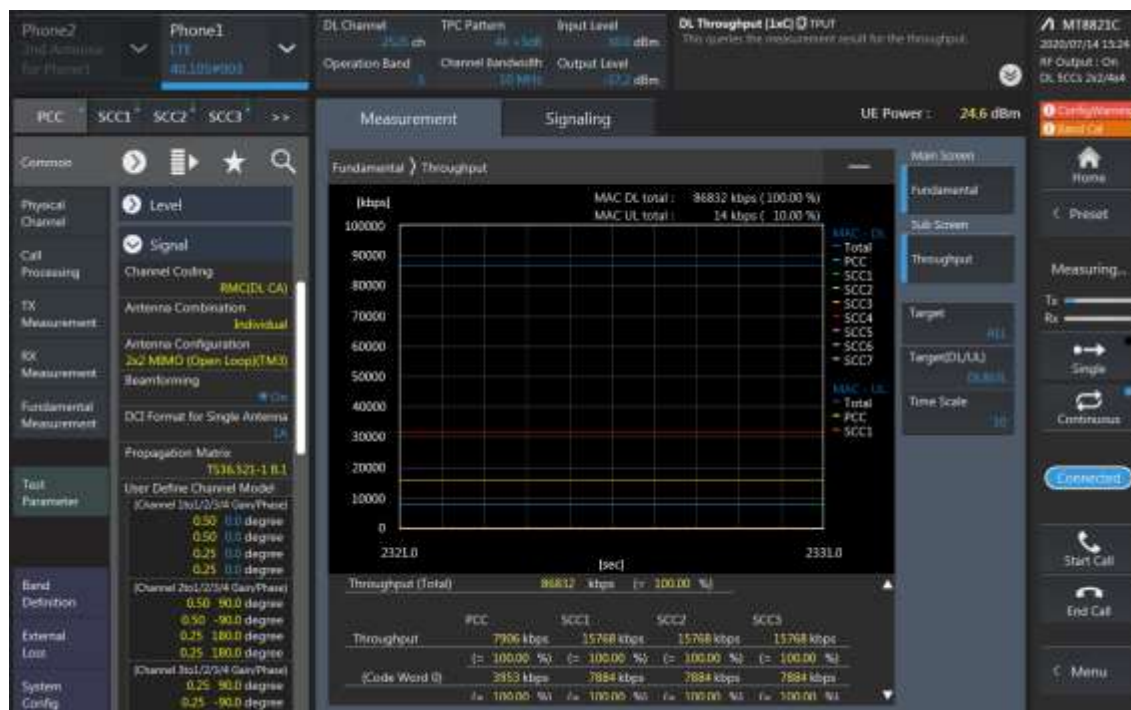


LTE Downlink 4CA 4X4 MIMO Maximum Conducted Power

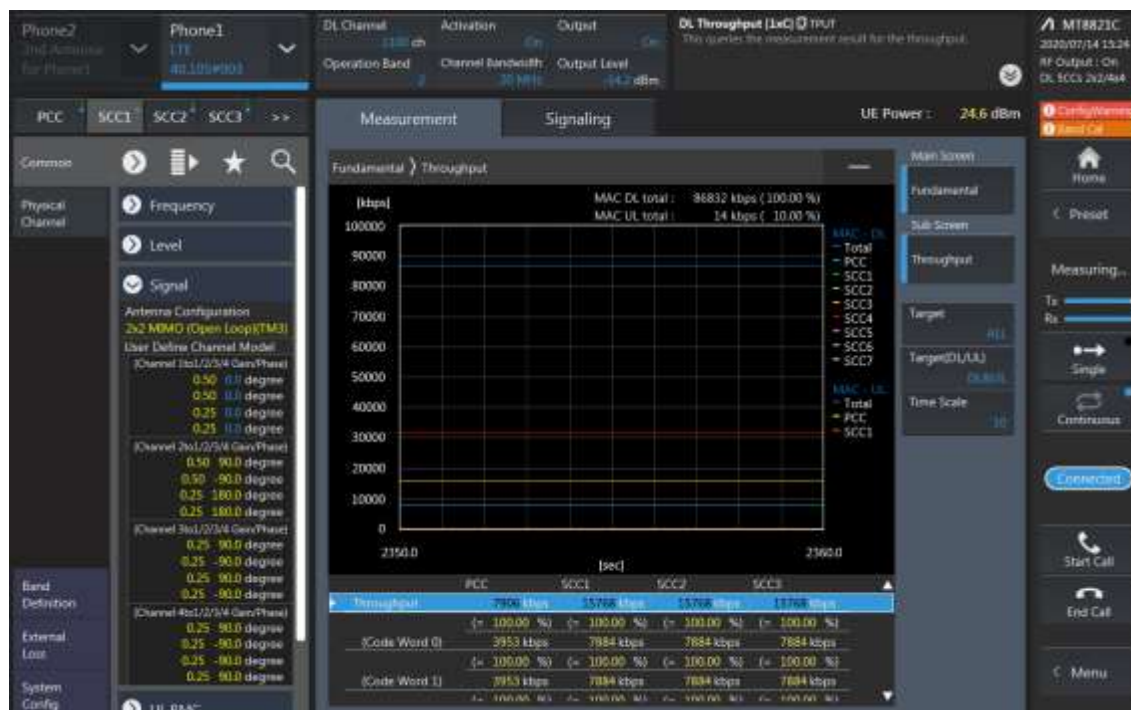
Combination	Band	PCC								SCC				SCC				SCC				Tx Power			
		BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm)	LTE Tx Power with DL CA Exceeding (2) CA	Deviation (dB)	
[2A]-[2A]-[4A]-[4A]	2	5	18625	1862.5	625	1932.5	QPSK	1	0	2	20	1100	1980	4	20	2050	2120	4	20	2300	2145	24.75	24.91	0.16	
[2A]-[2A]-[4A]-[4A]	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2300	2145	2	20	900	1960	2	20	1100	1980	24.42	24.24	-0.18	
[2A]-[2A]-[4A]-[5A]	2	5	18625	1862.5	625	1932.5	QPSK	1	0	2	20	1100	1980	4	20	2050	2120	5	10	2525	881.5	24.75	24.93	0.18	
[2A]-[2A]-[4A]-[5A]	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	24.42	24.28	-0.14	
[2A]-[2A]-[4A]-[5A]	5	10	20525	836.5	2525	881.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	4	20	2050	2120	24.99	25.11	0.12	
[2A]-[2A]-[4A]-[12A]	2	5	18625	1862.5	625	1932.5	QPSK	1	0	2	20	1100	1980	4	20	2050	2120	12	10	5095	737.5	24.75	24.95	0.20	
[2A]-[2A]-[4A]-[12A]	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	2	20	1100	2120	12	10	5095	737.5	24.42	24.62	0.20	
[2A]-[2A]-[4A]-[12A]	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	2120	4	20	2050	2120	24.86	24.96	0.10	
[2A]-[2A]-[66A]-[71A]	2	5	18625	1862.5	625	1932.5	QPSK	1	0	2	20	1100	1980	66	20	66786	2165	71	20	68786	637	24.75	24.89	0.14	
[2A]-[2A]-[66A]-[71A]	66	20	132072	1720	66536	2140	QPSK	1	0	2	20	900	1960	2	20	1100	2120	71	20	68786	637	24.34	24.40	0.06	
[2A]-[2A]-[66A]-[71A]	71	20	133322	683	68786	637	QPSK	1	0	2	20	900	1960	2	20	1100	2120	66	20	66786	2165	2165	24.86	25.04	0.18
[2A]-[4A]-[4A]-[5A]	2	5	18625	1862.5	625	1932.5	QPSK	1	0	4	20	2050	2120	4	20	2300	2145	5	10	2525	881.5	24.75	24.91	0.16	
[2A]-[4A]-[4A]-[5A]	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2300	2145	2	20	900	1960	5	10	2525	881.5	24.42	24.60	0.18	
[2A]-[4A]-[4A]-[5A]	5	10	20525	836.5	2525	881.5	QPSK	1	24	2	20	900	1960	4	20	2050	2120	4	20	2300	2145	24.99	25.07	0.08	
[2A]-[4A]-[4A]-[12A]	2	5	18625	1862.5	625	1932.5	QPSK	1	0	4	20	2050	2120	4	20	2300	2145	12	10	5095	737.5	24.75	24.59	-0.16	
[2A]-[4A]-[4A]-[12A]	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2300	2145	2	20	900	1960	12	10	5095	737.5	24.42	24.36	-0.06	
[2A]-[4A]-[4A]-[12A]	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	4	20	2050	2120	4	20	2300	2145	2145	24.86	24.66	-0.20
[2A]-[4A]-[12B]	2	5	18625	1862.5	625	1932.5	QPSK	1	0	4	20	2050	2120	12	10	5095	734	12	5	5132	741.2	741.2	24.75	24.83	0.08
[2A]-[4A]-[12B]	4	10	20000	1715	2000	2115	QPSK	1	24	2	20	900	1960	12	10	5095	734	12	5	5132	741.2	741.2	24.42	24.44	0.02
[2A]-[4A]-[12B]	12	10	23095	707.5	5095	737.5	QPSK	1	24	12	5	5023	730.3	2	20	900	1960	4	20	2050	2120	2120	24.86	24.66	-0.20
[2A]-[66C]-[71A]	2	5	18625	1862.5	625	1932.5	QPSK	1	0	66	20	66786	2165	66	20	66588	2145.2	71	20	68786	637	24.75	24.93	0.18	
[2A]-[66C]-[71A]	66	20	132072	1720	66536	2140	QPSK	1	0	66	20	66734	2159.8	2	20	900	1960	71	20	68786	637	24.34	24.32	-0.02	
[2A]-[66C]-[71A]	71	20	133322	683	68786	637	QPSK	1	0	66	20	66786	2165	66	20	66588	2145.2	2	20	900	1960	1960	24.86	24.72	-0.14
[4A]-[4A]-[12B]	4	10	20000	1715	2000	2115	QPSK	1	24	4	20	2300	2145	12	10	5095	734	12	5	5132	741.2	741.2	24.42	24.24	-0.18
[4A]-[4A]-[12B]	12	10	23095	707.5	5095	737.5	QPSK	1	24	12	5	5023	730.3	4	20	2050	2120	4	20	2300	2145	2145	24.86	24.72	-0.14
13A-[48A]-[66B]	13	10	23230	782	5230	751	QPSK	1	0	48	20	56207	3646.7	66	15	66786	2165	66	5	66693	2155.7	2155.7	24.99	24.89	-0.10
13A-[48A]-[66B]	66	5	131997	1712.5	66461	2132.5	QPSK	1	0	66	15	66554	2141.8	48	20	56207	3646.7	13	10	5230	751	751	24.49	24.53	0.04
13A-[48A]-[66C]	13	10	23230	782	5230	751	QPSK	1	0	48	20	56207	3646.7	66	20	66786	2165	66	20	66588	2145.2	2145.2	24.99	24.83	-0.16
13A-[48A]-[66C]	66	20	132072	1720	66536	2140	QPSK	1	0	66	20	66734	2159.8	48	20	56207	3646.7	13	10	5230	751	751	24.34	24.50	0.16
[25A]-[41D]	25	20	26140	1860	8140	1940	QPSK	1	49	41	20	40620	2593	41	20	40422	2573.2	41	20	40224	2553.4	2553.4	24.67	24.83	0.16
[25A]-[41D]	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	41094	2640.4	25	20	8365	1962.5	1962.5	24.31	24.39	0.08
29A-[30A]-[66A]-[66A]	30	5	27735	2312.5	9845	2267.5	QPSK	1	12	66	20	66786	2145	66	20	67236	2190	29	10	9715	722.5	722.5	22.67	22.67	-0.20
29A-[30A]-[66A]-[66A]	66	20	132072	1720	66536	2140	QPSK	1	0	66	20	67236	2190	30	10	9820	2355	29	10	9715	722.5	722.5	24.34	24.54	0.20

LTE Down Link 5CA 4x4 MIMO Call Setup

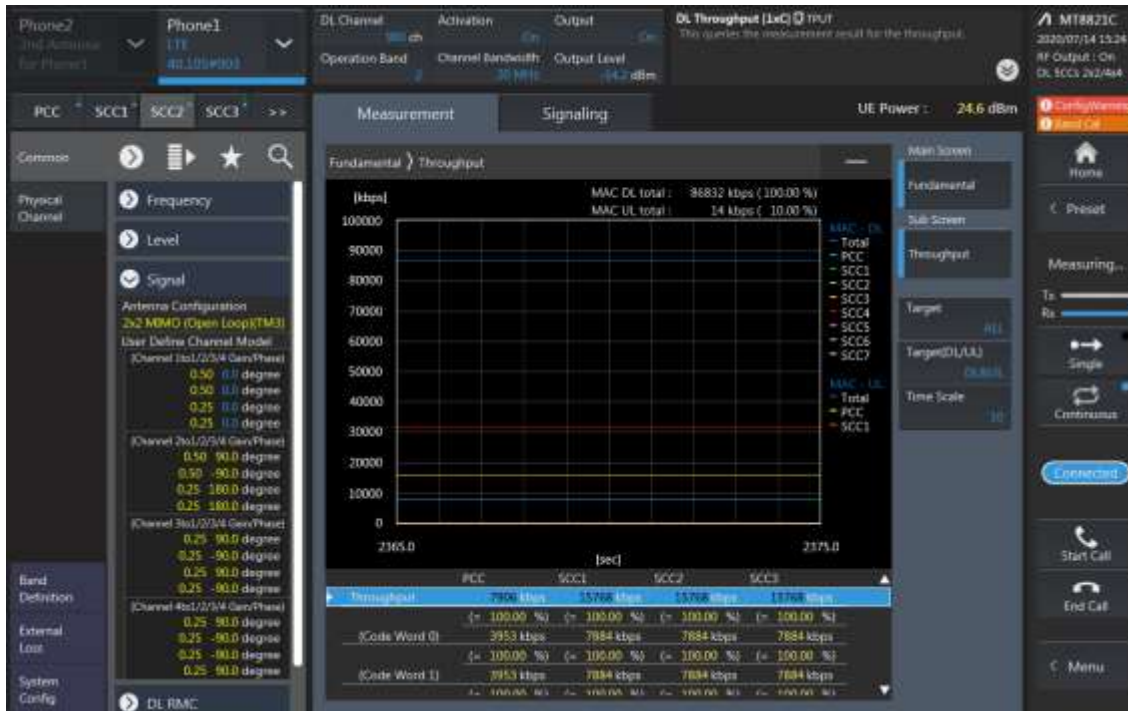
PCC Setting: Channel /RB/BW/Modulation



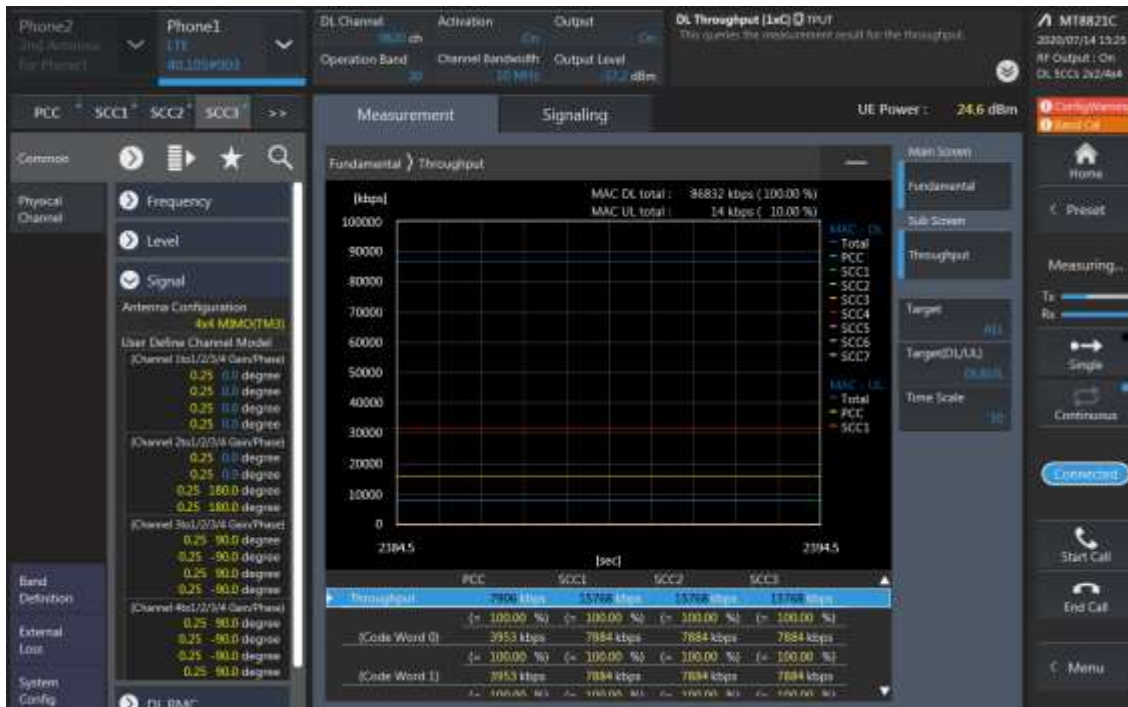
SCC1 Setting : Channel /RB/BW/Modulation



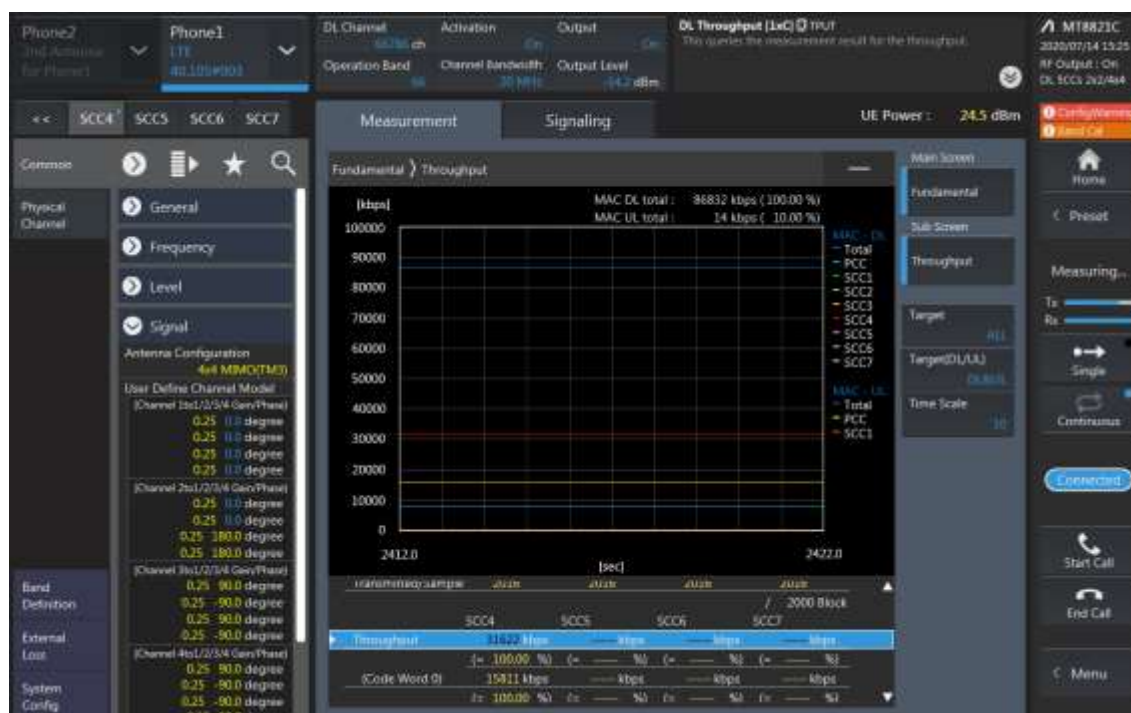
SCC2 Setting (Channel /RB/BW/Modulation) and call Connection



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



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

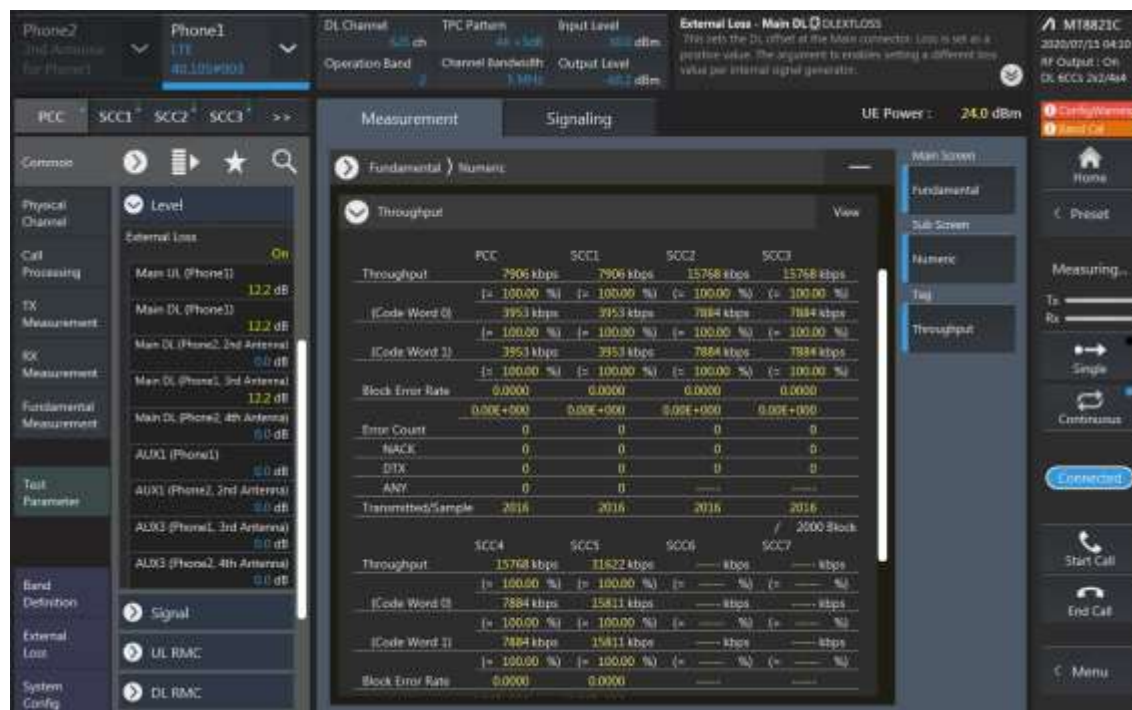


LTE Downlink 5CA 4X4 MIMO Maximum Conducted Power

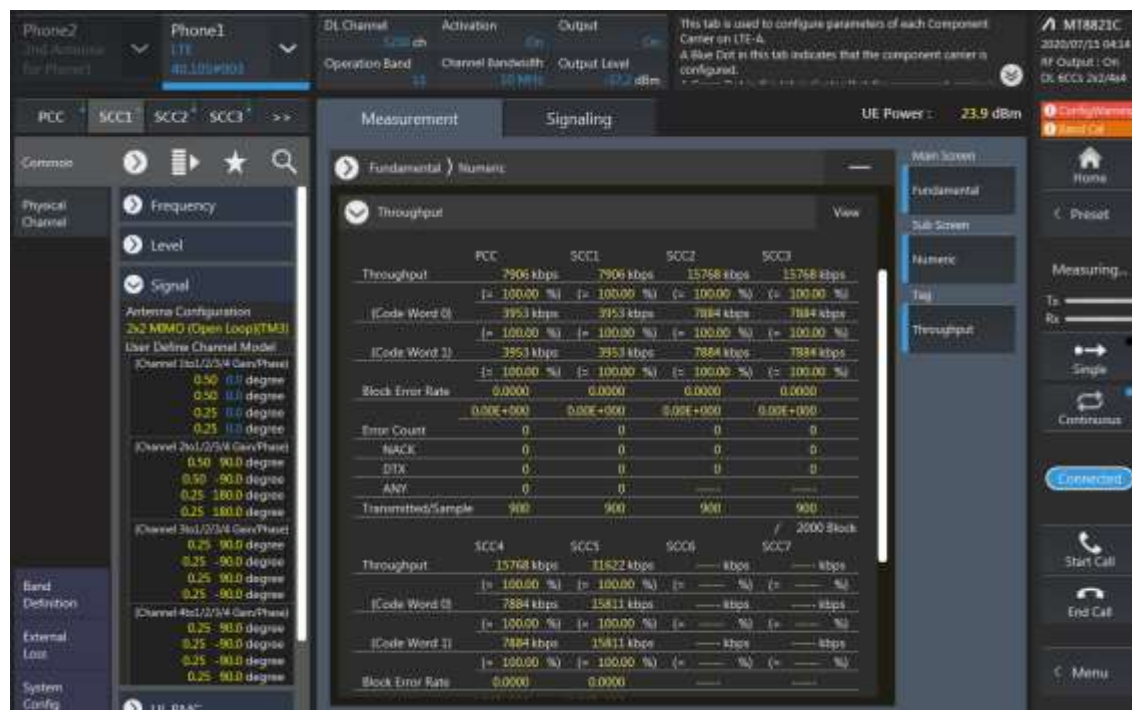
PCC										SCC										Tx Power												
Combination	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	UE-Specific Carrier Tx Power (dBm)	UE-Specific Carrier Tx Power (dBm)	Deviation (dB)
[2A]-[2A]-[5A]-[30A]-[66A]	2	5	18605	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	5	10	2525	881.5	30	10	8620	2365	66	20	66786	2145	24.75	24.77	0.02				
[2A]-[2A]-[5A]-[30A]-[66A]	5	10	20525	836.5	2525	881.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	30	10	8620	2365	66	20	66786	2145	24.69	25.01	0.02				
[2A]-[2A]-[5A]-[30A]-[66A]	30	5	27735	2312.5	8645	2367.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	66	20	66786	2145	22.87	23.01	0.02				
[2A]-[2A]-[5A]-[30A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	2	20	900	1960	2	20	1100	1980	30	10	8620	2365	5	10	2525	881.5	24.34	24.48	0.14				
[2A]-[2A]-[5A]-[66A]	2	5	18605	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	5	10	2525	881.5	66	15	66786	2145	66	5	66693	2156.7	24.75	24.96	-0.12				
[2A]-[2A]-[5A]-[66A]	5	10	20525	836.5	2525	881.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	66	15	66786	2145	66	5	66693	2156.7	24.69	24.96	-0.04				
[2A]-[2A]-[5A]-[66B]	66	5	131997	1712.5	66641	2132.5	QPSK	1	0	66	15	66654	2141.8	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	24.49	24.53	0.04				
[2A]-[2A]-[5A]-[66C]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	5	10	2525	881.5	66	20	66786	2145	66	20	66688	2145.2	24.75	24.93	0.18				
[2A]-[2A]-[5A]-[66C]	5	10	20525	836.5	2525	881.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	66688	2145.2	24.69	25.01	0.02				
[2A]-[2A]-[5A]-[66C]	66	20	132072	1720	66636	2140	QPSK	1	0	66	20	66734	2150.8	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	24.34	24.50	0.16				
[2A]-[2A]-[5A]-[66A]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	5	10	2525	881.5	66	20	66786	2145	66	20	67236	2190	24.75	24.63	-0.12				
[2A]-[2A]-[5A]-[66A]-[66A]	5	10	20525	836.5	2525	881.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	24.69	24.96	-0.04				
[2A]-[2A]-[5A]-[66A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1100	1980	5	10	2525	881.5	24.34	24.14	-0.20				
[2A]-[2A]-[12A]-[30A]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	12	10	5095	737.5	30	10	8620	2365	66	20	66786	2145	24.75	24.93	0.18				
[2A]-[2A]-[12A]-[30A]-[66A]	12	10	23966	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	30	10	8620	2365	66	20	66786	2145	24.86	24.70	-0.16				
[2A]-[2A]-[12A]-[30A]-[66A]	30	5	27735	2312.5	8645	2367.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	66	20	66786	2145	22.87	22.99	0.12				
[2A]-[2A]-[12A]-[30A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	30	10	8620	2365	24.34	24.40	0.06				
[2A]-[2A]-[12B]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	12	10	5060	734	12	5	5132	741.2	66	20	66786	2145	24.75	24.75	0.00				
[2A]-[2A]-[12B]-[66A]	12	10	23966	707.5	5095	737.5	QPSK	1	24	12	5	5023	730.3	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	24.86	25.02	0.16				
[2A]-[2A]-[12B]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	2	20	900	1960	2	20	1100	1980	12	10	5060	734	12	5	5132	741.2	24.34	24.20	-0.14				
[2A]-[2A]-[12A]-[66A]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	12	10	5095	737.5	66	20	66786	2145	66	20	67236	2190	24.75	24.96	-0.20				
[2A]-[2A]-[12A]-[66A]-[66A]	12	10	23966	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	24.86	24.84	-0.02				
[2A]-[2A]-[12A]-[66A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1100	1980	12	10	5095	737.5	24.34	24.46	0.12				
[2A]-[2A]-[13A]-[66A]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	13	10	5230	751	66	20	66786	2145	66	20	67236	2190	24.75	24.81	0.06				
[2A]-[2A]-[13A]-[66A]-[66A]	13	10	23230	762	5230	751	QPSK	1	0	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	24.69	25.13	0.14				
[2A]-[2A]-[13A]-[66A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	66	20	67236	2190	2	20	900	1960	2	20	1100	1980	13	10	5230	751	24.34	24.54	0.20				
[2A]-[2A]-[14A]-[30A]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	14	10	5330	763	30	10	8620	2365	66	20	66786	2145	24.75	24.67	-0.08				
[2A]-[2A]-[14A]-[30A]-[66A]	14	10	23230	753	5330	763	QPSK	1	0	2	20	900	1960	2	20	1100	1980	30	10	8620	2365	66	20	66786	2145	24.83	24.99	0.06				
[2A]-[2A]-[14A]-[30A]-[66A]	30	5	27735	2312.5	8645	2367.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	14	10	5330	763	66	20	66786	2145	22.87	22.91	0.04				
[2A]-[2A]-[14A]-[30A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	2	20	900	1960	2	20	1100	1980	14	10	5330	763	66	20	67236	2190	24.34	24.40	0.06				
[2A]-[2A]-[14A]-[66A]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	14	10	5330	763	66	20	66786	2145	66	20	67236	2190	24.75	24.87	0.12				
[2A]-[2A]-[14A]-[66A]-[66A]	14	10	23230	753	5330	763	QPSK	1	0	2	20	900	1960	2	20	1100	1980	66	20	66786	2145	66	20	67236	2190	24.83	24.73	-0.10				
[2A]-[2A]-[14A]-[66A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	66	20	67236	2190	14	10	5330	763	2	20	900	1960	2	20	1100	1980	24.34	24.16	-0.18				
[2A]-[2A]-[29A]-[30A]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	29	10	8715	722.5	30	10	8620	2365	66	20	66786	2145	24.75	24.65	-0.10				
[2A]-[2A]-[29A]-[30A]-[66A]	30	5	27735	2312.5	8645	2367.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	29	10	8715	722.5	66	20	66786	2145	22.87	23.01	0.14				
[2A]-[2A]-[29A]-[30A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	2	20	900	1960	2	20	1100	1980	29	10	8715	722.5	30	10	8620	2365	24.34	24.32	-0.02				
[2A]-[2A]-[29A]-[66A]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	2	20	1100	1980	29	10	8715	722.5	66	20	66786	2145	66	20	67236	2190	24.75	24.67	-0.08				
[2A]-[2A]-[29A]-[66A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	66	20	67236	2190	29	10	8715	722.5	2	20	900	1960	2	20	1100	1980	24.34	24.46	0.12				
[2A]-[5A]-[30A]-[66A]-[66A]	2	5	18625	1862.5	629	1932.5	QPSK	1	0	5	10	2525	881.5	30	10	8620	2365	66	20	66786	2145	66	20	67236	2190	24.75	24.65	-0.10				
[2A]-[5A]-[30A]-[66A]-[66A]	5	10	20525	836.5	2525	881.5	QPSK	1	24	2	20	900	1960	30	10	8620	2365	66	20	66786	2145	66	20	67236	2190	24.69	25.13	0.14				
[2A]-[5A]-[30A]-[66A]-[66A]	30	5	27735	2312.5	8645	2367.5	QPSK	1	12	2	20	900	1960	5	10	2525	881.5	66	20	66786	2145	66	20	67236	2190	22.87	22.81	-0.06				
[2A]-[5A]-[30A]-[66A]-[66A]	66	20	132072	1720	66636	2140	QPSK	1	0	66	20	67236	2190	2	20	900	1960	5	10	2525	881.5											

LTE Down Link 6CA 4x4 MIMO Call Setup

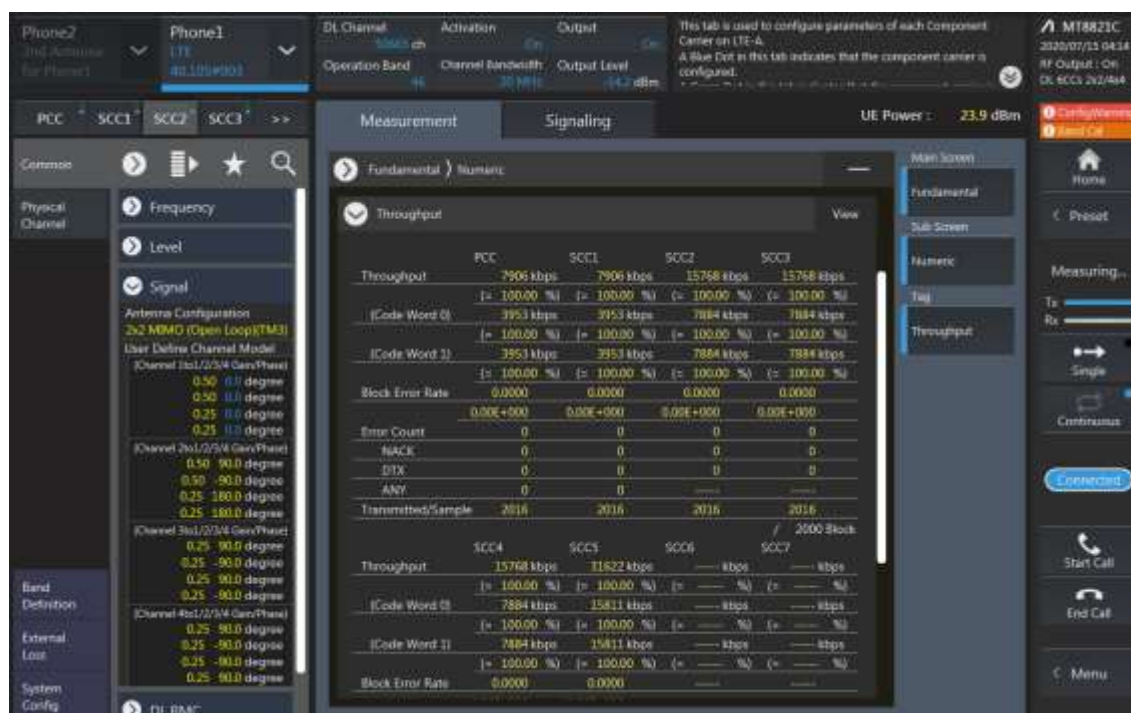
PCC Setting (Channel/ RB/ BW/ Modulation)



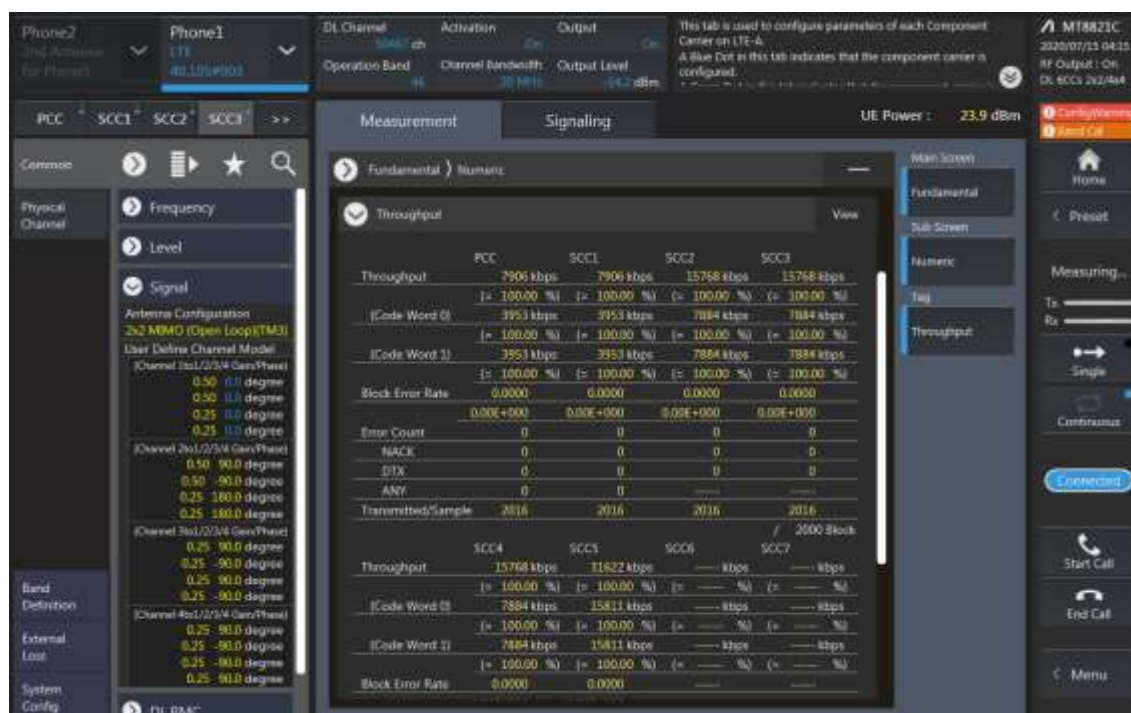
SCC1 Setting (Channel/ RB/ BW/ Modulation) and call Connection



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

The screenshot displays the SCC4 configuration interface. The left sidebar shows the 'Signal' tab selected under 'Antenna Configuration'. The main area shows the 'Measurement' tab with 'Throughput' selected. The 'Signal' configuration includes '2x2 MIMO (Open Loop/TM3)' and 'User Define Channel Model'. The 'Measurement' results show throughput for PCC, SCC1, SCC2, and SCC3, along with Block Error Rate, Error Count, NACK, and DTN. The 'UE Power' is 23.9 dBm.

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
DTN	0	0	0	0
Transmitted/Sample	1818	1818	1818	1818

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

The screenshot displays the SCC5 configuration interface. The left sidebar shows the 'Signal' tab selected under 'Antenna Configuration'. The main area shows the 'Measurement' tab with 'Throughput' selected. The 'Signal' configuration includes '4x4 MIMO (TM3)' and 'User Define Channel Model'. The 'Measurement' results show throughput for PCC, SCC1, SCC2, and SCC3, along with Block Error Rate, Error Count, NACK, and DTN. The 'UE Power' is 23.9 dBm.

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
DTN	0	0	0	0
Transmitted/Sample	2016	2016	2016	2016

LTE Downlink 6CA 4X4 MIMO Maximum Conducted Power

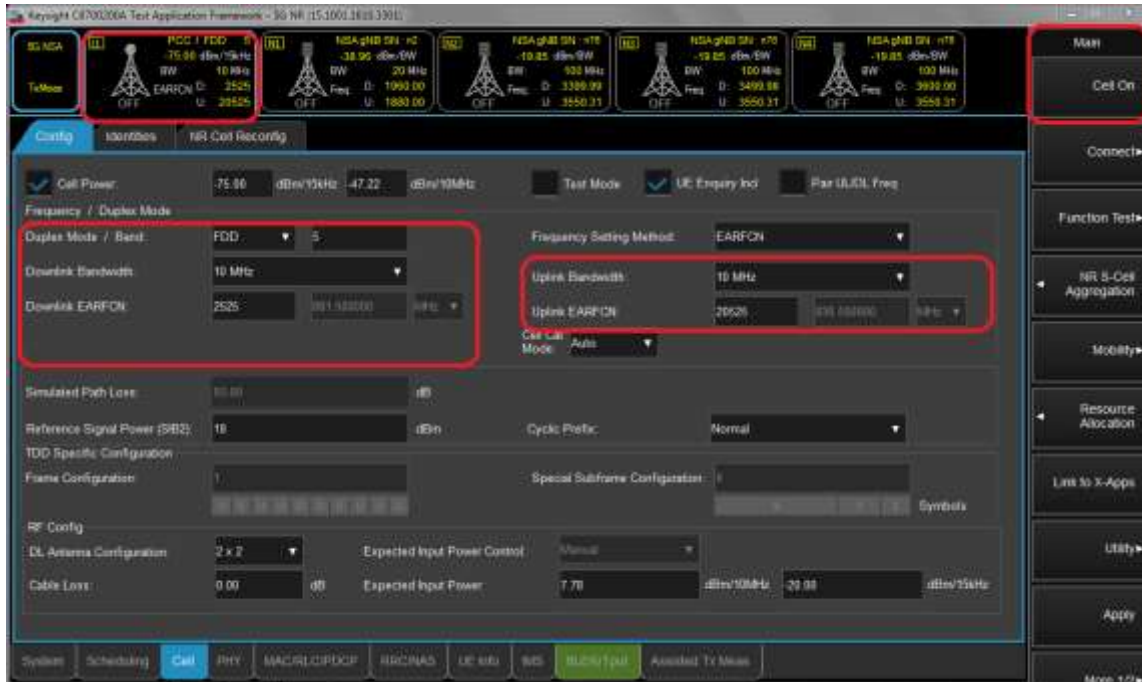
Combination	RCC																T-Param							
	BWR								SCC								Thermal							
	Band	BWR	RCC Channel	RCC/L Channel	RCC/D Channel	Moderation	RIS	off	Band	BWR	RCC Channel	RCC/L Channel	RCC/D Channel	Moderation	RIS	off	SCC Channel	SCC/L Channel	SCC/D Channel	Thermal				
A3-A4-66A1-(66A)-(66A)	2	5	13625	1852.5	635	1192.9	QPSK	1	0	5	10	2625	3613	48	20	59990	3620	48	20	66786	2145	24.75	24.65	0.10
A3-A4-66A1-(66A)-(66A)	2	5	13625	1852.5	635	1192.9	QPSK	1	0	5	10	2625	3613	48	20	59990	3620	48	20	66786	2145	24.75	24.65	0.10
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
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A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
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A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
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A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140	QPSK	1	0	66	20	6730	2190	66	20	1905	3620	48	20	66188	364.8	24.75	24.54	0.21
A3-A4-66A1-(66A)-(66A)	66	10	13302	1720	663.8	1140</																		

2. 5G NR Call Box Setup

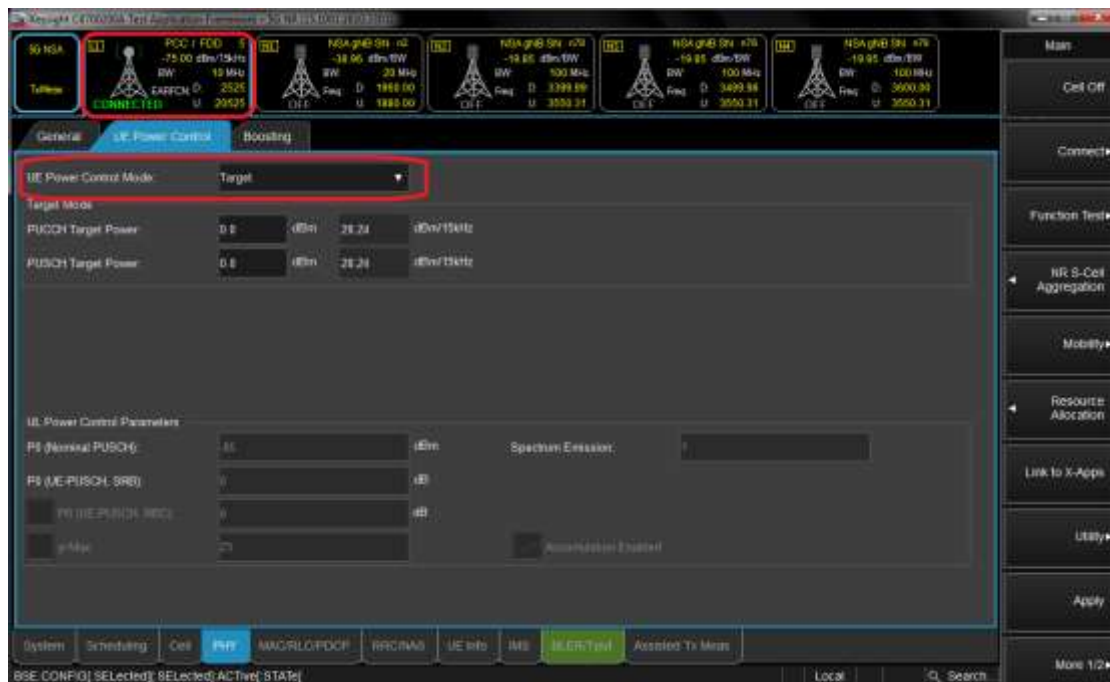
Procedure used to establish output Power measurement for NR Bands

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.

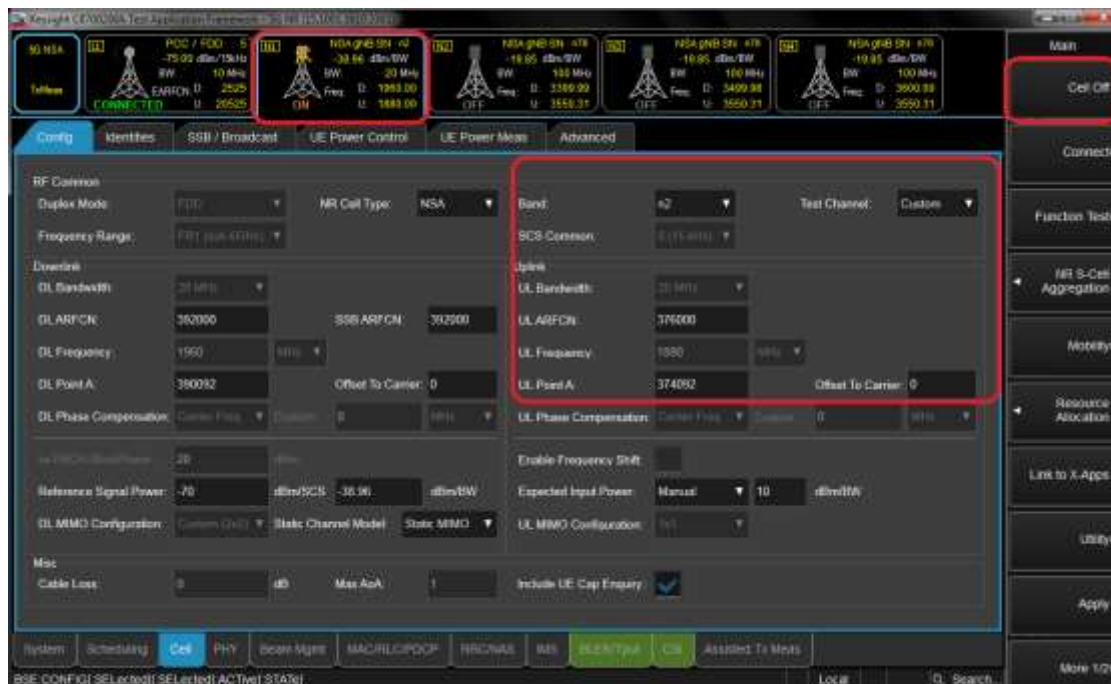


Setup for NR Band

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

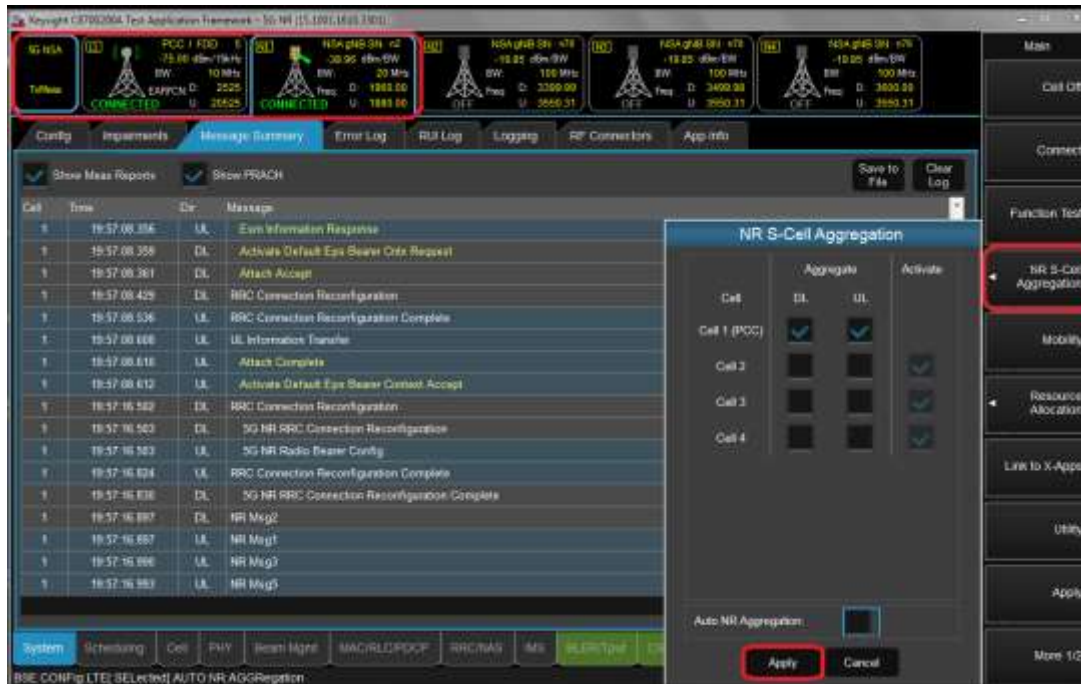


- Select operating band, BW, SCS and Channel.
- Turn the NR Cell On using “ON/OFF” Key.



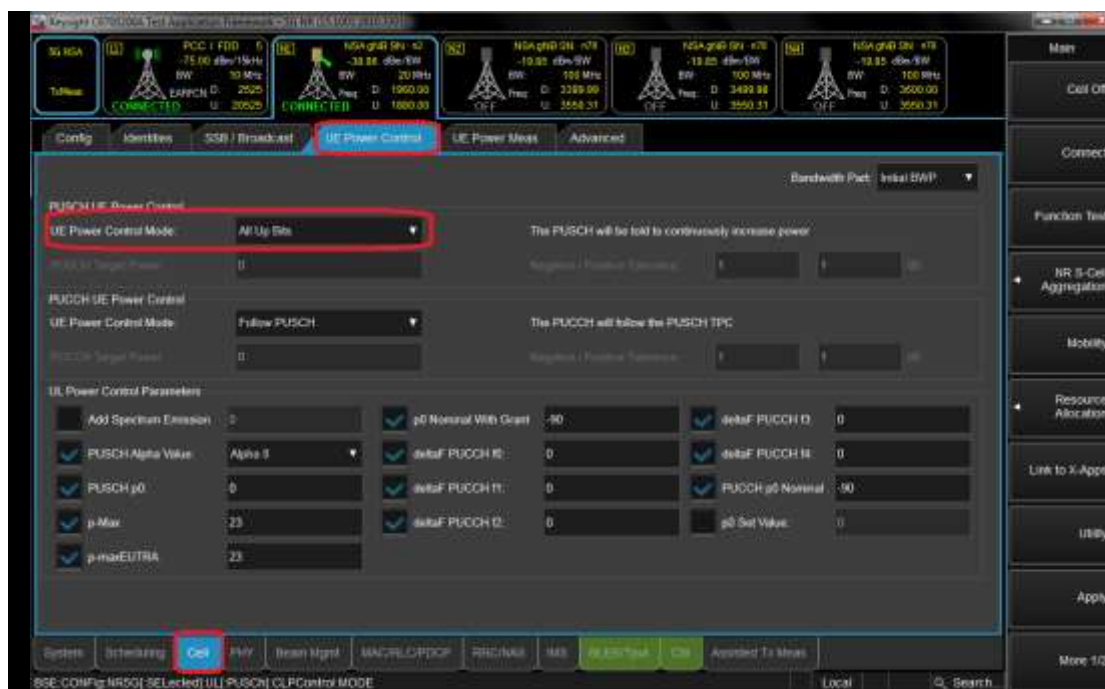
Connect NR S-Cell Aggregation

- Click NR S-Cell Aggregation
- Check the Cell 1's DL and UL box(PCC) and then 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".

