

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:

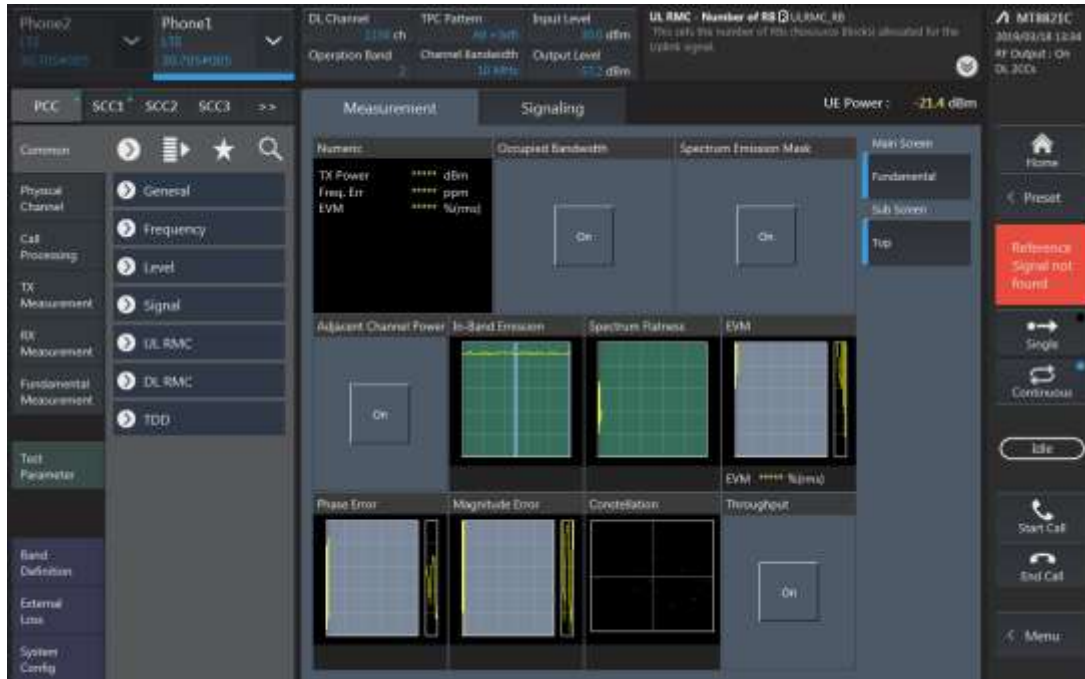
1. This device only supports downlink carrier aggregation. For every supported combination of downlink carrier aggregation, power measurements were performed with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation 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 C3)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.



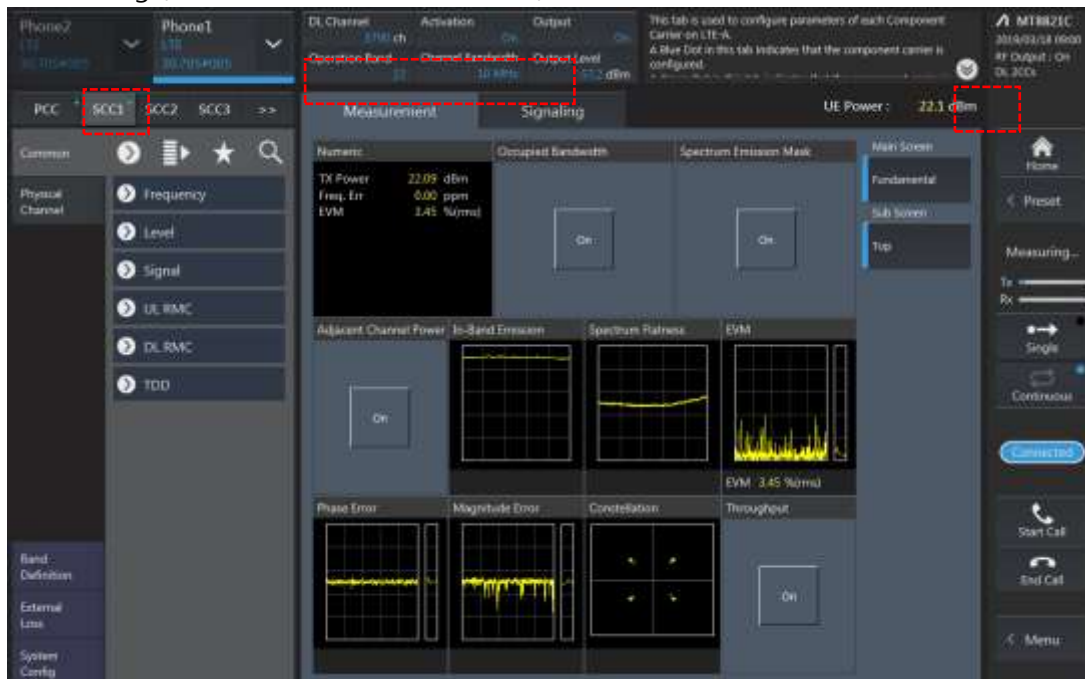
Power Measurement setup

LTE Down Link 2CA Call Setup

PCC Setting (Channel/ RB/ BW/ Modulation)



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

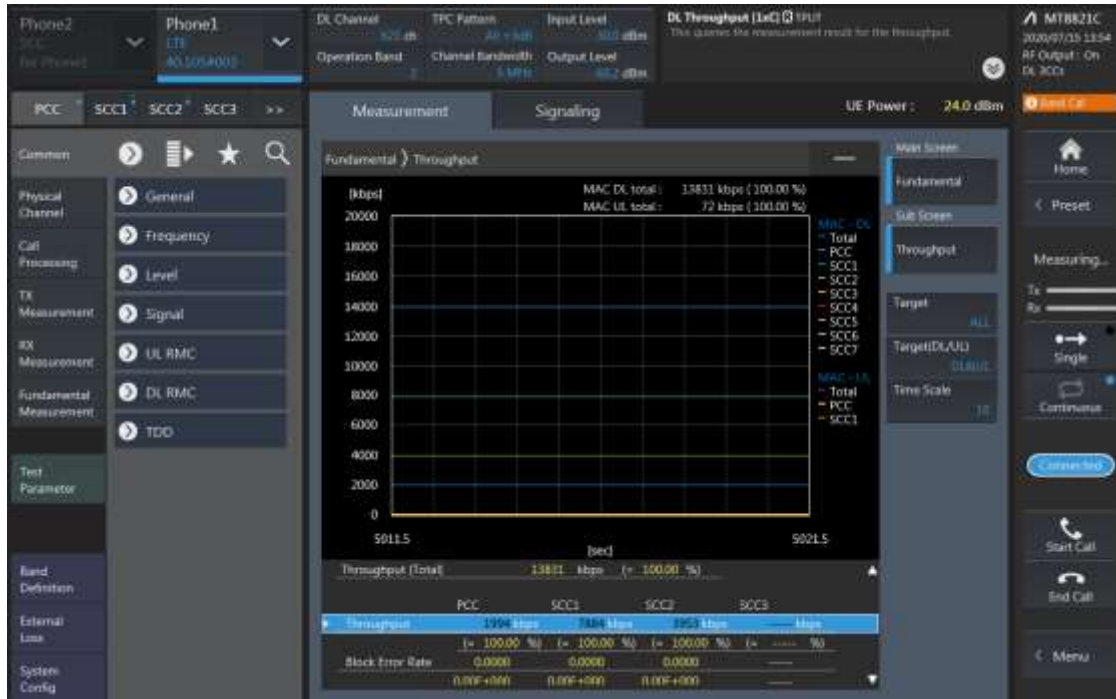


2CA Downlink Carrier aggregation Maximum conducted Powers

Combination	PCC									SCC				Tx Power		Deviaion (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)	
2A-2A	2	10	19150	1905	1150	1985	QPSK	1	0	2	20	700	1940	22.36	22.33	-0.03
2C	2	10	19150	1905	1150	1985	QPSK	1	0	2	20	1106	1970.6	22.36	22.32	-0.04
2A-12A(0,1,2)	2	10	19150	1905	1150	1985	QPSK	1	0	12	10	5095	737.5	22.36	22.34	-0.02
2A-12A(0)	12	5	23095	707.5	5095	737.5	QPSK	1	0	2	20	900	1960	24.21	24.16	-0.05
2A-12A(1)	12	3	23095	707.5	5395	737.5	QPSK	1	7	2	20	900	1960	24.25	24.23	-0.02
2A-12A(2)	12	5	23095	707.5	5095	737.5	QPSK	1	0	2	10	900	1960	24.25	24.22	-0.04
2A-13A(0,1)	2	10	19150	1905	1150	1985	QPSK	1	0	13	10	5230	751	22.36	22.31	-0.05
2A-13A(0)	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	23.82	23.81	-0.01
2A-13A(1)	13	10	23230	782	5230	751	QPSK	1	24	2	10	900	1960	23.82	23.81	-0.01
2A-17A	2	10	19150	1905	1150	1985	QPSK	1	0	17	10	5790	740	22.36	22.32	-0.04
2A-17A	17	10	23790	710	5790	740	QPSK	1	0	2	10	900	1960	24.46	24.42	-0.04
2A-26A	2	10	19150	1905	1150	1985	QPSK	1	0	26	15	8865	876.5	22.36	22.35	-0.01
2A-26A	26	10	26590	844	8990	889	QPSK	1	24	2	20	900	1960	24.10	24.05	-0.05
4A-17A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	17	10	5790	740	22.10	22.09	-0.02
5A-41A	5	5	20625	846.5	2625	891.5	QPSK	1	12	41	20	40620	2593	23.78	23.76	-0.02
12A-25A	12	5	23095	707.5	5095	737.5	QPSK	1	0	25	20	8365	1962.5	24.21	24.16	-0.05
12A-25A	25	15	26615	1907.5	8615	1987.5	QPSK	1	0	12	10	5095	737.5	22.50	22.49	-0.01
26A-41A	26	10	26990	844	8990	889	QPSK	1	24	41	20	40620	2593	24.10	24.07	-0.03
41A-41A(0,1) PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	41490	2680	21.91	21.90	-0.01
41A-41A(0,1) PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	41490	2680	22.98	22.95	-0.03
66A-66A	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	22.61	22.58	-0.03
66B	66	15	132322	1745	66786	2145	QPSK	1	0	66	5	66693	2135.7	22.61	22.59	-0.02
66C	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	66615	2127.9	22.61	22.59	-0.02

LTE Down Link 3CA Call Setup

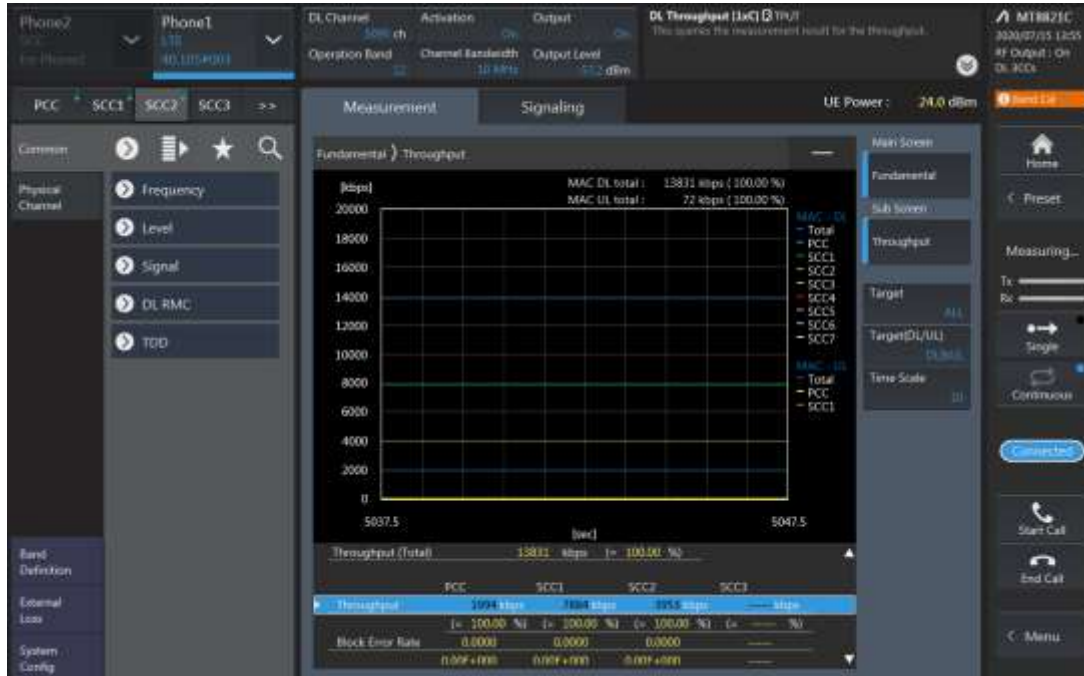
PCC Setting (Channel/ RB/ BW/ Modulation)



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



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

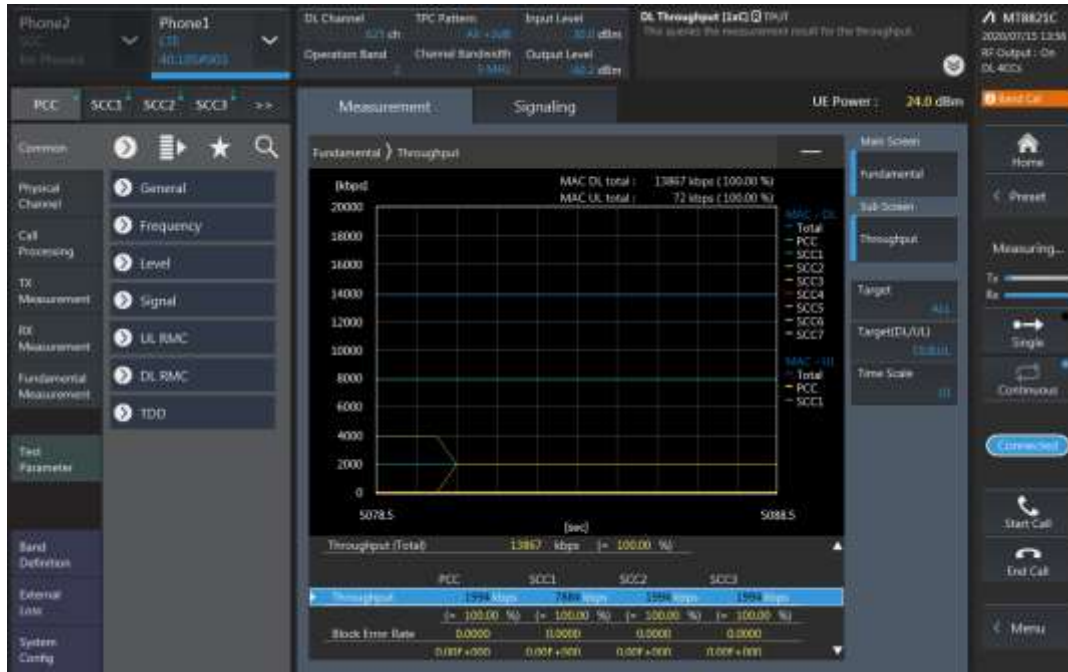


3CA Downlink Carrier aggregation conducted Powers

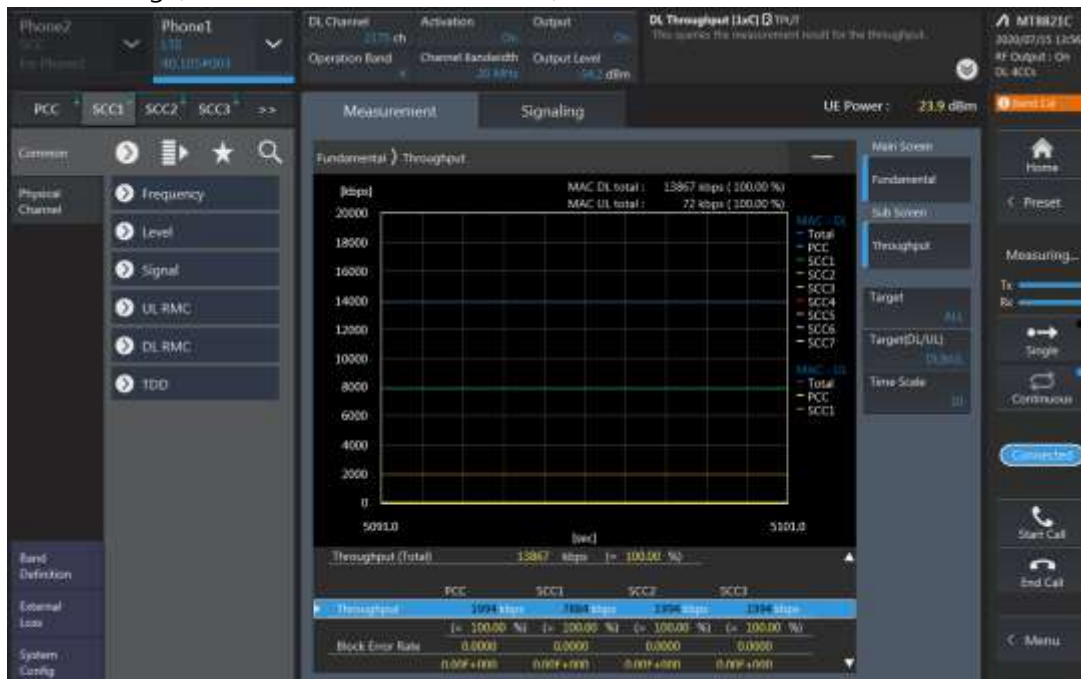
Combination	PCC								SCC				SCC				Tx Power		Deviation (dB) (2)-(1)	
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	Offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)		LTE Tx Power with DL CA Enabled (dBm) (2)
2A-4A-5A	2	10	19150	1905	1150	1985	QPSK	1	0	4	20	2175	2132.5	5	10	2525	881.5	22.36	22.33	-0.03
2A-4A-5A	4	20	20300	1745	2300	2145	QPSK	1	49	2	20	900	1960	5	10	2525	881.5	22.71	22.70	-0.01
2A-4A-5A	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	23.78	23.75	-0.03
2A-4A-13A	2	10	19150	1905	1150	1985	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	22.36	22.35	-0.01
2A-4A-13A	4	20	20300	1745	2300	2145	QPSK	1	49	2	20	900	1960	13	10	5230	751	22.71	22.68	-0.03
2A-4A-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	4	20	2175	2132.5	23.82	23.81	-0.01
2A-5A-66A	2	10	19150	1905	1150	1985	QPSK	1	0	5	10	2525	881.5	66	20	66786	2145	22.36	22.33	-0.03
2A-5A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	66	20	66786	2145	23.78	23.76	-0.02
2A-5A-66A	66	15	132322	1745	66786	2145	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	22.61	22.57	-0.04
2A-66A-66A	2	10	19150	1905	1150	1985	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	22.36	22.33	-0.03
2A-66A-66A	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	2	20	900	1960	23.78	23.75	-0.03
4A-4A-5A	4	20	20175	1732.5	2175	2132.5	QPSK	1	36	4	10	2000	2115	5	10	2525	881.5	22.39	22.37	-0.02
4A-4A-5A	5	5	20625	846.5	2625	891.5	QPSK	1	12	4	20	2175	2132.5	4	10	2000	2115	23.78	23.74	-0.04
4A-4A-12A	4	20	20175	1732.5	2175	2132.5	QPSK	1	36	4	10	2000	2115	12	10	5095	737.5	22.39	22.37	-0.02
4A-4A-12A	12	5	23095	707.5	5095	737.5	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	23.78	23.75	-0.03
5A-66A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	66	20	66886	2155	66	20	67236	2190	23.78	23.76	-0.02
5A-66A-66A	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	5	10	2525	881.5	23.78	23.75	-0.03
5A-66C	5	5	20625	846.5	2625	891.5	QPSK	1	12	66	20	66886	2155	66	20	66588	2125.2	23.78	23.75	-0.03
5A-66C	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	66615	2127.9	5	10	2525	881.5	22.61	22.56	-0.05
12A-66A-66A	12	5	23095	707.5	5095	737.5	QPSK	1	0	66	20	66886	2155	66	20	67236	2190	24.21	24.17	-0.05
12A-66A-66A	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	12	10	5095	737.5	23.78	23.73	-0.05
26A-41C PC3	26	10	26990	844	8990	889	QPSK	1	24	41	20	40620	2593	41	20	40422	2573.2	24.10	24.08	-0.02
26A-41C PC2	26	10	26990	844	8990	889	QPSK	1	24	41	20	40620	2593	41	20	40422	2573.2	24.10	24.06	-0.04
41A-41C PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	41490	2680	41	20	41292	2660.2	21.91	21.89	-0.02
41A-41C PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	41490	2680	21.91	21.91	0.00
41A-41C PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	41490	2680	41	20	41292	2660.2	22.98	22.96	-0.02
41A-41C PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	41490	2680	22.98	22.98	0.00

LTE Down Link 4CA Call Setup

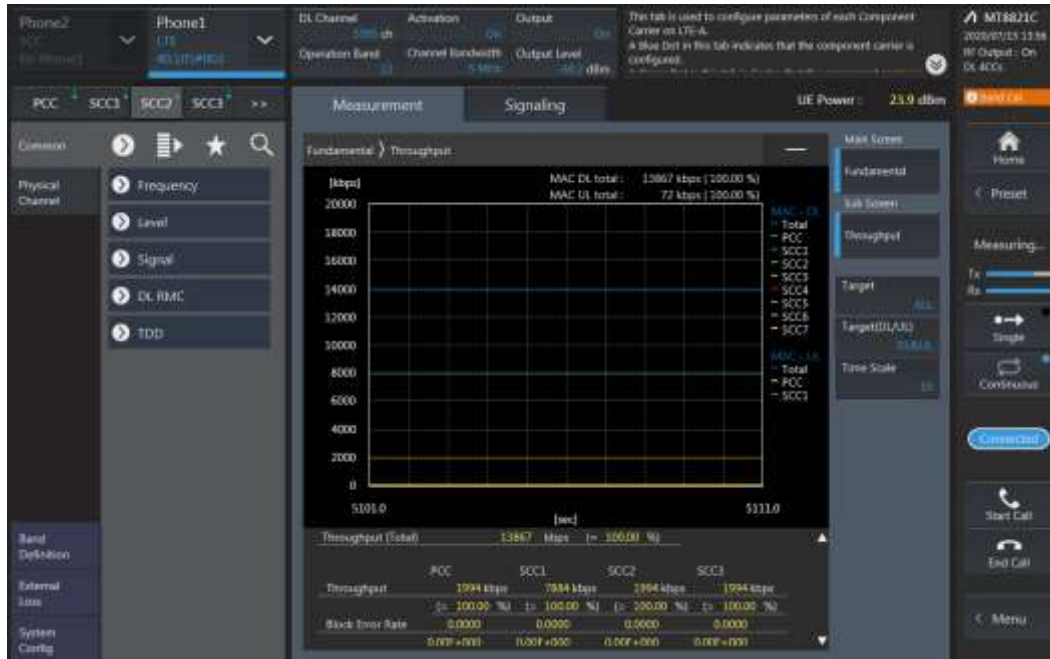
PCC Setting (Channel/ RB/ BW/ Modulation)



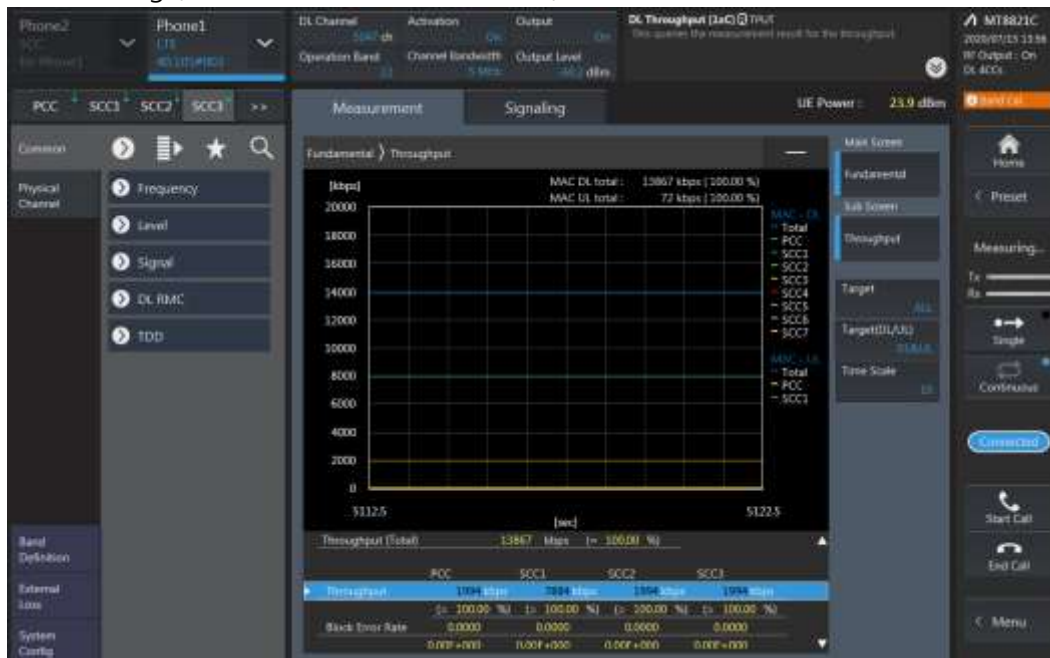
SCC1 Setting (Channel/ RB/ BW/ Modulation) and call Connection



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



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

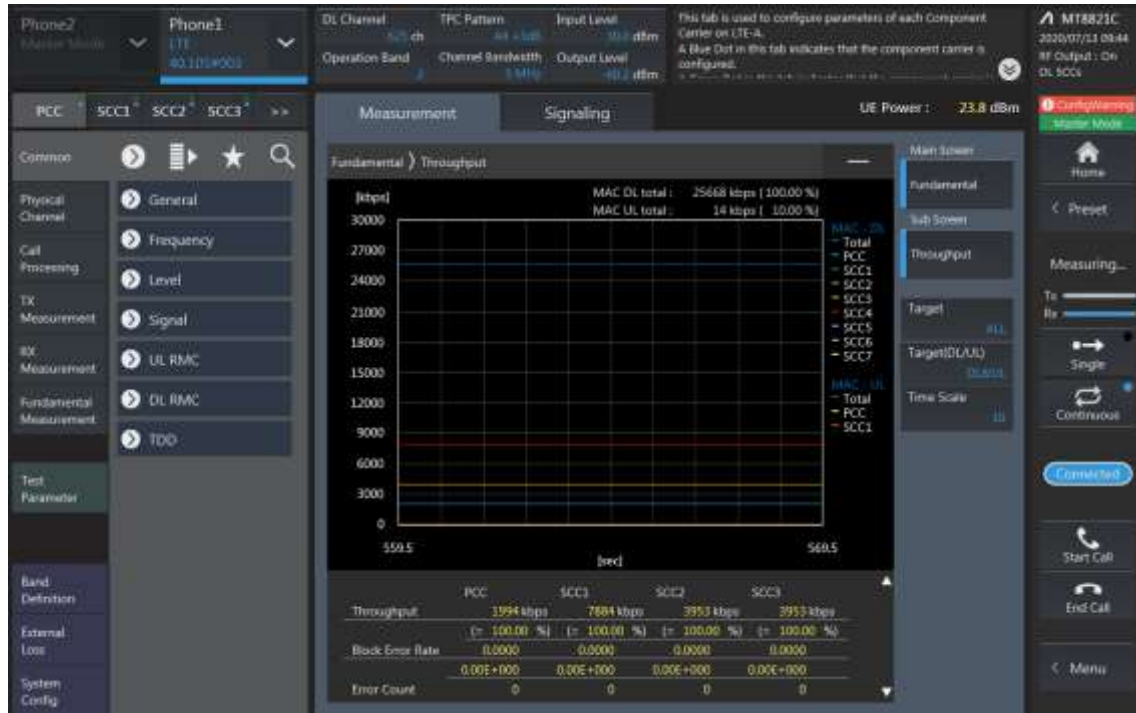


4CA Downlink Carrier aggregation conducted Powers

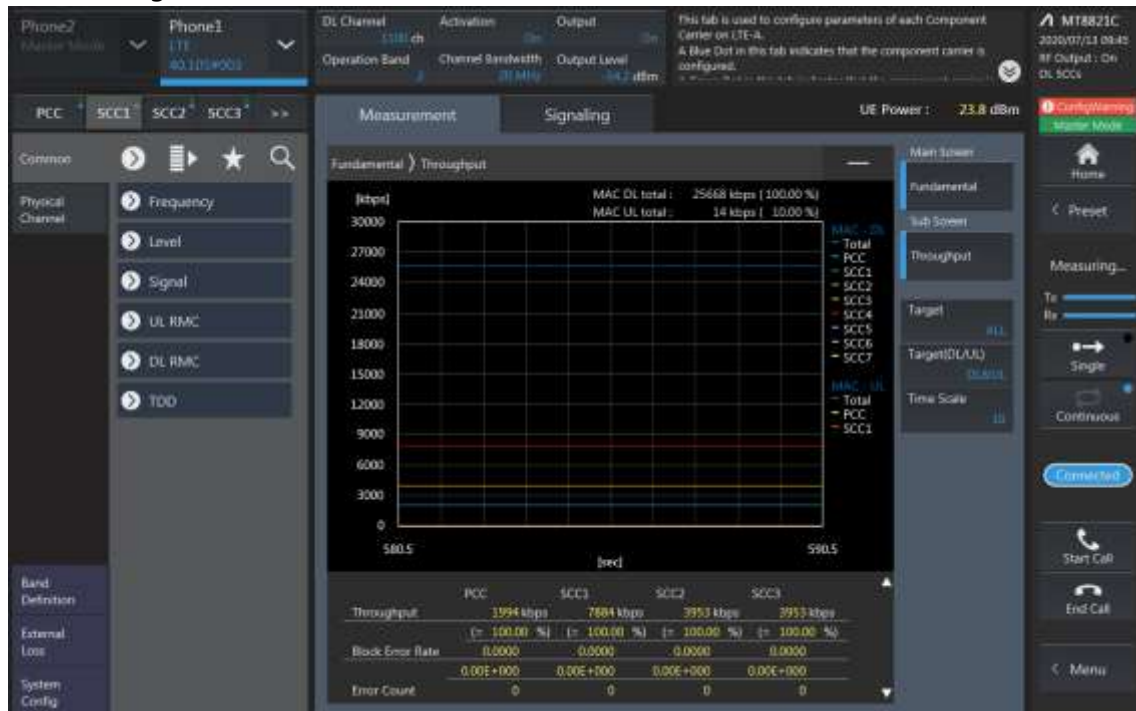
Combination	PCC						SCC			SCC			SCC			Tx Power		Deviaion (dB) (2)-(1)						
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency		Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)
41A-41D PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	41490	2680	41	20	41094	2640.4	41	20	41292	2660.2	21.91	21.89	-0.02
41A-41D PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	40146	2545.6	41	20	41490	2680	21.91	21.90	-0.01
41A-41D PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	41490	2680	41	20	41094	2640.4	41	20	41292	2660.2	22.98	22.93	-0.05
41A-41D PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	40146	2545.6	41	20	41490	2680	22.98	22.94	-0.04
41C-41C PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	41490	2680	41	20	41292	2660.2	21.91	21.88	-0.03
41C-41C PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	41490	2680	41	20	41292	2660.2	22.98	22.93	-0.05
41E	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	40146	2545.6	41	20	40344	2565.4	21.91	21.89	-0.02

LTE Down Link 5CA Call Setup

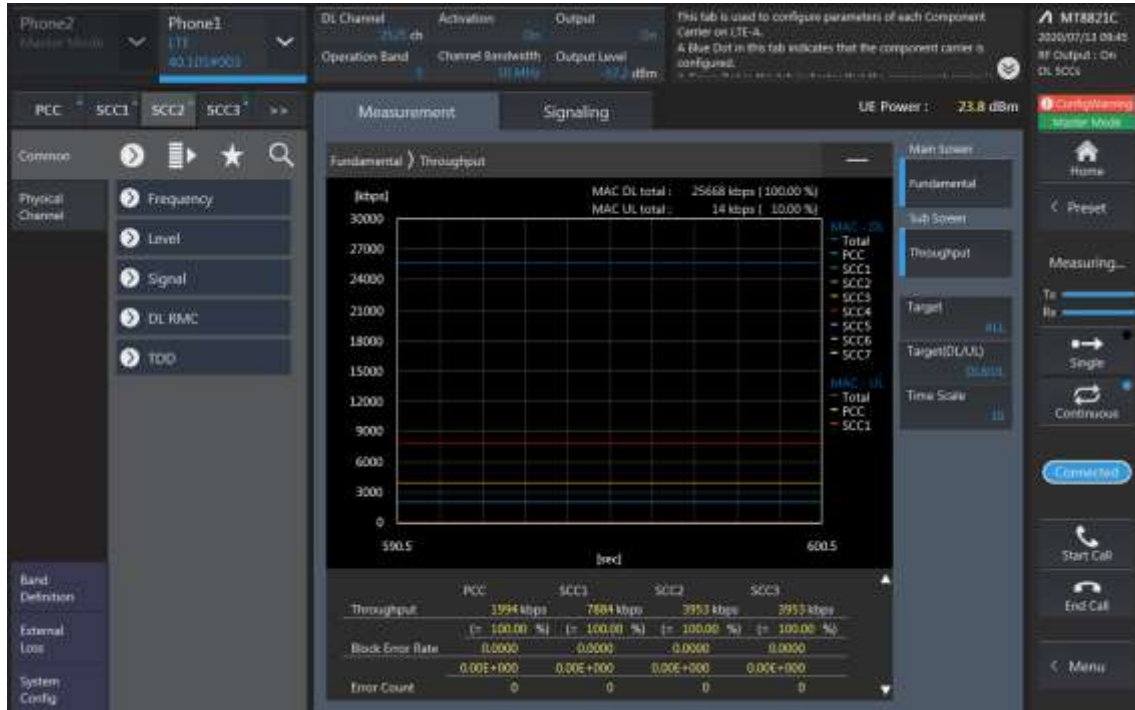
PCC Setting: Channel /RB/BW/Modulation



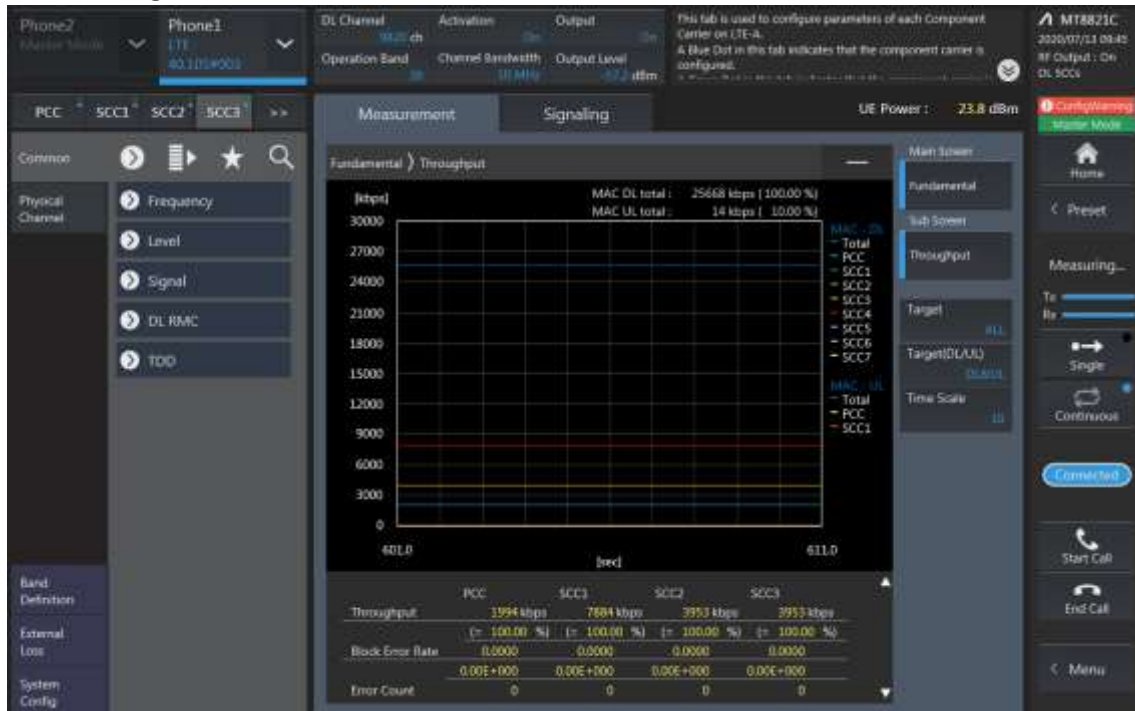
SCC1 Setting (Channel /RB/BW/Modulation)and call Connection



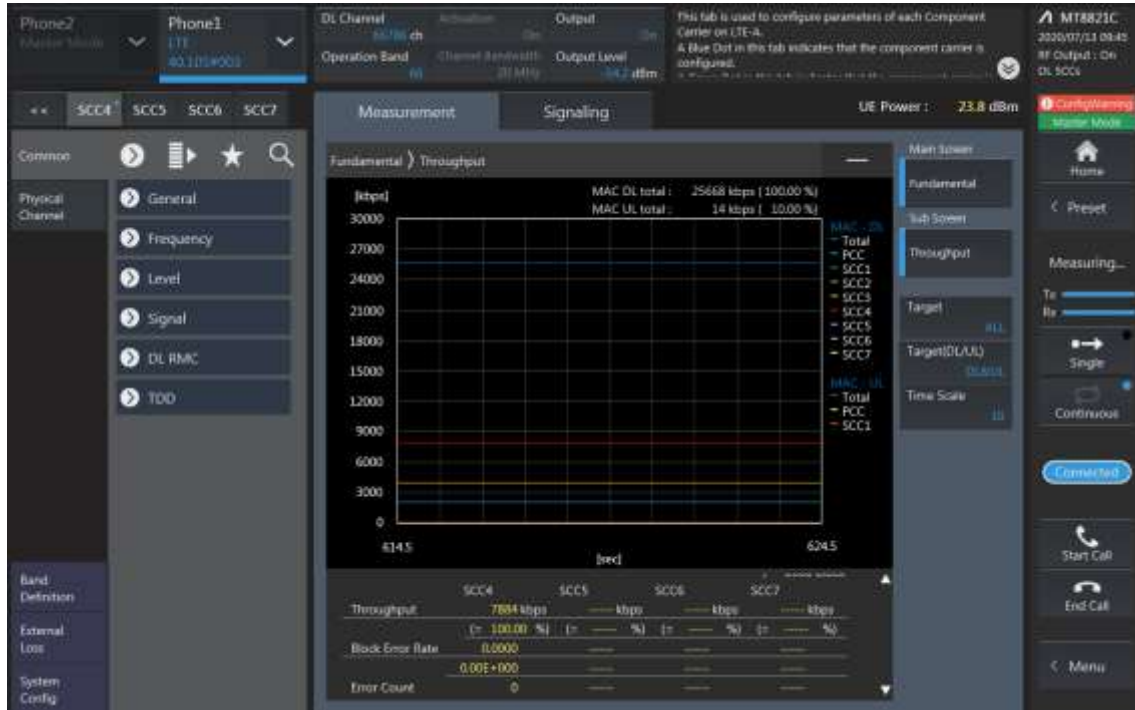
SCC2 Setting (Channel /RB/BW/Modulation)and call Connection



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



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

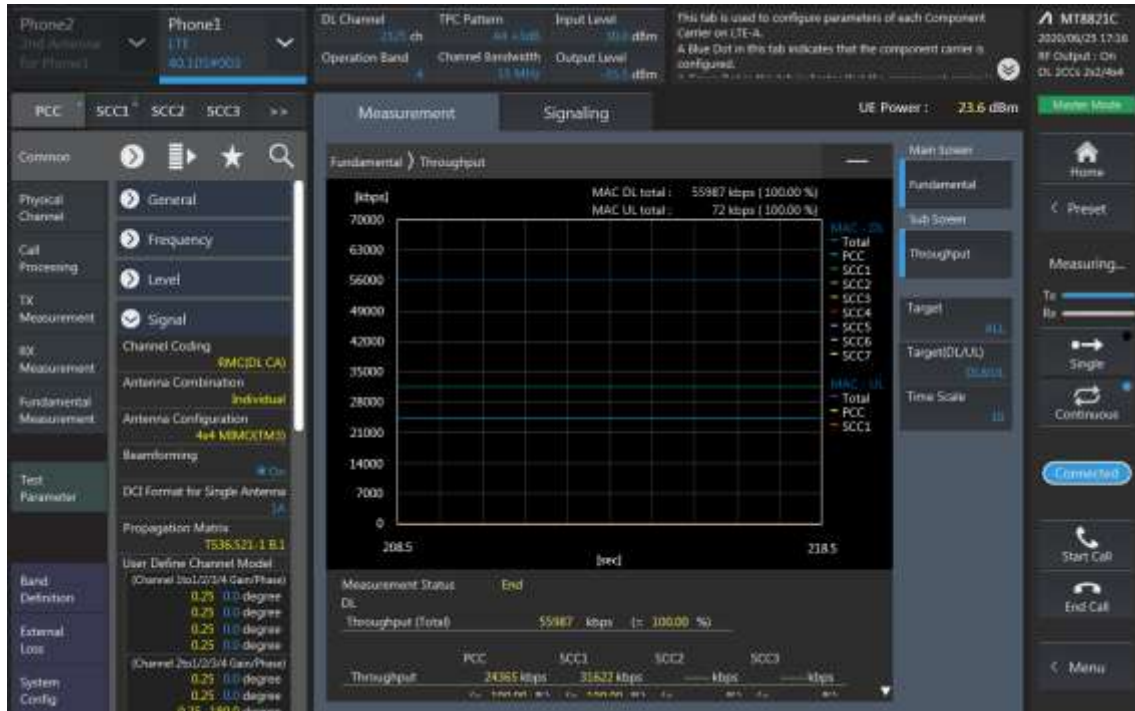


SCA Downlink Carrier aggregation Maximum conducted Powers

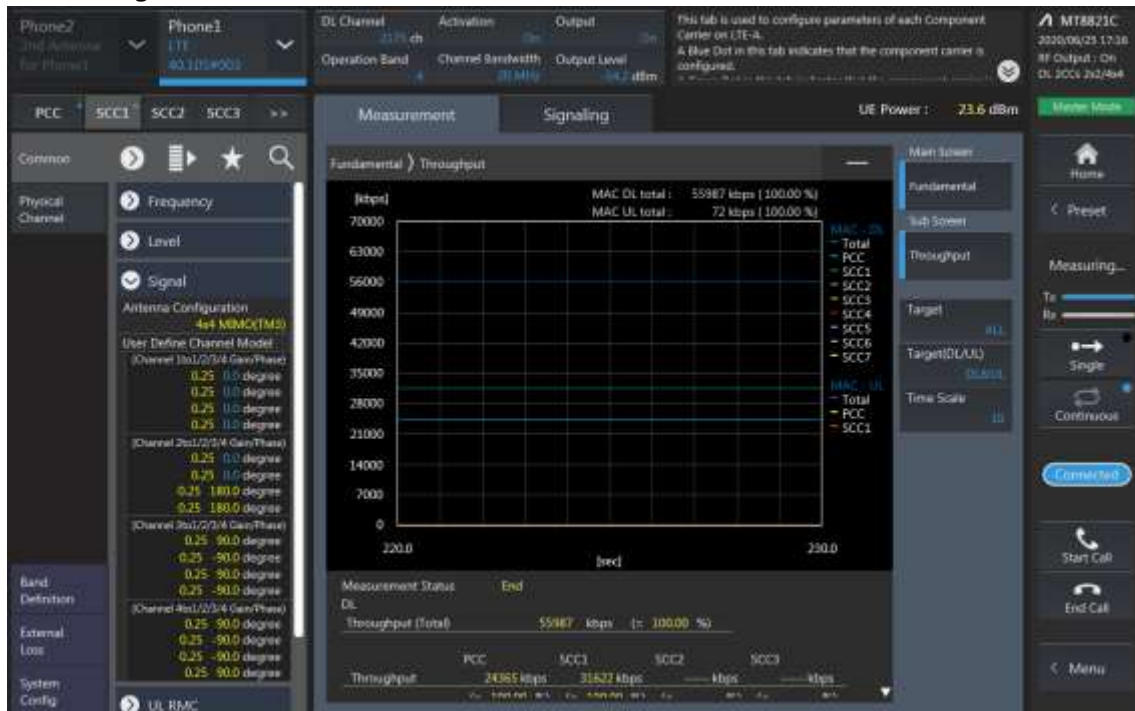
Combination	PCC								SCC				SCC				SCC				Tx Power							
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviaion (dB) (2)-(1)
41C-41D PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	41490	2680	41	20	41292	2660.2	41	20	41094	2640.4	21.91	21.89	-0.02
41C-41D PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	40146	2545.6	41	20	41490	2680	41	20	41292	2660.2	21.91	21.88	-0.03
41C-41D PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	41490	2680	41	20	41292	2660.2	41	20	41094	2640.4	22.98	22.93	-0.05
41C-41D PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	40146	2545.6	41	20	41490	2680	41	20	41292	2660.2	22.98	22.95	-0.03

LTE Down Link 2CA 4x4 MIMO Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation



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

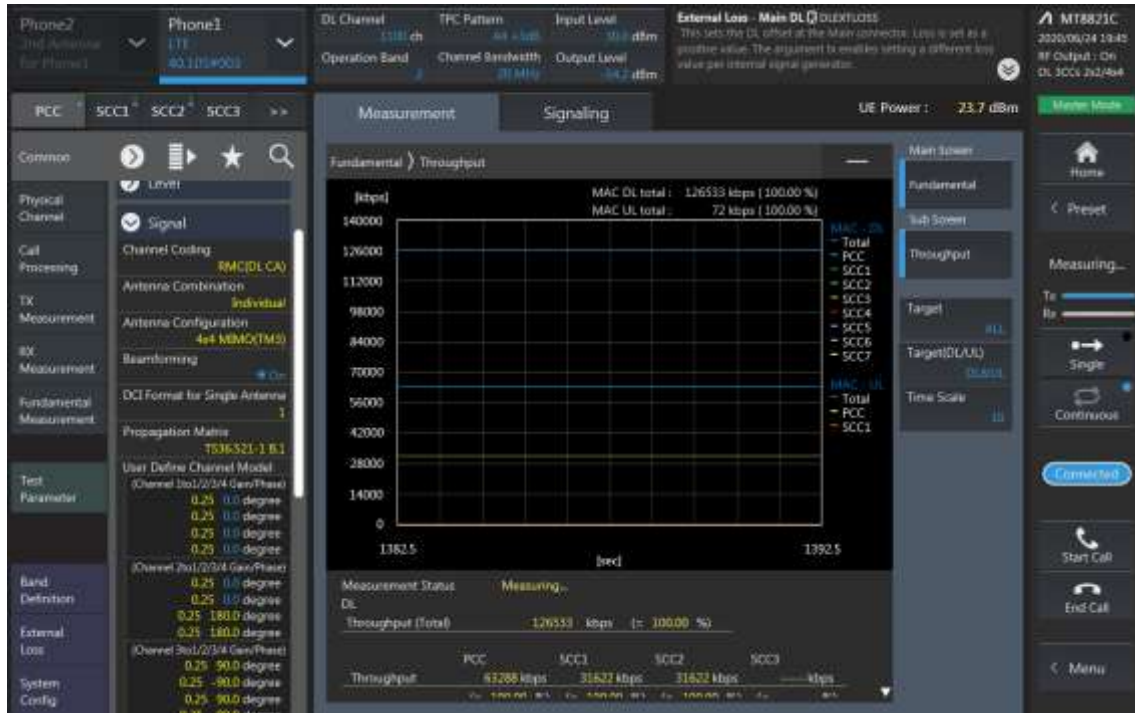


LTE Downlink 2CA 4X4 MIMO Maximum Conducted Power

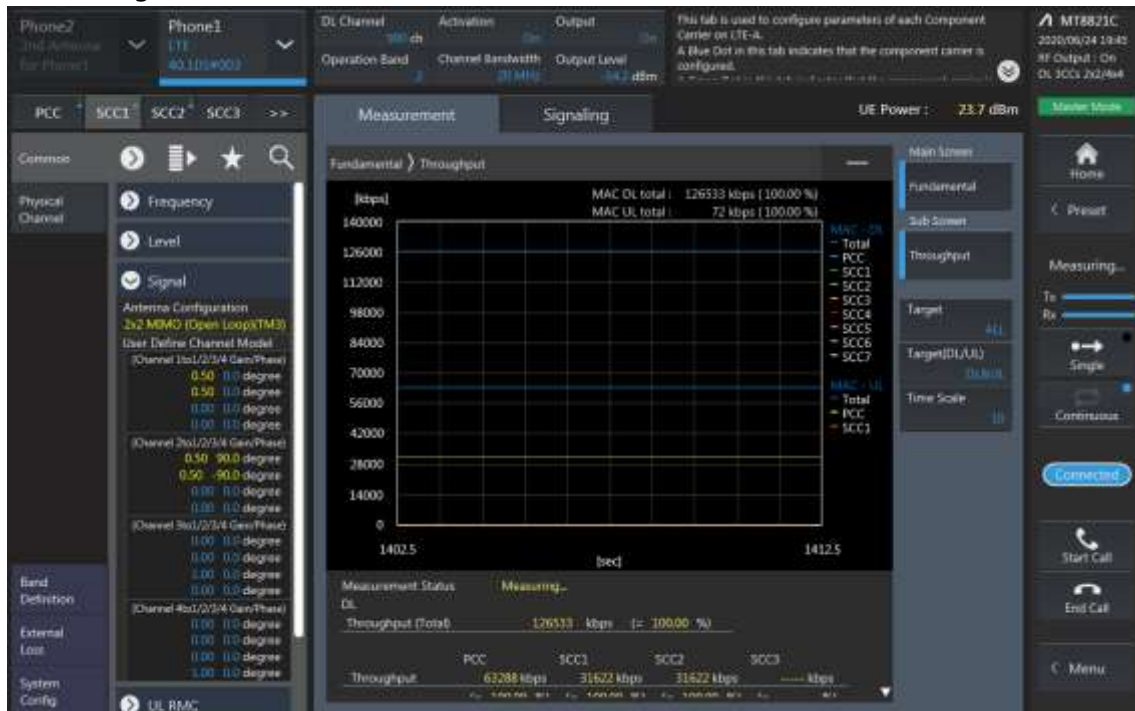
Combination	PCC									SCC				Tx Power		Deviaion (dB) (2)-(1)
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	
[4A]-17A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	17	10	5790	740	22.10	22.05	-0.05
5A-[41A]	5	5	20625	846.5	2625	891.5	QPSK	1	12	41	20	40620	2593	23.78	23.75	-0.033
26A-[41A]	26	10	26990	844	8990	889	QPSK	1	24	41	20	40620	2593	24.10	24.08	-0.017
[41A]-[41A](0,1) PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	41490	2680	21.91	21.89	-0.024
[41A]-[41A](0,1) PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	41490	2680	22.98	22.95	-0.034
[66A]-[66A]	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	22.61	22.56	-0.046
[66B]	66	15	132322	1745	66786	2145	QPSK	1	0	66	5	66693	2135.7	22.61	22.60	-0.011
[66C]	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	66615	2127.9	22.61	22.57	-0.044

LTE Down Link 3CA 4x4 MIMO Call Setup

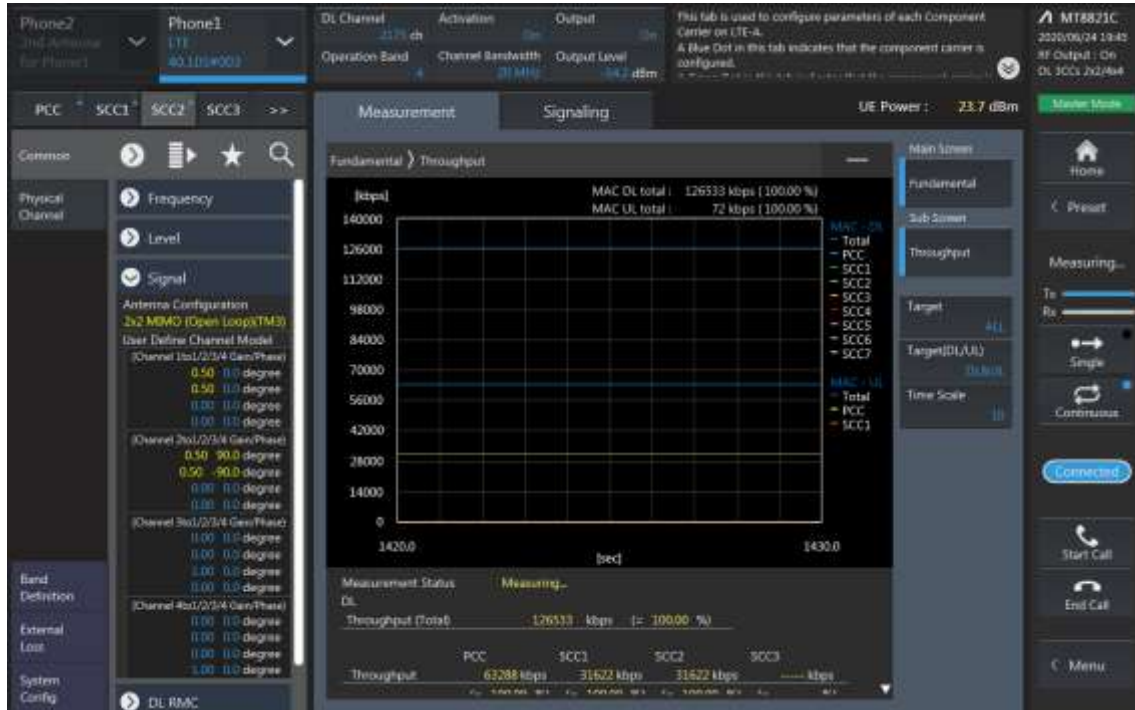
PCC Setting: Channel /RB/BW/Modulation



CC1 Setting : Channel /RB/BW/Modulation



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

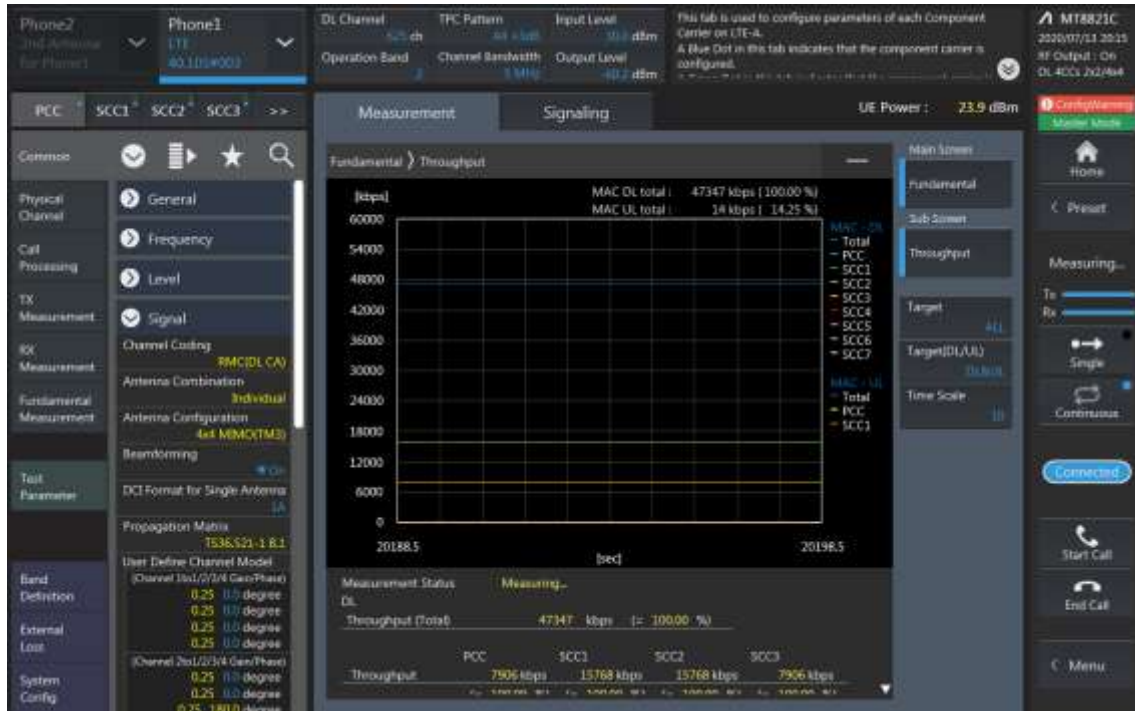


LTE Downlink 3CA 4X4 MIMO Maximum Conducted Power

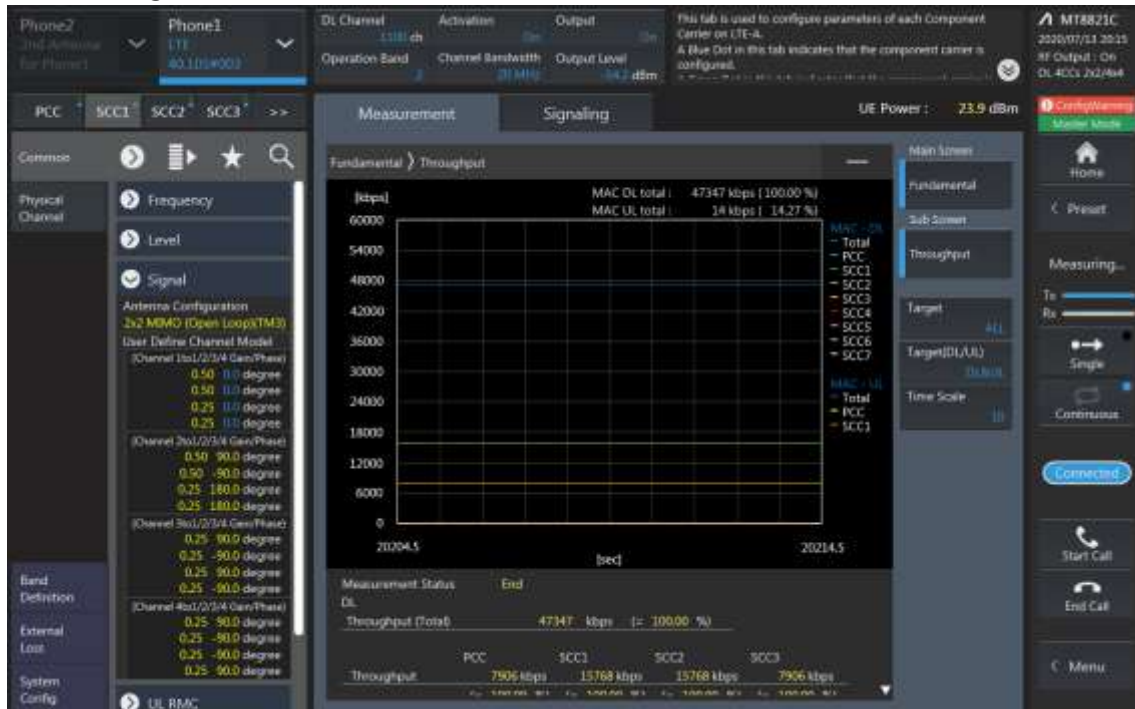
Combination	PCC								SCC				SCC				Tx Power		Deviation (dB) (2)-(1)	
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	Offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)		LTE Tx Power with DL CA Enabled (dBm) (2)
2A-[4A]-5A	2	10	19150	1905	1150	1985	QPSK	1	0	4	20	2175	2132.5	5	10	2525	881.5	22.36	22.34	-0.02
2A-[4A]-5A	4	20	20300	1745	2300	2145	QPSK	1	49	2	20	900	1960	5	10	2525	881.5	22.71	22.69	-0.02
2A-[4A]-5A	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	23.78	23.73	-0.05
2A-[4A]-13A	2	10	19150	1905	1150	1985	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	22.36	22.35	-0.01
2A-[4A]-13A	4	20	20300	1745	2300	2145	QPSK	1	49	2	20	900	1960	13	10	5230	751	22.71	22.67	-0.05
2A-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	4	20	2175	2132.5	23.82	23.81	-0.02
2A-5A-[66A]	2	10	19150	1905	1150	1985	QPSK	1	0	5	10	2525	881.5	66	20	66786	2145	22.36	22.34	-0.02
2A-5A-[66A]	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	66	20	66786	2145	23.78	23.74	-0.04
2A-5A-[66A]	66	15	132322	1745	66786	2145	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	22.61	22.57	-0.04
2A-[66A]-[66A]	2	10	19150	1905	1150	1985	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	22.36	22.33	-0.03
2A-[66A]-[66A]	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	2	20	900	1960	23.78	23.73	-0.05
[4A]-[4A]-5A	4	20	20175	1732.5	2175	2132.5	QPSK	1	36	4	10	2000	2115	5	10	2525	881.5	22.39	22.34	-0.05
[4A]-[4A]-5A	5	5	20625	846.5	2625	891.5	QPSK	1	12	4	20	2175	2132.5	4	10	2000	2115	23.78	23.74	-0.05
[4A]-[4A]-12A	4	20	20175	1732.5	2175	2132.5	QPSK	1	36	4	10	2000	2115	12	10	5095	737.5	22.39	22.38	-0.01
[4A]-[4A]-12A	12	5	23095	707.5	5095	737.5	QPSK	1	0	4	20	2175	2132.5	4	10	2000	2115	23.78	23.77	-0.01
5A-[66A]-[66A]	5	5	20625	846.5	2625	891.5	QPSK	1	12	66	20	66886	2155	66	20	67236	2190	23.78	23.74	-0.04
5A-[66A]-[66A]	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	5	10	2525	881.5	23.78	23.75	-0.03
5A-[66C]	5	5	20625	846.5	2625	891.5	QPSK	1	12	66	20	66886	2155	66	20	66588	2125.2	23.78	23.76	-0.02
5A-[66C]	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	66615	2127.9	5	10	2525	881.5	22.61	22.59	-0.02
12A-[66A]-[66A]	12	5	23095	707.5	5095	737.5	QPSK	1	0	66	20	66886	2155	66	20	67236	2190	24.21	24.16	-0.05
12A-[66A]-[66A]	66	15	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	12	10	5095	737.5	23.78	23.78	0.00
26A-[41C] PC3	26	10	26990	844	8990	889	QPSK	1	24	41	20	40620	2593	41	20	40422	2573.2	24.10	24.07	-0.03
26A-[41C] PC2	26	10	26990	844	8990	889	QPSK	1	24	41	20	40620	2593	41	20	40422	2573.2	24.10	24.08	-0.02
[41A]-[41C] PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	41490	2680	41	20	41292	2660.2	21.91	21.89	-0.02
[41A]-[41C] PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	41490	2680	21.91	21.88	-0.03
[41A]-[41C] PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	41490	2680	41	20	41292	2660.2	22.98	22.94	-0.04
[41A]-[41C] PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	41490	2680	22.98	22.93	-0.05

LTE Down Link 4CA 4x4 MIMO Call Setup

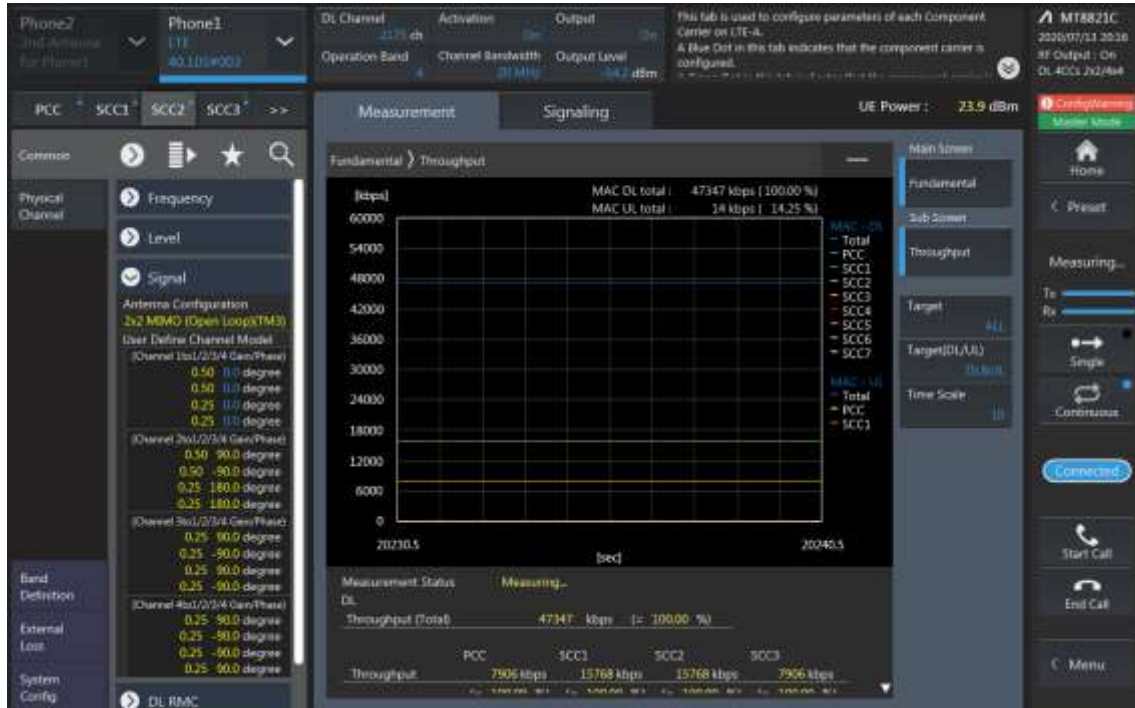
PCC Setting: Channel /RB/BW/Modulation



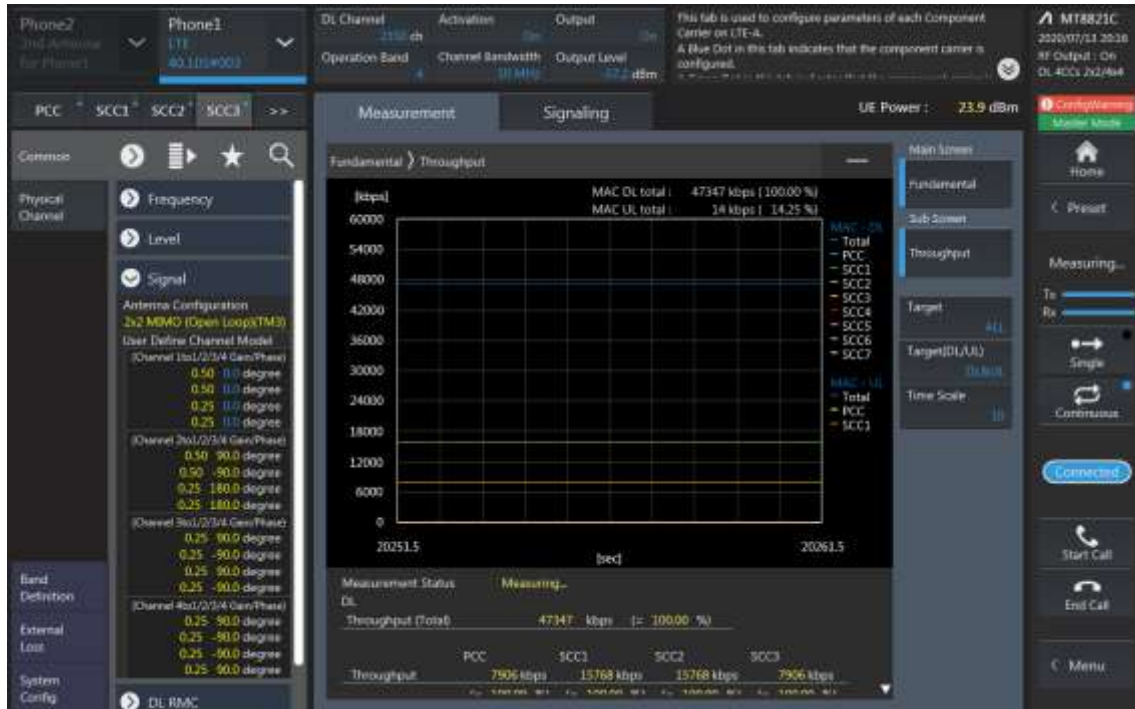
SCC1 Setting : Channel /RB/BW/Modulation



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



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

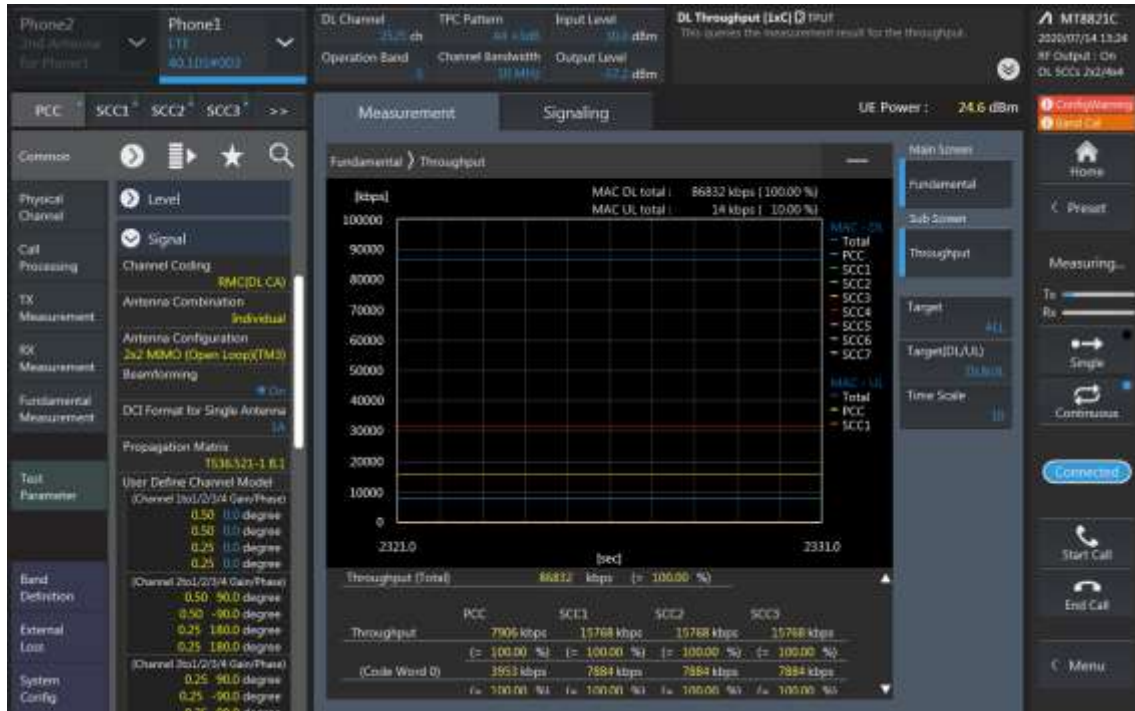


Downlink 4CA 4X4 MIMO Maximum Conducted Power

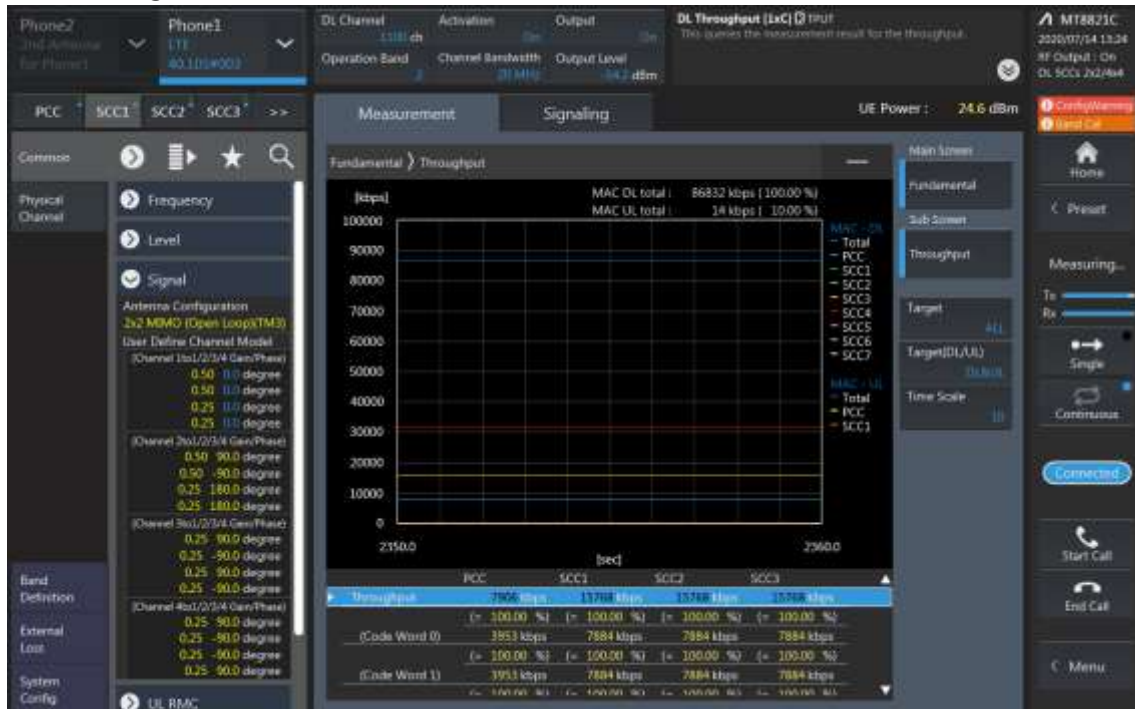
Combination	PCC								SCC				SCC				SCC				Tx Power		Deviaion (dB) (2)-(1)	
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)		LTE Tx Power with DL CA Enabled (dBm) (2)
[41A]-[41D] PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	41490	2680	41	20	41094	2640.4	41	20	41292	2660.2	21.91	21.90	-0.01
[41A]-[41D] PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	40146	2545.6	41	20	41490	2680	21.91	21.89	-0.02
[41A]-[41D] PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	41490	2680	41	20	41094	2640.4	41	20	41292	2660.2	22.98	22.93	-0.05
[41A]-[41D] PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	40146	2545.6	41	20	41490	2680	22.98	22.96	-0.02
[41C]-[41C] PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	41490	2680	41	20	41292	2660.2	21.91	21.89	-0.02
[41C]-[41C] PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	41490	2680	41	20	41292	2660.2	22.98	22.93	-0.05
[41E]	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	40146	2545.6	41	20	40344	2565.4	21.91	21.91	0.00

LTE Down Link 5CA 4x4 MIMO Call Setup

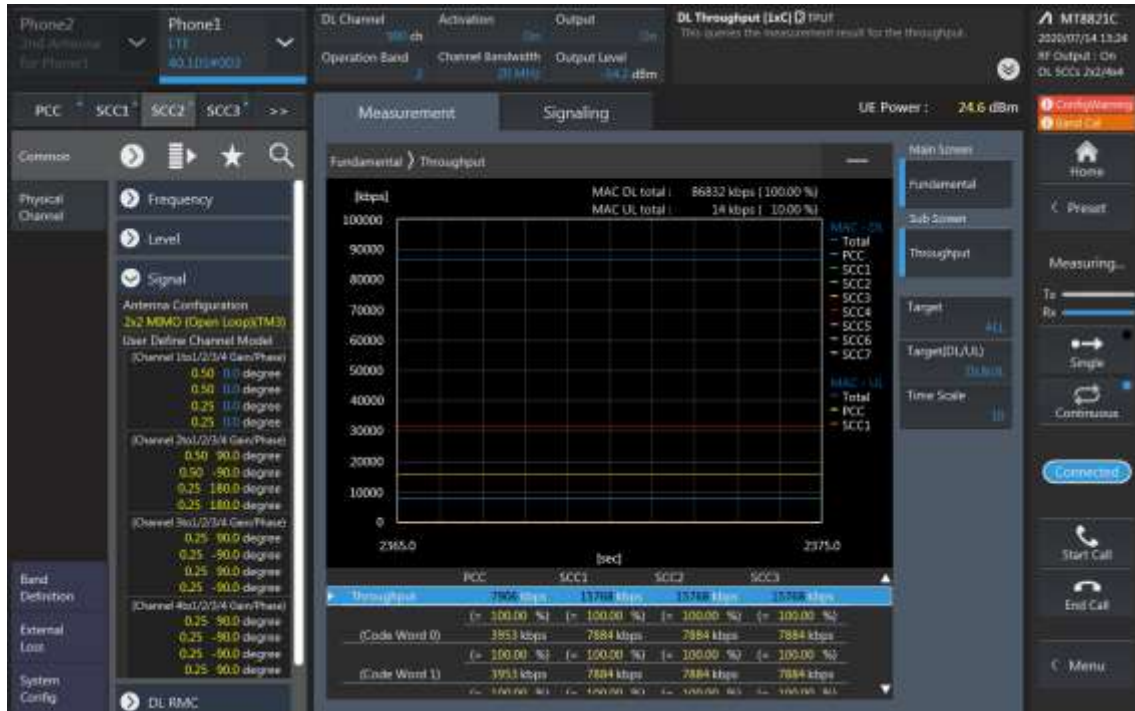
PCC Setting: Channel /RB/BW/Modulation



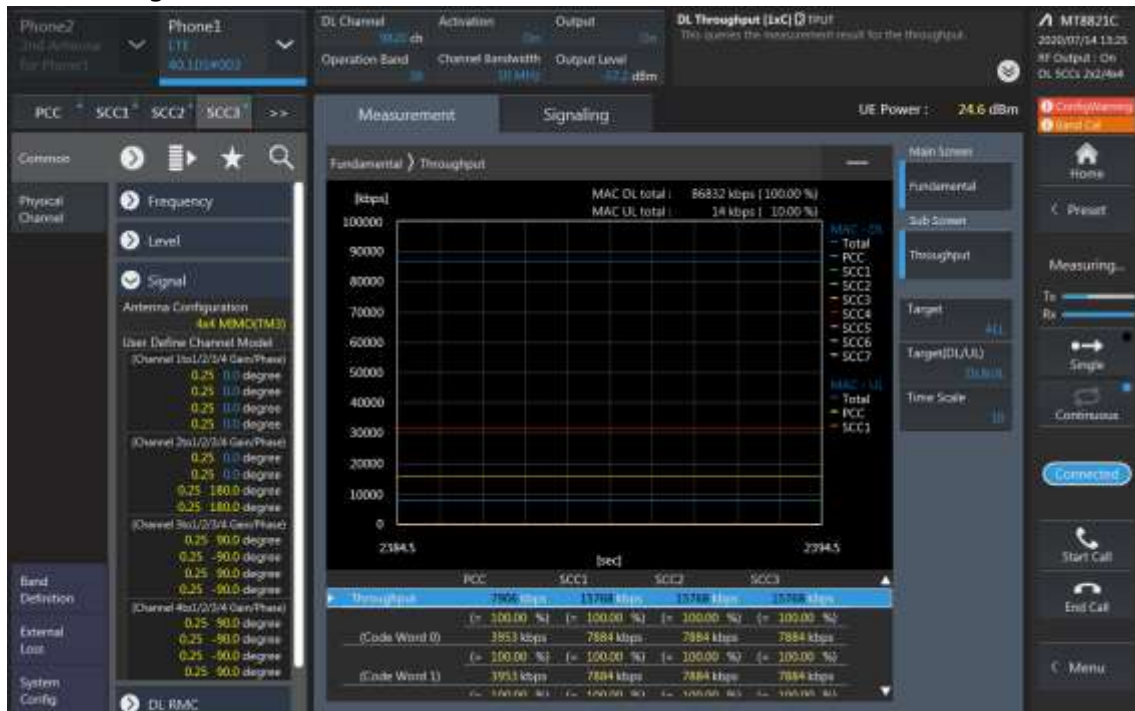
SCC1 Setting : Channel /RB/BW/Modulation



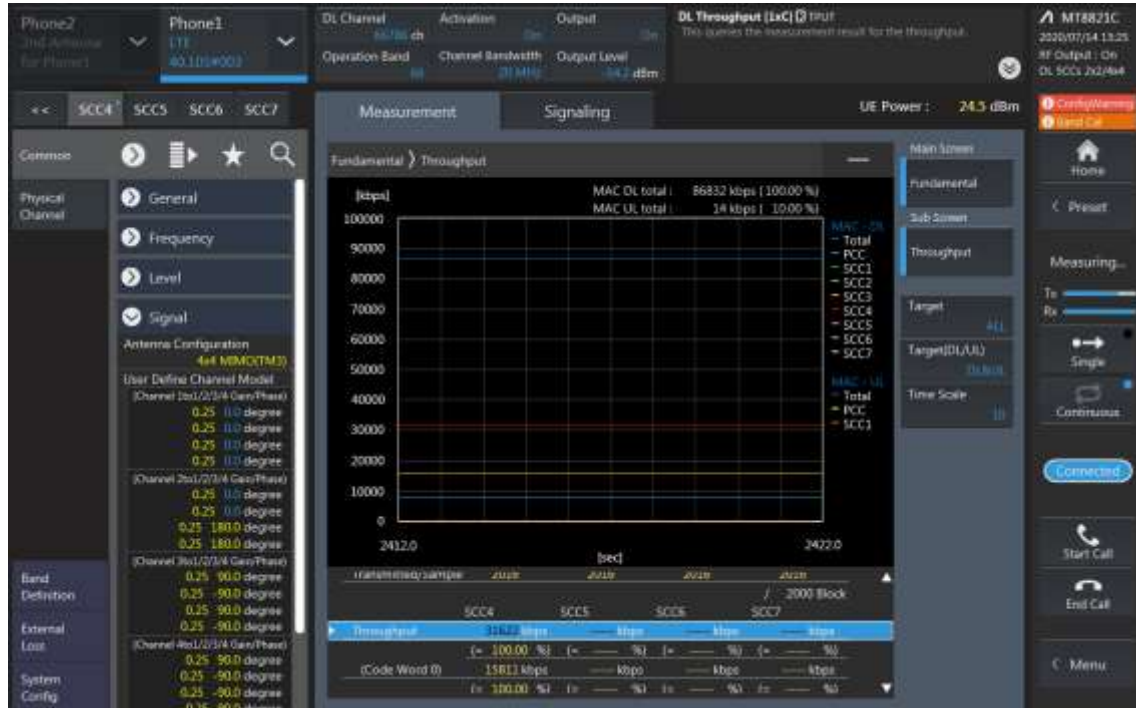
SCC2 Setting (Channel /RB/BW/Modulation) and call Connection



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

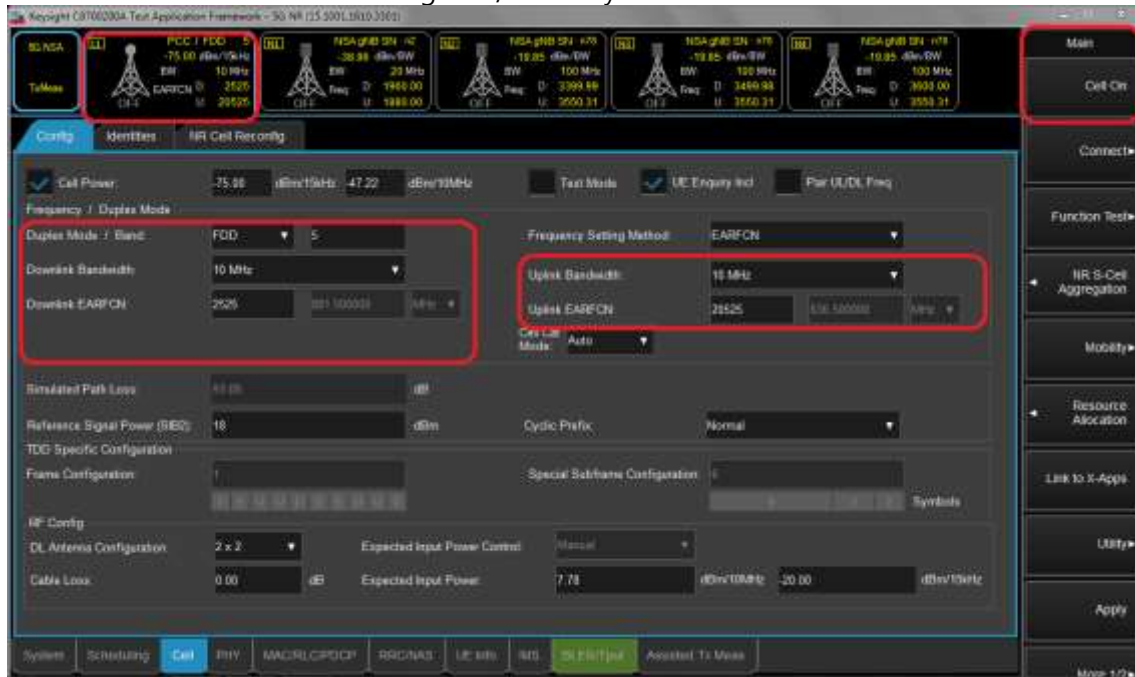
Combination	PCC								SCC				SCC				SCC				SCC				Tx Power			
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation (dB) (2)-(1)
[41C]-[41D] PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	41490	2680	41	20	41292	2660.2	41	20	41094	2640.4	21.91	21.86	-0.05
[41C]-[41D] PC3	41	20	39750	2506	39750	2506	QPSK	1	99	41	20	39948	2525.8	41	20	40146	2545.6	41	20	41490	2680	41	20	41292	2660.2	21.91	21.87	-0.04
[41C]-[41D] PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	41490	2680	41	20	41292	2660.2	41	20	41094	2640.4	22.98	22.97	-0.02
[41C]-[41D] PC2	41	20	39750	2506	39750	2506	QPSK	1	49	41	20	39948	2525.8	41	20	40146	2545.6	41	20	41490	2680	41	20	41292	2660.2	22.98	22.94	-0.04

2. 5G NR Call Box Setup

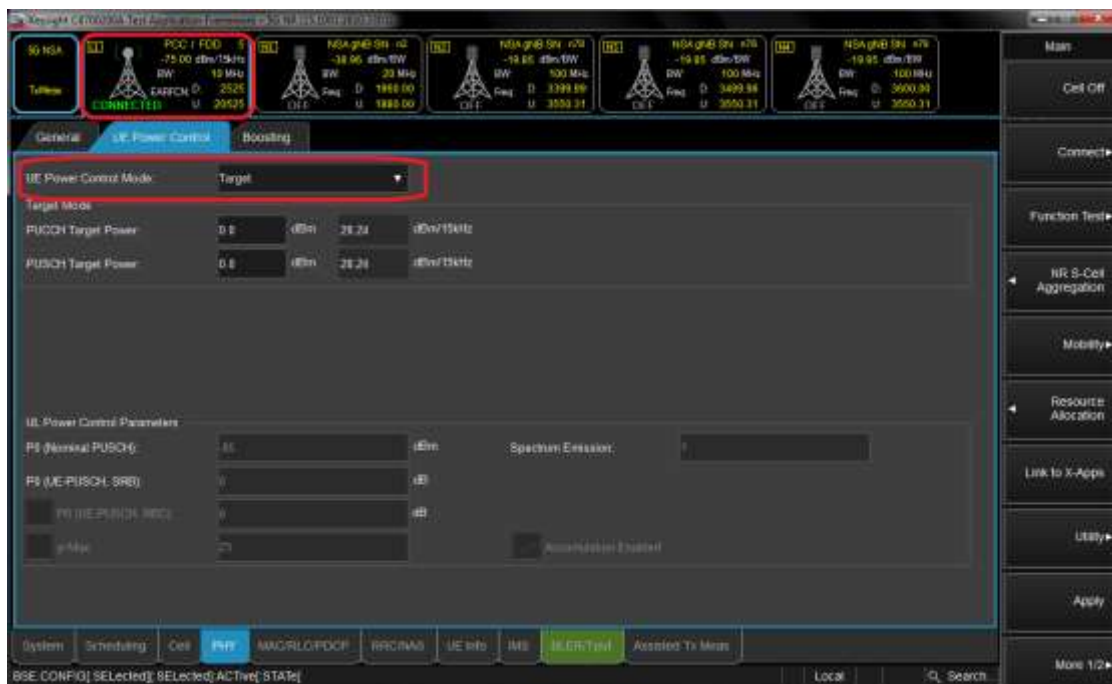
Procedure used to establish output Power measurement for NR Bands

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

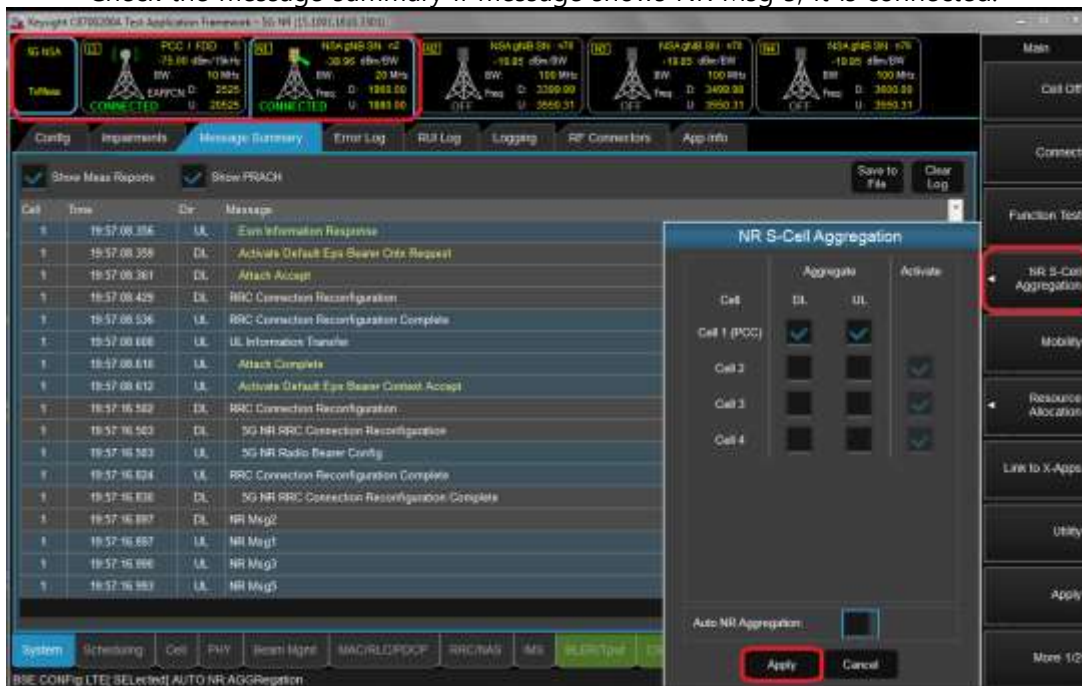


- Select operating band, BW, SCS and Channel.
- Turn the NR Cell On using "ON/OFF" Key.



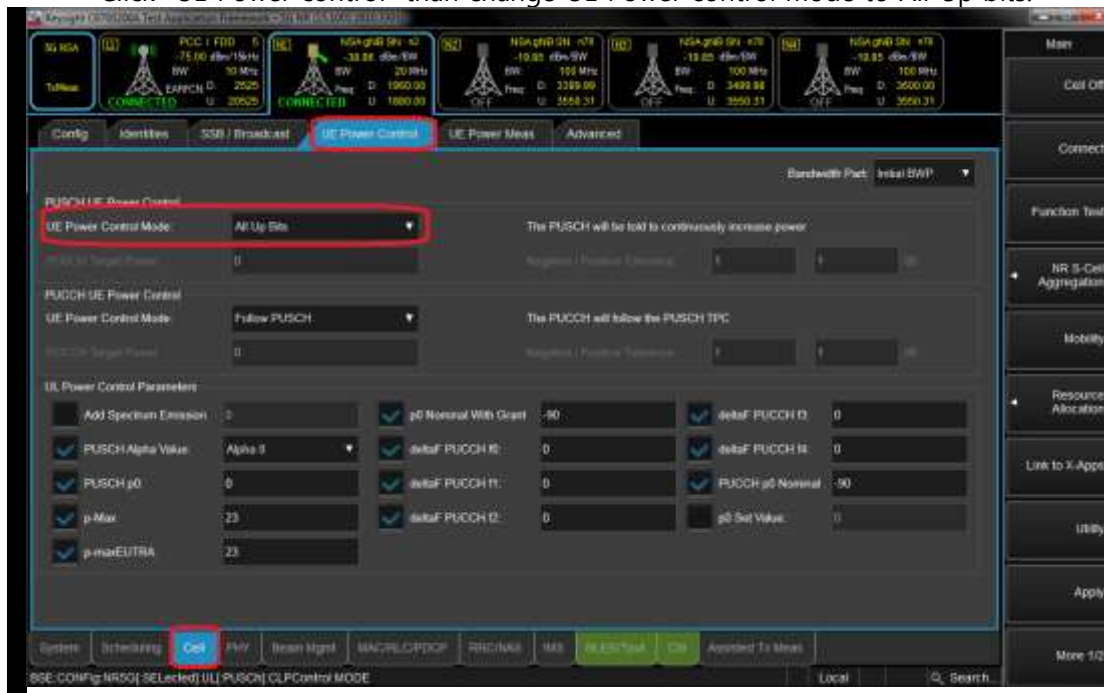
Connect NR S-Cell Aggregation

- 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".

