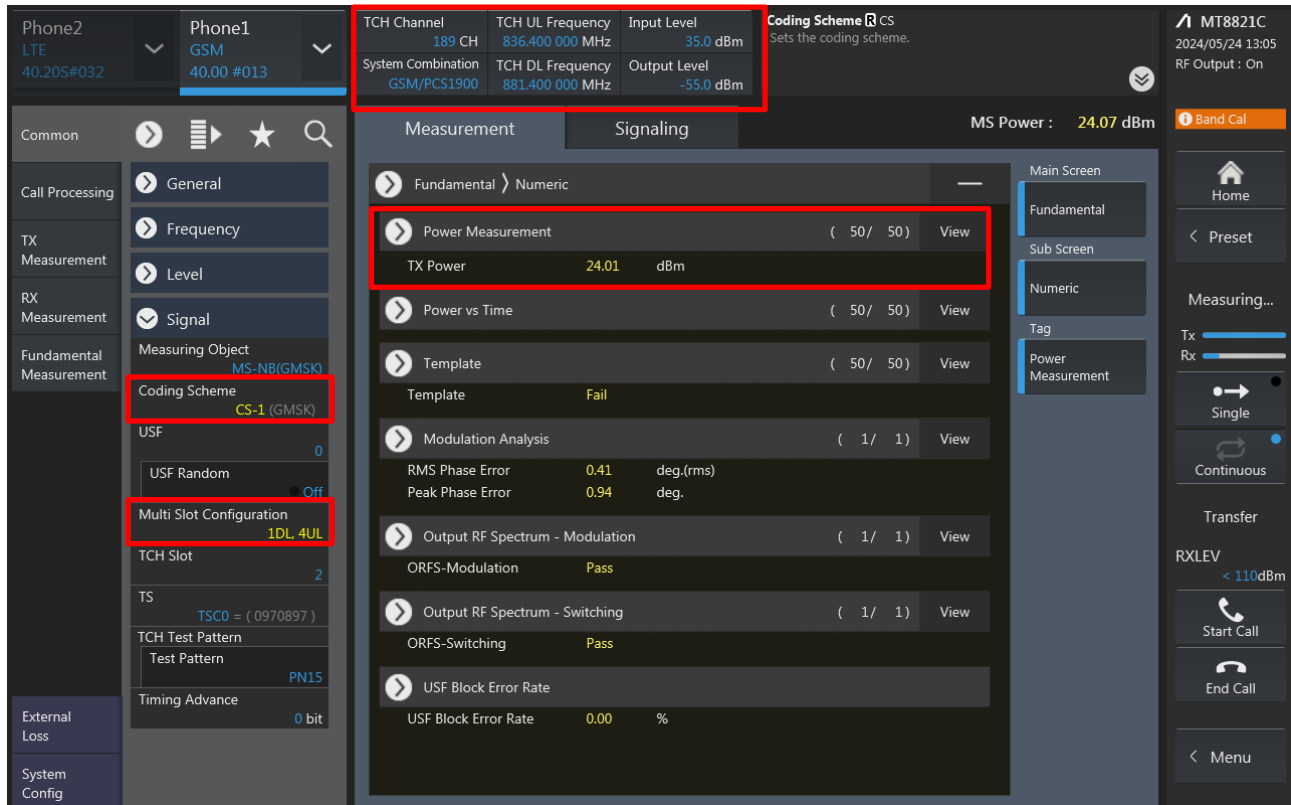


Power measurement connection diagram:

The power measurement for 2G/3G/LTE/5G FR1/UL and DL CA is to establish a connection between device and call box, and via call box to configure Bands, channel, BWs, RB size, carrier aggregation of CA, frequency channels, SCS and maximum output power. Hereunder is screenshot call box connection information for 2G/3G/LTE/5G FR1/UL and DL CA.

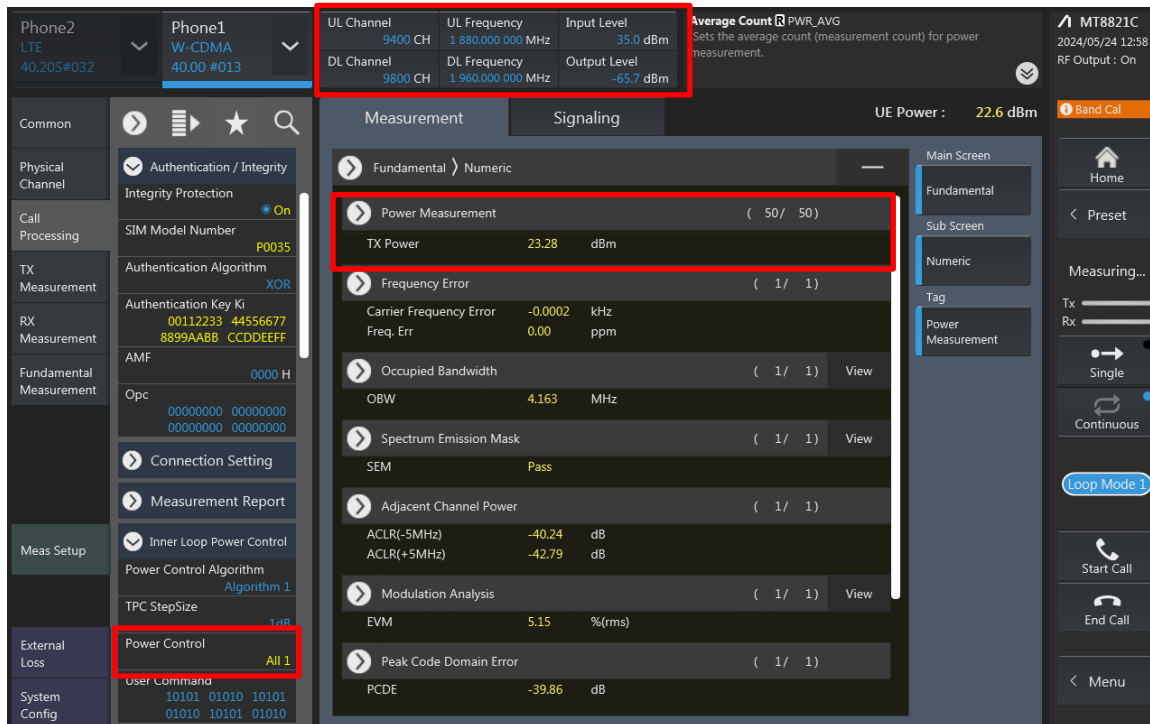
<GSM>



The screenshot displays the SPORTON LAB. software interface for GSM power measurement. The interface is divided into several sections:

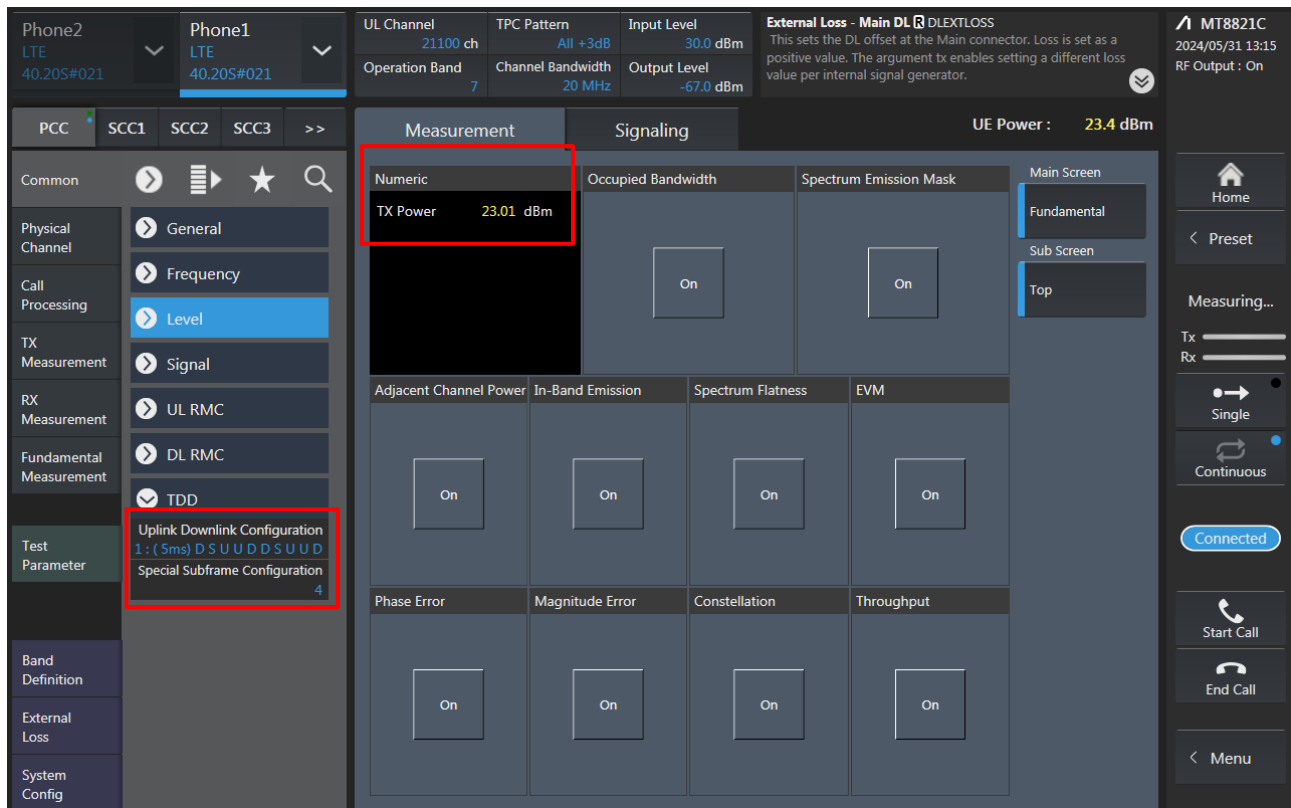
- Top Bar:** Shows Phone2 (LTE, 40.205#032) and Phone1 (GSM, 40.00 #013). The TCH Channel is 189 CH, TCH UL Frequency is 836.400 000 MHz, Input Level is 35.0 dBm, and TCH DL Frequency is 881.400 000 MHz. The Coding Scheme is CS.
- Left Sidebar:** Contains navigation options like Call Processing, TX Measurement, RX Measurement, Fundamental Measurement, and External Loss.
- Main Area:**
 - Measurement Tab:** Shows the Power Measurement section with a red box highlighting the TX Power value of 24.01 dBm. Other sections include Power vs Time, Template, Modulation Analysis, Output RF Spectrum - Modulation, Output RF Spectrum - Switching, and USF Block Error Rate.
 - Signaling Tab:** Shows the Template section with a red box highlighting the Template value of Fail.
- Right Sidebar:** Contains navigation options like Main Screen, Fundamental, Sub Screen, Numeric, Tag, and Power Measurement. It also shows the MT8821C device status and RF Output: On.

<WCDMA>



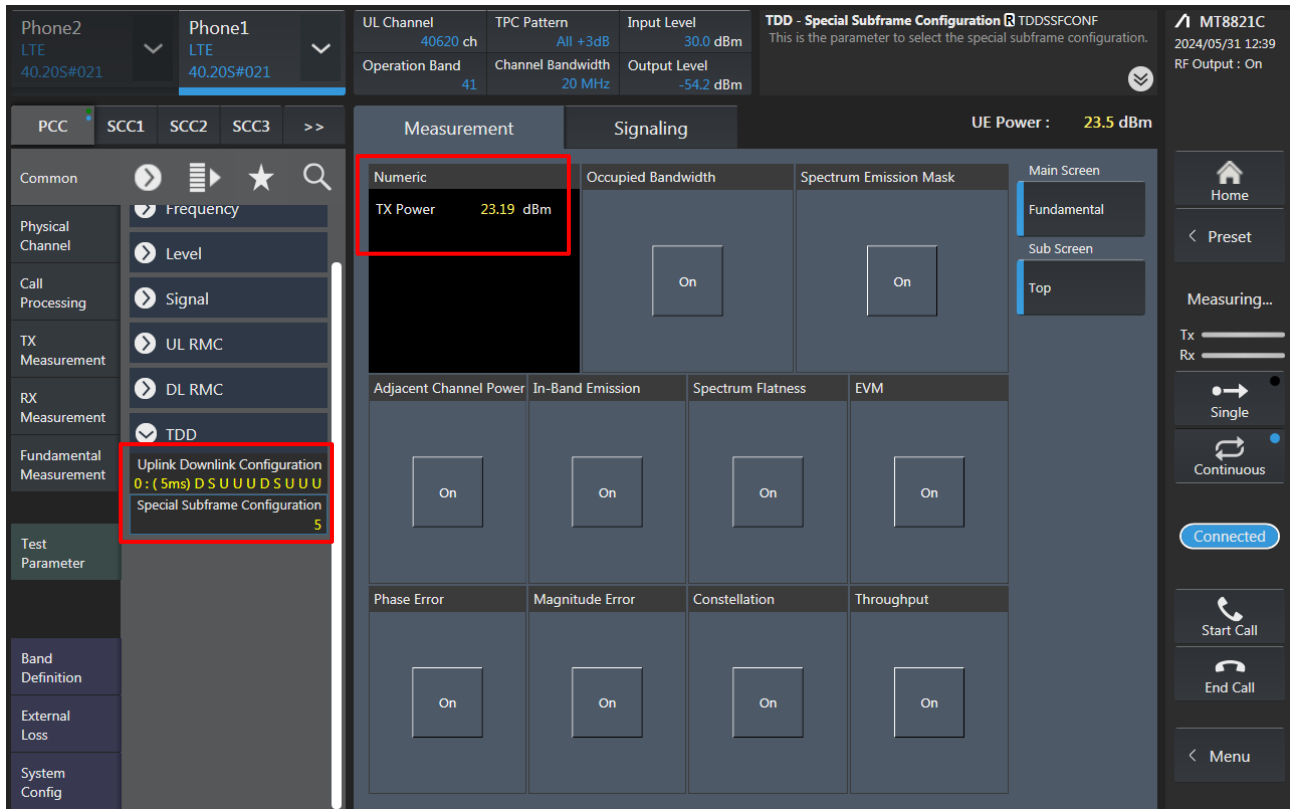
The screenshot shows the WCDMA measurement interface. The top bar displays 'Phone2 LTE 40.20S#032' and 'Phone1 W-CDMA 40.00 #013'. The 'Measurement' tab is active, showing 'Fundamental' and 'Numeric' views. The 'Power Measurement' section is highlighted with a red box, showing 'TX Power' as 23.28 dBm. The 'Occupied Bandwidth' section shows 'OBW' as 4.163 MHz. The 'Adjacent Channel Power' section shows 'ACLR(-5MHz)' as -40.24 dB and 'ACLR(+5MHz)' as -42.79 dB. The 'Modulation Analysis' section shows 'EVM' as 5.15 % (rms). The 'Peak Code Domain Error' section shows 'PCDE' as -39.86 dB. The 'UE Power' is 22.6 dBm. The 'Physical Channel' section shows 'Authentication / Integrity' and 'Integrity Protection' as 'On'. The 'Call Processing' section shows 'SIM Model Number' as 'P0035'. The 'TX Measurement' section shows 'Authentication Algorithm' as 'XOR'. The 'RX Measurement' section shows 'Authentication Key Ki' as '00112233 44556677 8899AABB CCDDDEFF' and 'AMF' as '0000 H'. The 'Fundamental Measurement' section shows 'Opc' as '00000000 00000000 00000000 00000000'. The 'Meas Setup' section shows 'Inner Loop Power Control' as 'On' and 'Power Control Algorithm' as 'Algorithm 1'. The 'External Loss' section shows 'Power Control' as 'All 1'. The 'System Config' section shows 'User Command' as '10101 01010 10101 01010 10101 01010 01010 01010'. The 'MT8821C' section shows '2024/05/24 12:58' and 'RF Output : On'.

<LTE>



The screenshot shows the LTE measurement interface. The top bar displays 'Phone2 LTE 40.20S#021' and 'Phone1 LTE 40.20S#021'. The 'Measurement' tab is active, showing 'Numeric' and 'Occupied Bandwidth' views. The 'TX Power' is 23.01 dBm. The 'Occupied Bandwidth' section shows 'OBW' as 4.163 MHz. The 'Adjacent Channel Power' section shows 'ACLR(-5MHz)' as -40.24 dB and 'ACLR(+5MHz)' as -42.79 dB. The 'Modulation Analysis' section shows 'EVM' as 5.15 % (rms). The 'Peak Code Domain Error' section shows 'PCDE' as -39.86 dB. The 'UE Power' is 23.4 dBm. The 'Physical Channel' section shows 'General' and 'Frequency' as 'On'. The 'Call Processing' section shows 'Level' as 'On'. The 'TX Measurement' section shows 'Signal' as 'On'. The 'RX Measurement' section shows 'UL RMC' as 'On' and 'DL RMC' as 'On'. The 'Fundamental Measurement' section shows 'TDD' as 'On'. The 'Test Parameter' section shows 'Uplink Downlink Configuration 1: (5ms) D S U U D D S U U D' and 'Special Subframe Configuration' as '4'. The 'Band Definition' section shows 'Band' as '40.20S#021'. The 'External Loss' section shows 'External Loss - Main DL' as 'DLEXTLOSS'. The 'System Config' section shows 'User Command' as '10101 01010 10101 01010 10101 01010 01010 01010'. The 'MT8821C' section shows '2024/05/31 13:15' and 'RF Output : On'.

<LTE TDD Power class 3>



Phone2
LTE
40.20S#021

Phone1
LTE
40.20S#021

UL Channel 40620 ch
Operation Band 41

TPC Pattern All +3dB
Channel Bandwidth 20 MHz

Input Level 30.0 dBm
Output Level -54.2 dBm

TDD - Special Subframe Configuration TDDSSFCNF
This is the parameter to select the special subframe configuration.

MT8821C
2024/05/31 12:39
RF Output : On

PCC SCC1 SCC2 SCC3 >>

Common
Frequency
Level
Signal
UL RMC
DL RMC
TDD
Uplink Downlink Configuration 0: (5ms) D S U U U D S U U U
Special Subframe Configuration 5

Physical Channel
Call Processing
TX Measurement
RX Measurement
Fundamental Measurement
Test Parameter
Band Definition
External Loss
System Config

Measurement
Numeric
TX Power 23.19 dBm

Signaling
Occupied Bandwidth
Spectrum Emission Mask
On
On

Adjacent Channel Power
In-Band Emission
Spectrum Flatness
EVM
On
On
On
On

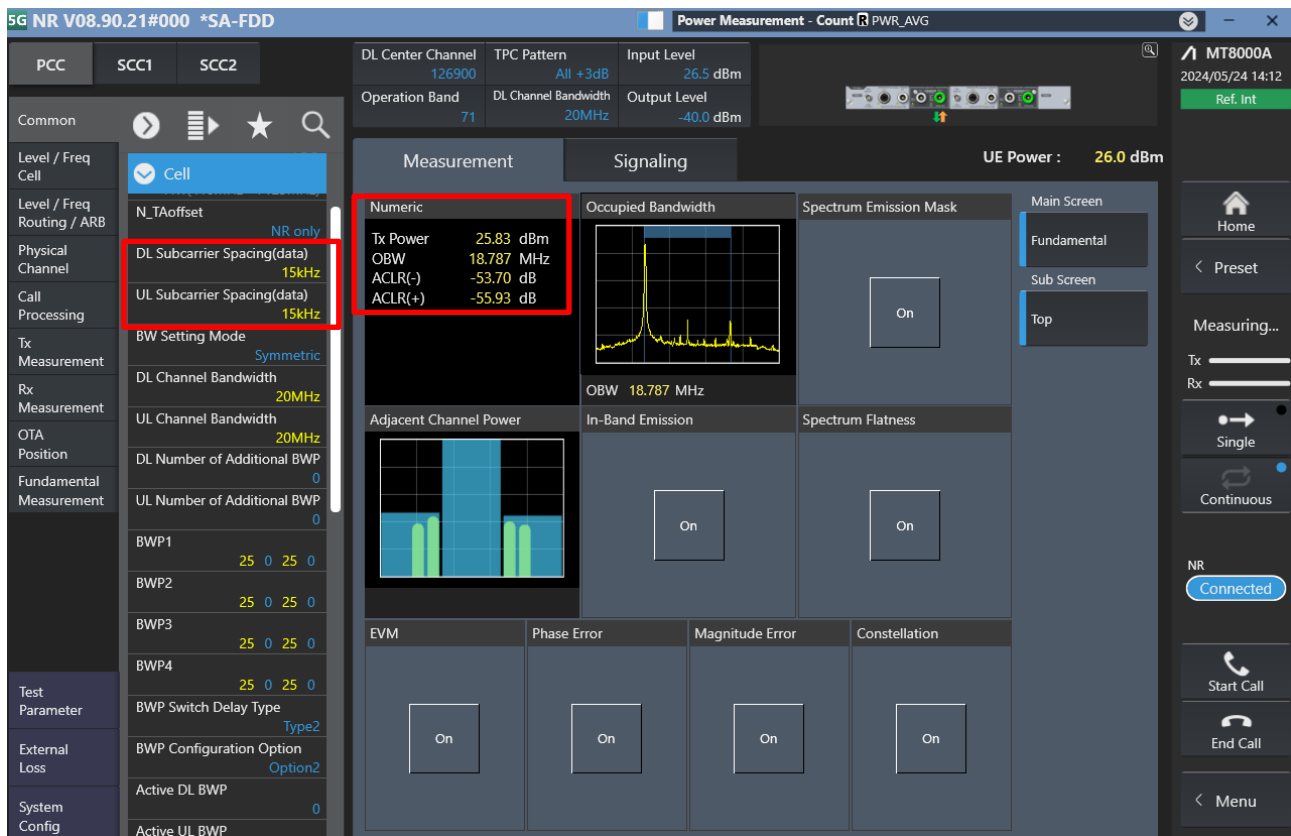
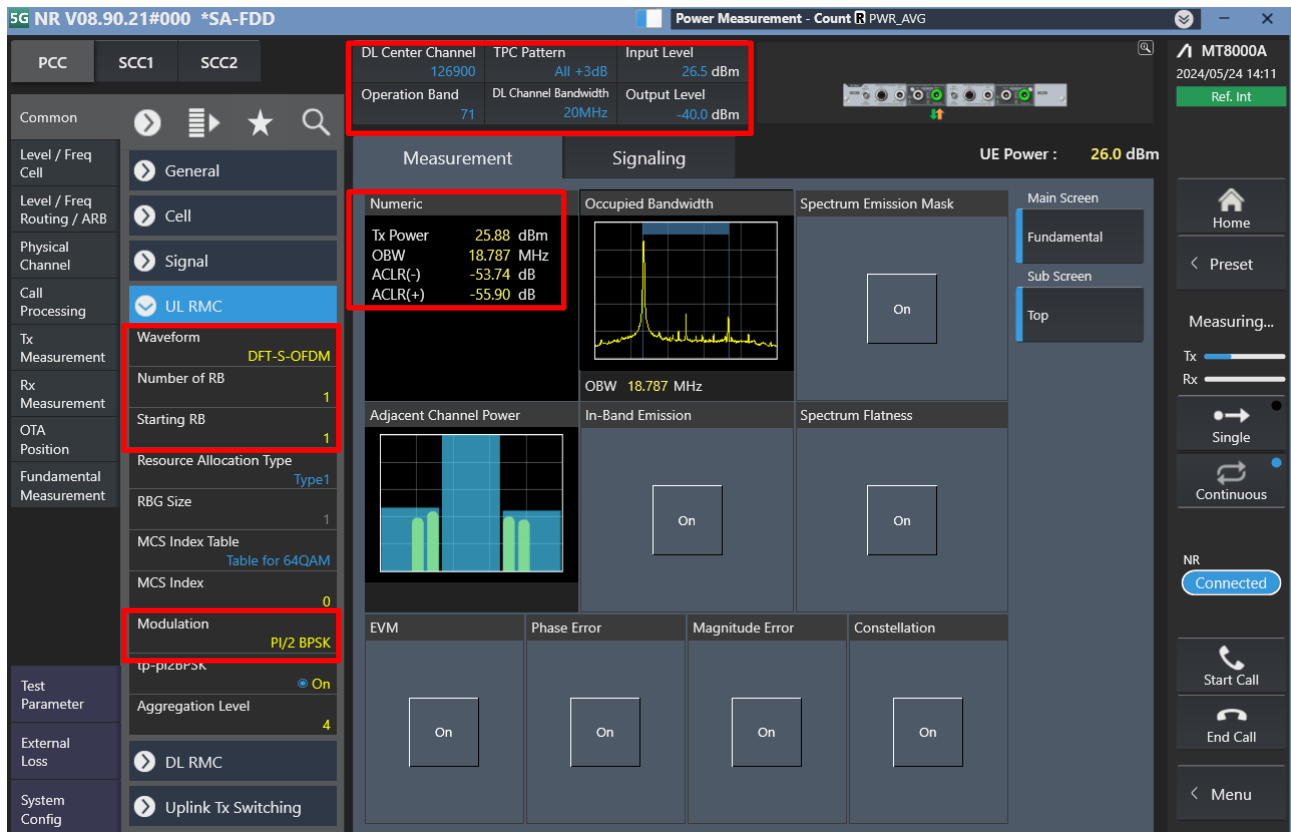
Phase Error
Magnitude Error
Constellation
Throughput
On
On
On
On

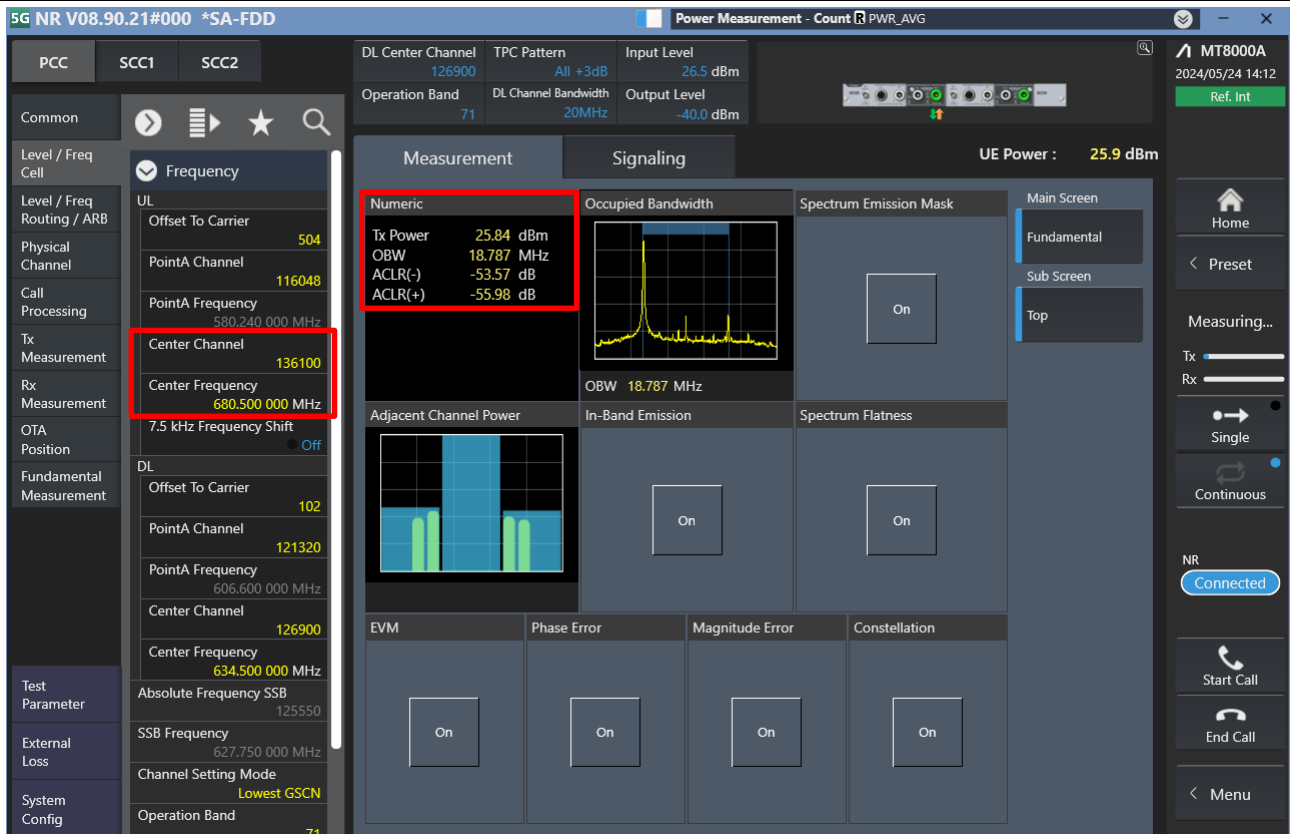
UE Power : 23.5 dBm

Main Screen
Fundamental
Sub Screen
Top

Home
Preset
Measuring...
Tx
Rx
Single
Continuous
Connected
Start Call
End Call
Menu

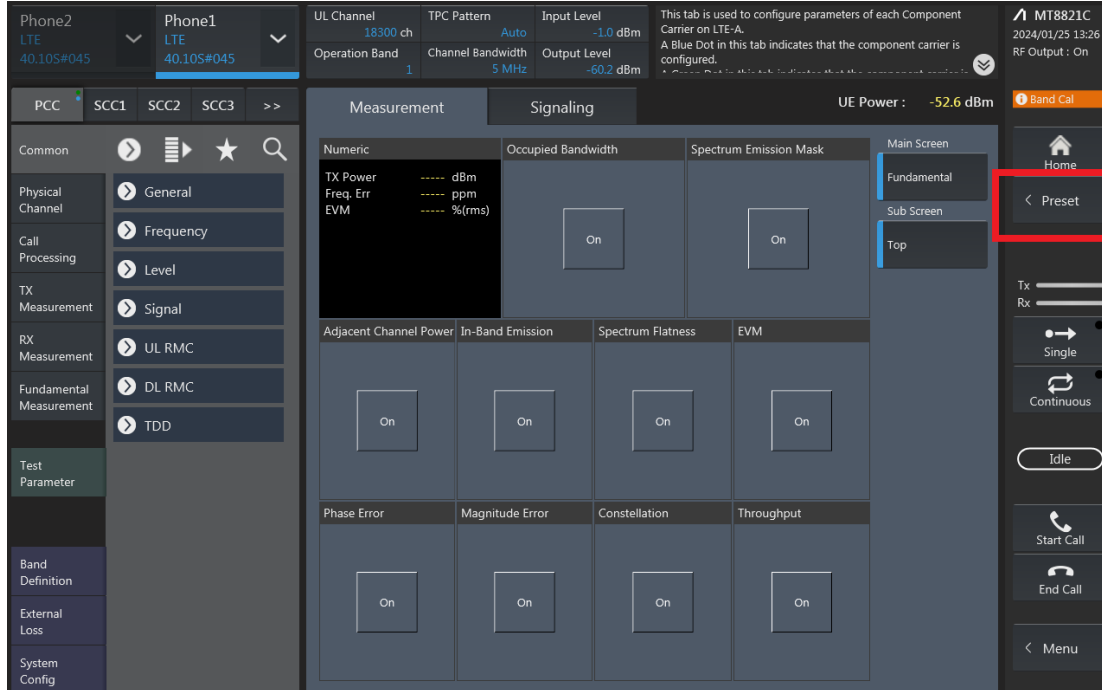
<5G NR FR1>





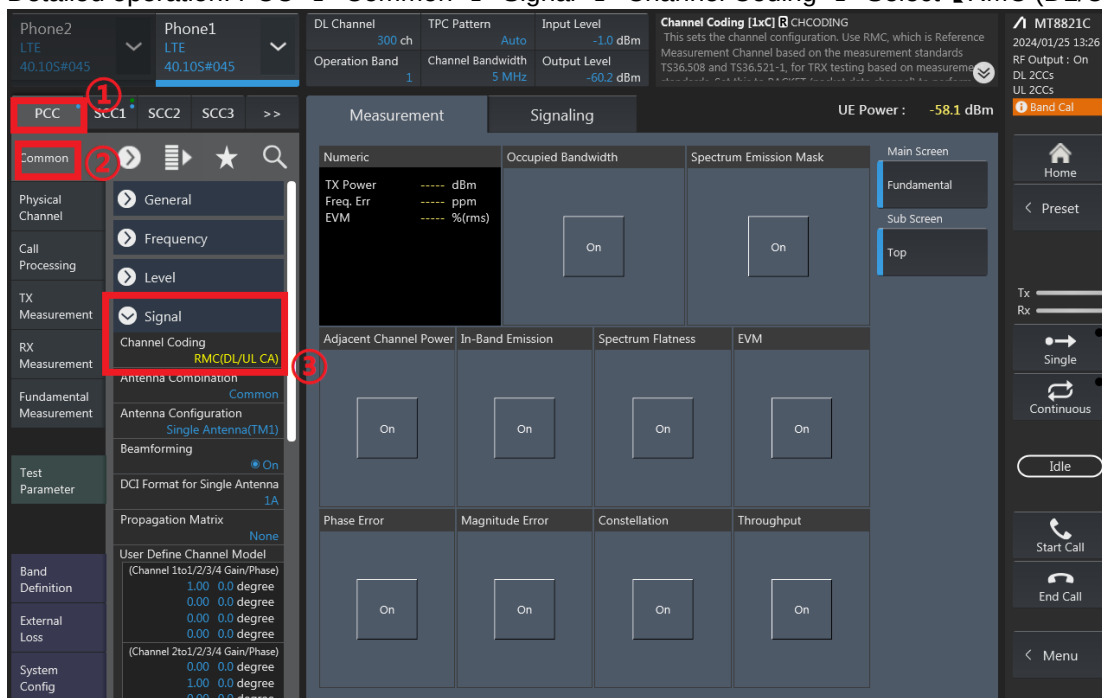
LTE Uplink and Downlink Carrier Aggregation configurations:

1. Change the Scenario in the Configuration of Phone1 LTE Signaling and Preset.

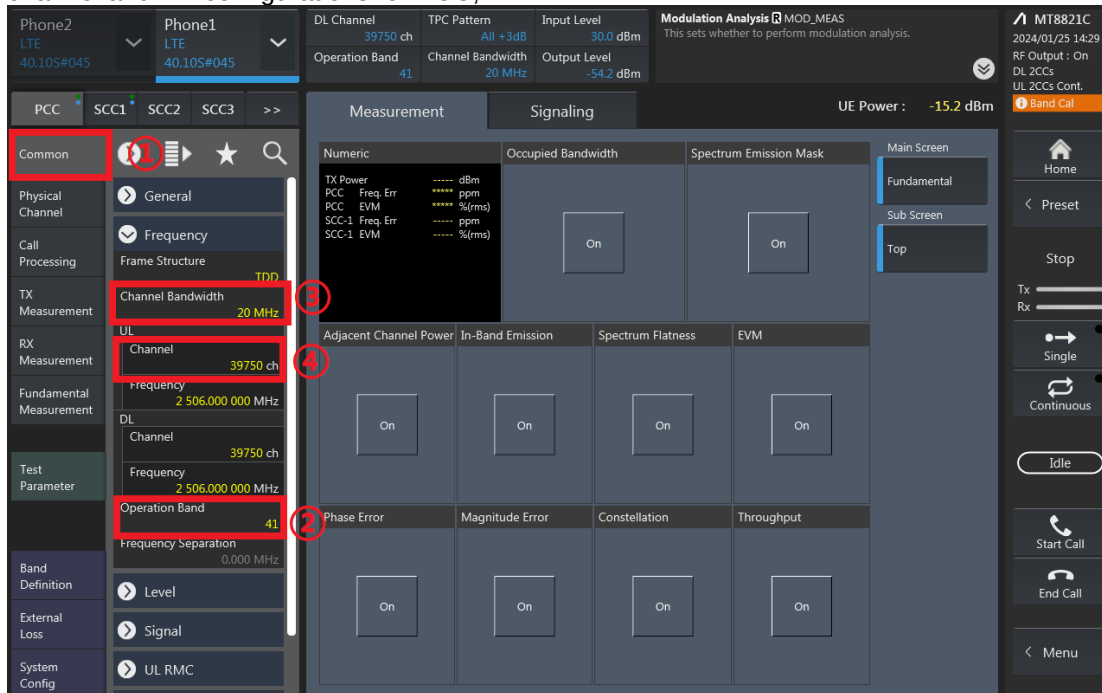


2. If Select "RMC (DL/UL CA)" for Uplink Carrier Aggregation;
If Select "RMC (DL CA)" for Downlink Carrier Aggregation.
For example, Uplink Carrier Aggregation:

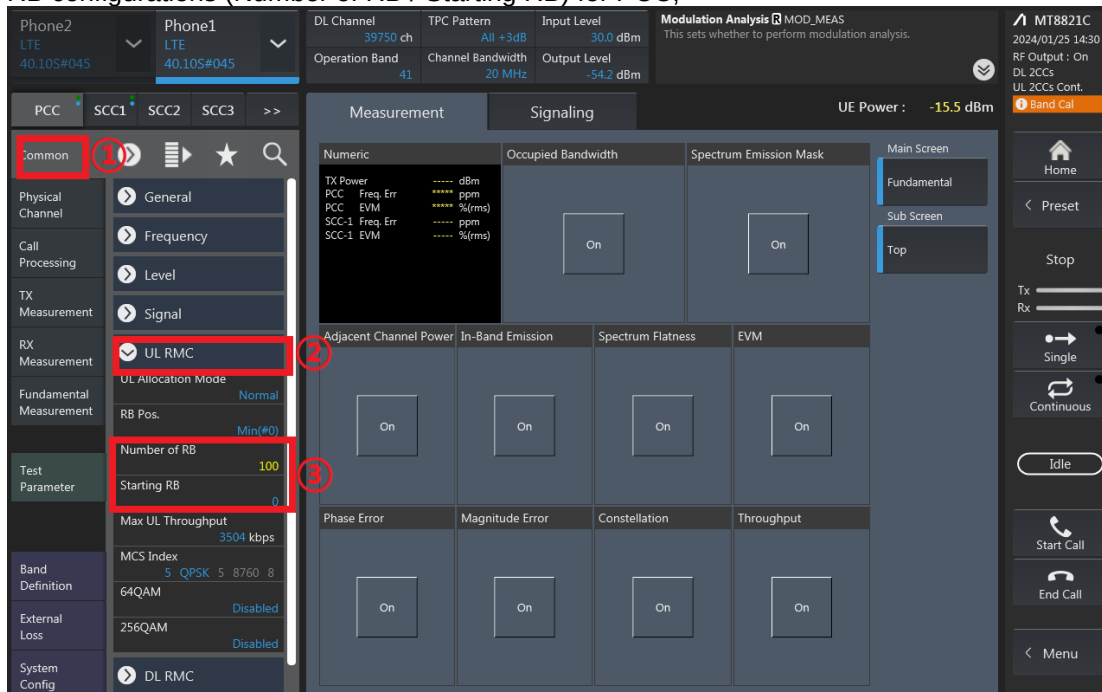
Detailed operation: PCC → Common → Signal → Channel Coding → Select 【RMC (DL/UL CA)】



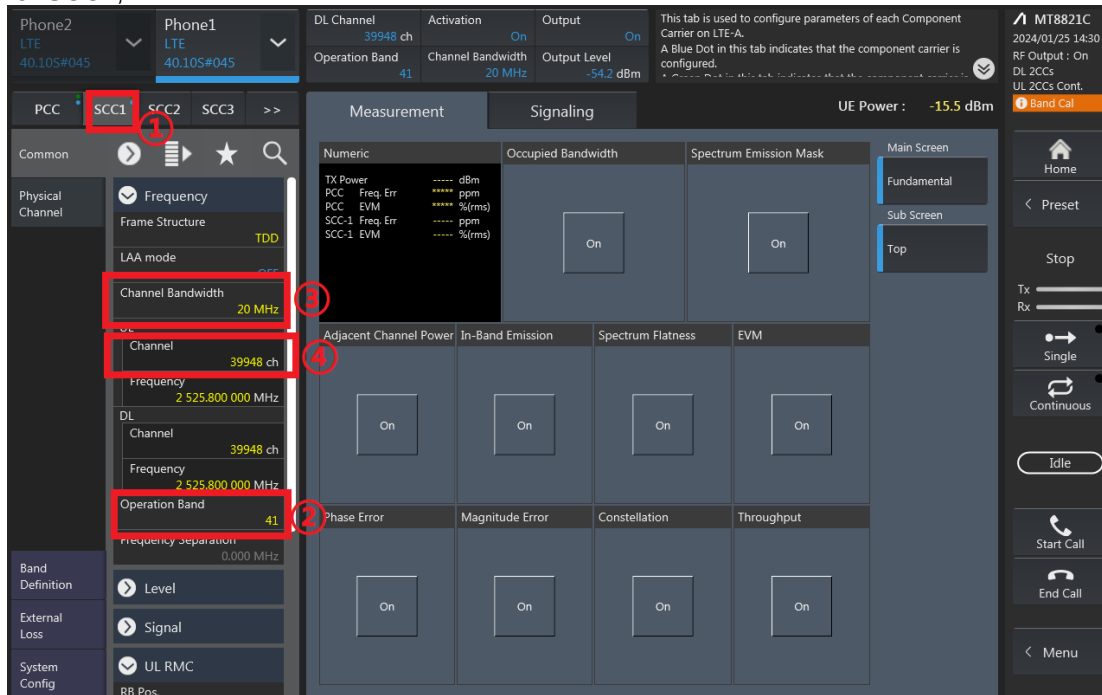
3. PCC parameter Settings: on the screen, and then select the PCC tab and Set operating band, BW, channel and RB configurations for PCC;



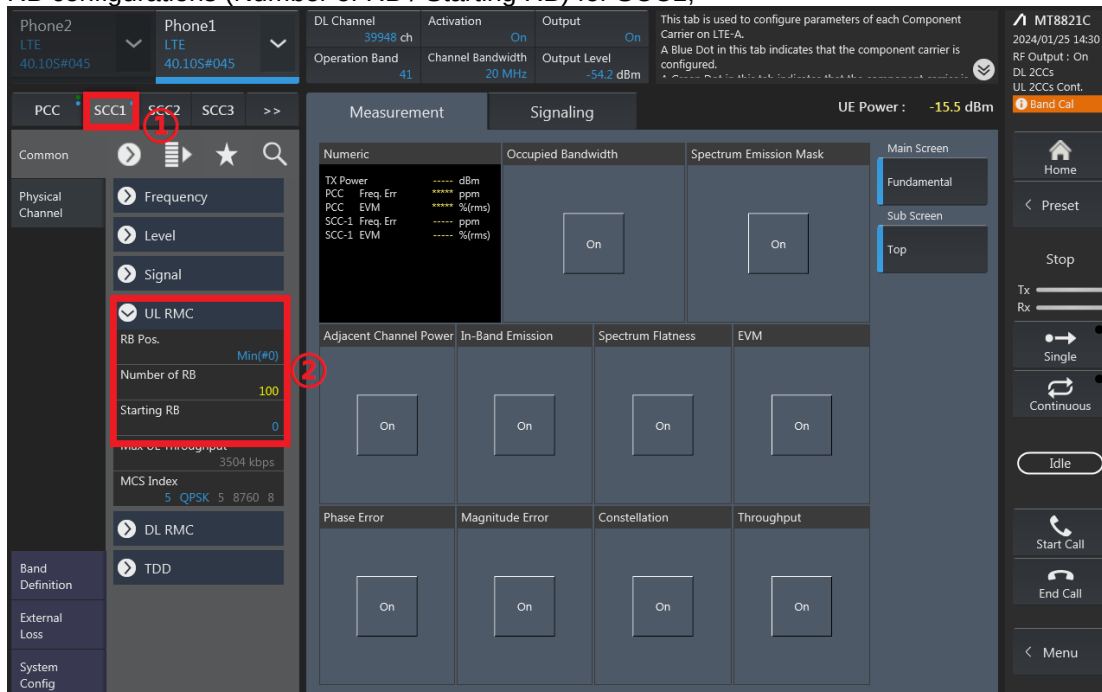
RB configurations (Number of RB / Starting RB) for PCC;



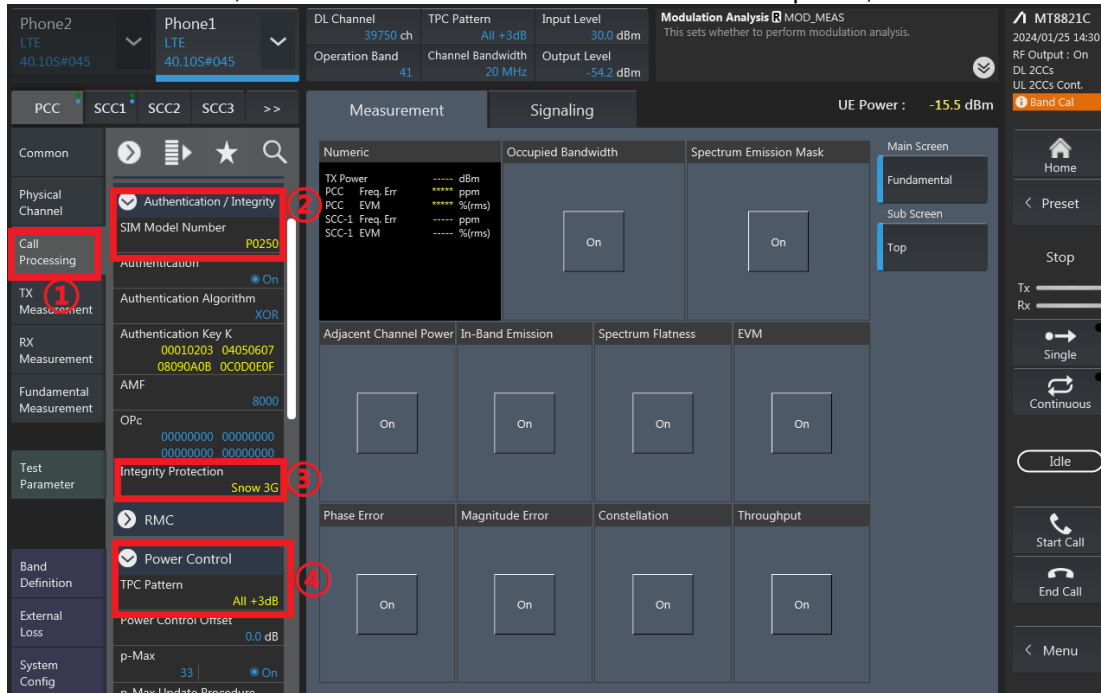
4. SCC parameter Settings: Select the SCC1 tab, Set operating band, BW, channel, and RB configurations for SCC1;



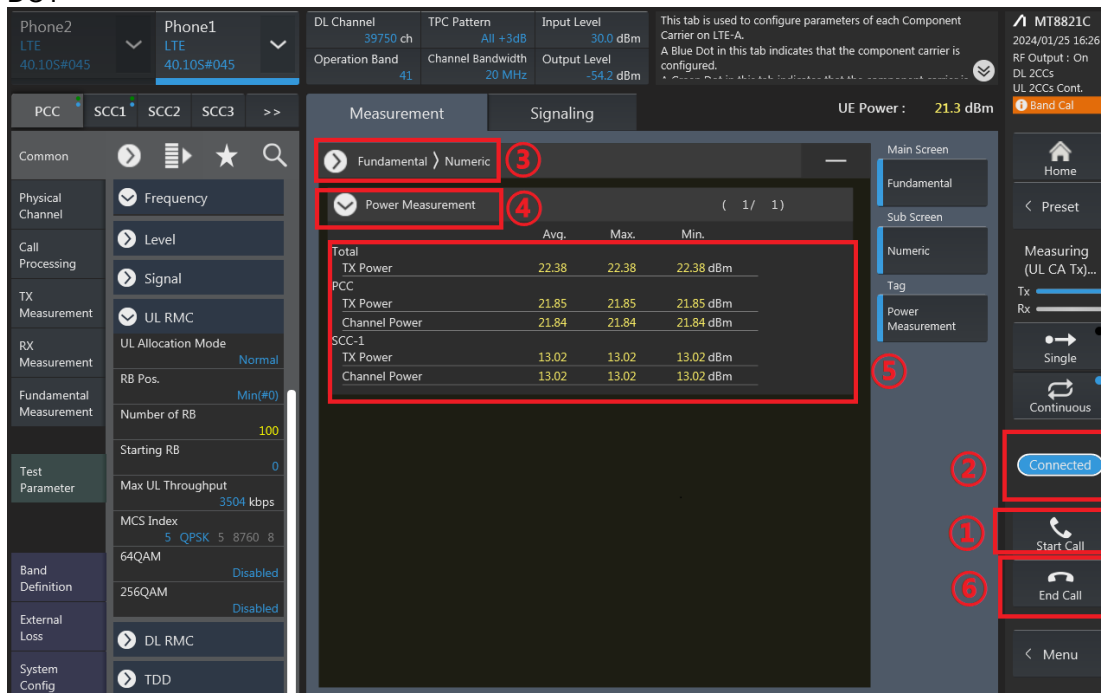
RB configurations (Number of RB / Starting RB) for SCC1;



5. Select the PCC tab, then set “SIM Model Number” and select max power;



6. Click the “Connect” button at the Right of the screen, if necessary, turn the Airplane mode on/off in the DUT



7. The inter-band ULCA test method is similar to intra-band ULCA, and DLCA test method is similar to intra-band ULCA too.

CA 7C_Ant 13 Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Power Reduction	Measured Power (dBm)	Turn up Power (dBm)
			RB Size	RB offset	RB Size	RB offset					
20850	21048	QPSK	1	0	0	0	1	0	Full	23.01	24.50
21100	20902	QPSK	1	0	0	0	1	0	Full	23.05	24.50
21350	21152	QPSK	1	0	0	0	1	0	Full	23.42	24.50
20850	21048	QPSK	1	0	0	0	1	0	ECI 2	17.11	18.50
21100	20902	QPSK	1	0	0	0	1	0	ECI 2	17.56	18.50
21350	21152	QPSK	1	0	0	0	1	0	ECI 2	17.34	18.50
20850	21048	QPSK	1	0	0	0	1	0	ECI 3	17.11	18.50
21100	20902	QPSK	1	0	0	0	1	0	ECI 3	17.56	18.50
21350	21152	QPSK	1	0	0	0	1	0	ECI 3	17.34	18.50
20850	21048	QPSK	1	0	0	0	1	0	ECI 4	21.13	22.50
21100	20902	QPSK	1	0	0	0	1	0	ECI 4	21.46	22.50
21350	21152	QPSK	1	0	0	0	1	0	ECI 4	21.32	22.50
20850	21048	QPSK	1	0	0	0	1	0	ECI 5	17.57	18.00
21100	20902	QPSK	1	0	0	0	1	0	ECI 5	18.03	18.00
21350	21152	QPSK	1	0	0	0	1	0	ECI 5	17.81	18.00
20850	21048	QPSK	1	0	0	0	1	0	ECI 8&9/10	16.12	17.50
21100	20902	QPSK	1	0	0	0	1	0	ECI 8&9/10	16.54	17.50
21350	21152	QPSK	1	0	0	0	1	0	ECI 8&9/10	16.33	17.50

CA 7C_Ant 31 Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Power Reduction	Measured Power (dBm)	Turn up Power (dBm)
			RB Size	RB offset	RB Size	RB offset					
20850	21048	QPSK	1	0	0	0	1	0	Full	23.33	25.00
21100	20902	QPSK	1	0	0	0	1	0	Full	23.70	25.00
21350	21152	QPSK	1	0	0	0	1	0	Full	23.52	25.00
20850	21048	QPSK	1	0	0	0	1	0	ECI 2	23.33	25.00
21100	20902	QPSK	1	0	0	0	1	0	ECI 2	23.70	25.00
21350	21152	QPSK	1	0	0	0	1	0	ECI 2	23.52	25.00
20850	21048	QPSK	1	0	0	0	1	0	ECI 3	23.33	25.00
21100	20902	QPSK	1	0	0	0	1	0	ECI 3	23.70	25.00
21350	21152	QPSK	1	0	0	0	1	0	ECI 3	23.52	25.00
20850	21048	QPSK	1	0	0	0	1	0	ECI 4	23.33	25.00
21100	20902	QPSK	1	0	0	0	1	0	ECI 4	23.70	25.00
21350	21152	QPSK	1	0	0	0	1	0	ECI 4	23.52	25.00
20850	21048	QPSK	1	0	0	0	1	0	ECI 5	21.15	22.50
21100	20902	QPSK	1	0	0	0	1	0	ECI 5	21.35	22.50
21350	21152	QPSK	1	0	0	0	1	0	ECI 5	21.15	22.50
20850	21048	QPSK	1	0	0	0	1	0	ECI 8&9/10	20.95	22.50
21100	20902	QPSK	1	0	0	0	1	0	ECI 8&9/10	21.35	22.50
21350	21152	QPSK	1	0	0	0	1	0	ECI 8&9/10	21.15	22.50

CA 7C_Ant 11 Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Power Reduction	Measured Power (dBm)	Turn up Power (dBm)
			RB Size	RB offset	RB Size	RB offset					
20850	21048	QPSK	1	0	0	0	1	0	Full	23.18	25.00
21100	20902	QPSK	1	0	0	0	1	0	Full	23.45	25.00
21350	21152	QPSK	1	0	0	0	1	0	Full	23.85	25.00
20850	21048	QPSK	1	0	0	0	1	0	ECI 2	19.07	20.50
21100	20902	QPSK	1	0	0	0	1	0	ECI 2	19.35	20.50
21350	21152	QPSK	1	0	0	0	1	0	ECI 2	18.16	20.50
20850	21048	QPSK	1	0	0	0	1	0	ECI 3	19.07	20.50
21100	20902	QPSK	1	0	0	0	1	0	ECI 3	19.35	20.50
21350	21152	QPSK	1	0	0	0	1	0	ECI 3	18.16	20.50
20850	21048	QPSK	1	0	0	0	1	0	ECI 4	23.18	25.00
21100	20902	QPSK	1	0	0	0	1	0	ECI 4	23.45	25.00
21350	21152	QPSK	1	0	0	0	1	0	ECI 4	23.85	25.00
20850	21048	QPSK	1	0	0	0	1	0	ECI 5	18.06	19.50
21100	20902	QPSK	1	0	0	0	1	0	ECI 5	18.32	19.50
21350	21152	QPSK	1	0	0	0	1	0	ECI 5	18.13	19.50
20850	21048	QPSK	1	0	0	0	1	0	ECI 8&9/10	16.51	18.00
21100	20902	QPSK	1	0	0	0	1	0	ECI 8&9/10	16.79	18.00
21350	21152	QPSK	1	0	0	0	1	0	ECI 8&9/10	16.63	18.00

CA 41C_Ant 13 Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Power Reduction	Measured Power (dBm)	Turn up Power (dBm)
			RB Size	RB offset	RB Size	RB offset					
39750	39648	QPSK	1	0	0	0	1	0	Full	23.23	25.00
40185	39987	QPSK	1	0	0	0	1	0	Full	23.54	25.00
40620	40422	QPSK	1	0	0	0	1	0	Full	23.53	25.00
41055	40857	QPSK	1	0	0	0	1	0	Full	23.32	25.00
41490	41292	QPSK	1	0	0	0	1	0	Full	23.03	25.00
39750	39648	QPSK	1	0	0	0	1	0	ECI 2	19.03	20.00
40185	39987	QPSK	1	0	0	0	1	0	ECI 2	19.19	20.00
40620	40422	QPSK	1	0	0	0	1	0	ECI 2	19.28	20.00
41055	40857	QPSK	1	0	0	0	1	0	ECI 2	19.05	20.00
41490	41292	QPSK	1	0	0	0	1	0	ECI 2	19.19	20.00
39750	39648	QPSK	1	0	0	0	1	0	ECI 3	19.19	20.00
40185	39987	QPSK	1	0	0	0	1	0	ECI 3	19.28	20.00
40620	40422	QPSK	1	0	0	0	1	0	ECI 3	19.05	20.00
41055	40857	QPSK	1	0	0	0	1	0	ECI 3	19.18	20.00
41490	41292	QPSK	1	0	0	0	1	0	ECI 3	19.18	20.00
39750	39648	QPSK	1	0	0	0	1	0	ECI 4	23.23	25.00
40185	39987	QPSK	1	0	0	0	1	0	ECI 4	23.54	25.00
40620	40422	QPSK	1	0	0	0	1	0	ECI 4	23.53	25.00
41055	40857	QPSK	1	0	0	0	1	0	ECI 4	23.32	25.00
41490	41292	QPSK	1	0	0	0	1	0	ECI 4	23.03	25.00
39750	39648	QPSK	1	0	0	0	1	0	ECI 5	20.53	21.50
40185	39987	QPSK	1	0	0	0	1	0	ECI 5	20.67	21.50
40620	40422	QPSK	1	0	0	0	1	0	ECI 5	20.76	21.50
41055	40857	QPSK	1	0	0	0	1	0	ECI 5	20.56	21.50
41490	41292	QPSK	1	0	0	0	1	0	ECI 5	20.76	21.50
39750	39648	QPSK	1	0	0	0	1	0	ECI 8&9/10	19.01	20.00
40185	39987	QPSK	1	0	0	0	1	0	ECI 8&9/10	19.16	20.00
40620	40422	QPSK	1	0	0	0	1	0	ECI 8&9/10	19.22	20.00
41055	40857	QPSK	1	0	0	0	1	0	ECI 8&9/10	19.03	20.00
41490	41292	QPSK	1	0	0	0	1	0	ECI 8&9/10	19.16	20.00

CA 41C_Ant 31 Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Power Reduction	Measured Power (dBm)	Turn up Power (dBm)
			RB Size	RB offset	RB Size	RB offset					
39750	39648	QPSK	1	0	0	0	1	0	Full	24.23	25.00
40185	39987	QPSK	1	0	0	0	1	0	Full	24.39	25.00
40620	40422	QPSK	1	0	0	0	1	0	Full	24.17	25.00
41055	40857	QPSK	1	0	0	0	1	0	Full	24.42	25.00
41490	41292	QPSK	1	0	0	0	1	0	Full	24.16	25.00
39750	39648	QPSK	1	0	0	0	1	0	ECI 2	24.23	25.00
40185	39987	QPSK	1	0	0	0	1	0	ECI 2	24.39	25.00
40620	40422	QPSK	1	0	0	0	1	0	ECI 2	24.47	25.00
41055	40857	QPSK	1	0	0	0	1	0	ECI 2	24.12	25.00
41490	41292	QPSK	1	0	0	0	1	0	ECI 2	24.16	25.00
39750	39648	QPSK	1	0	0	0	1	0	ECI 3	24.23	25.00
40185	39987	QPSK	1	0	0	0	1	0	ECI 3	24.39	25.00
40620	40422	QPSK	1	0	0	0	1	0	ECI 3	24.43	25.00
41055	40857	QPSK	1	0	0	0	1	0	ECI 3	24.12	25.00
41490	41292	QPSK	1	0	0	0	1	0	ECI 3	24.12	25.00
39750	39648	QPSK	1	0	0	0	1	0	ECI 3	24.16	25.00
40185	39987	QPSK	1	0	0	0	1	0	ECI 4	21.58	22.00
40620	40422	QPSK	1	0	0	0	1	0	ECI 4	21.70	22.00
41055	40857	QPSK	1	0	0	0	1	0	ECI 4	21.42	22.00
41490	41292	QPSK	1	0	0	0	1	0	ECI 4	21.45	22.00
39750	39648	QPSK	1	0	0	0	1	0	ECI 5	21.58	22.00
40185	39987	QPSK	1	0	0	0	1	0	ECI 5	21.70	22.00
40620	40422	QPSK	1	0	0	0	1	0	ECI 5	21.78	22.00
41055	40857	QPSK	1	0	0	0	1	0	ECI 5	21.42	22.00
41490	41292	QPSK	1	0	0	0	1	0	ECI 5	21.45	22.00
39750	39648	QPSK	1	0	0	0	1	0	ECI 8&9&10	21.56	22.00
40185	39987	QPSK	1	0	0	0	1	0	ECI 8&9&10	21.70	22.00
40620	40422	QPSK	1	0	0	0	1	0	ECI 8&9&10	21.78	22.00
41055	40857	QPSK	1	0	0	0	1	0	ECI 8&9&10	21.42	22.00
41490	41292	QPSK	1	0	0	0	1	0	ECI 8&9&10	21.45	22.00