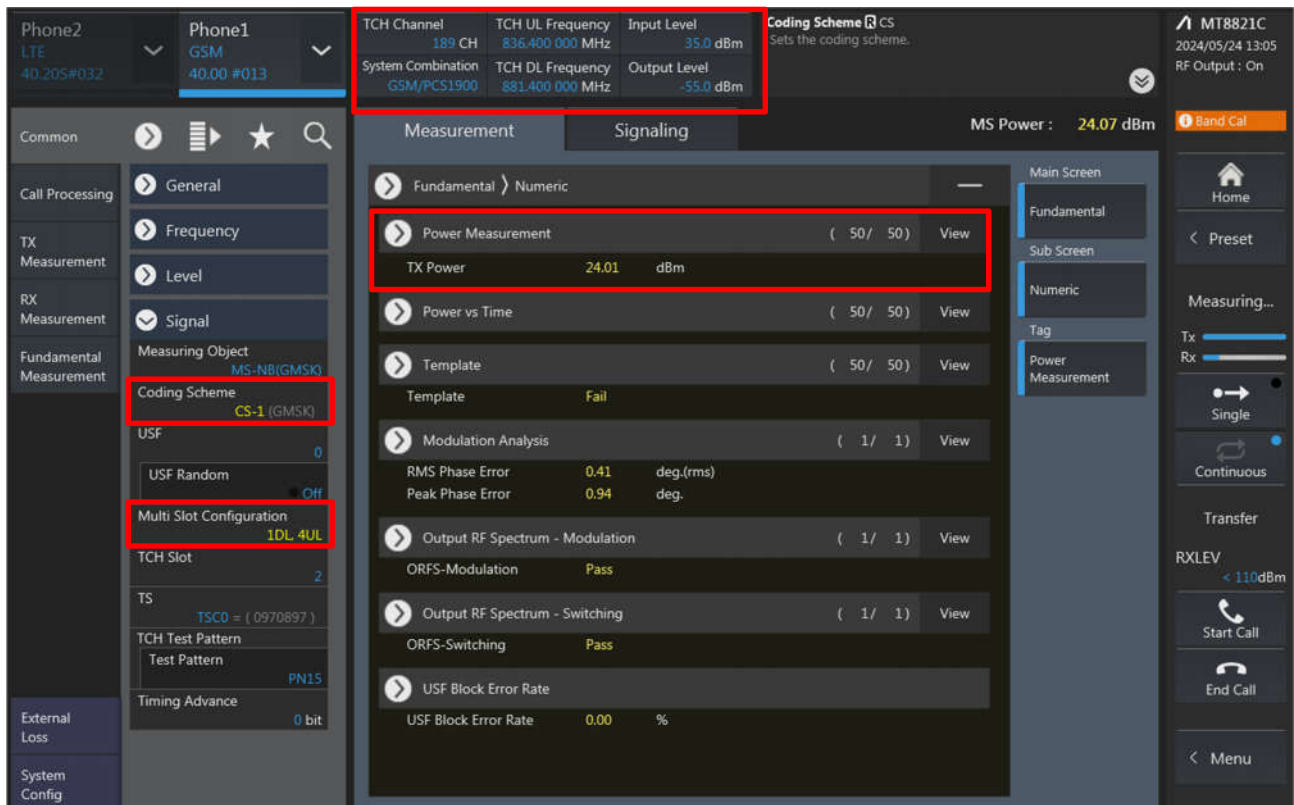


Power measurement connection diagram:

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.

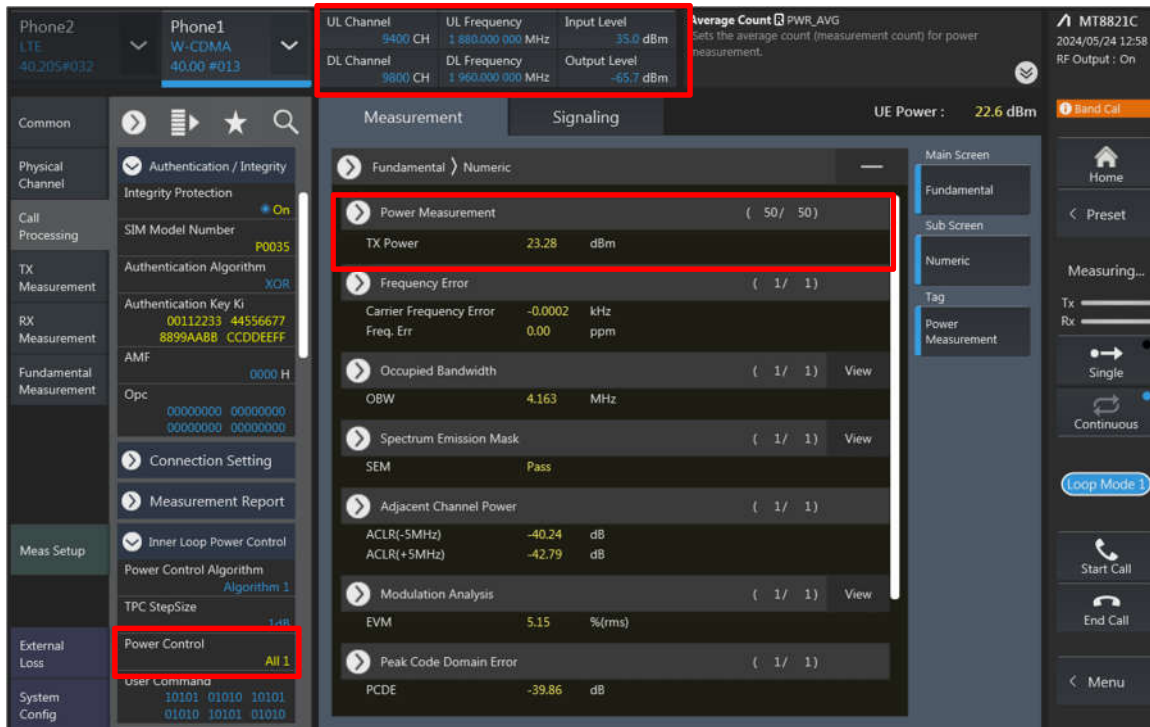
<GSM>



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 Coding Scheme is CS. The TCH DL Frequency is 881.400 000 MHz, and Output Level is -55.0 dBm.
- Left Sidebar:** Contains navigation options like Call Processing, TX Measurement, RX Measurement, Fundamental Measurement, and External Loss. The 'Fundamental Measurement' section is expanded, showing 'Coding Scheme' as CS-1 (GMSK) and 'Multi Slot Configuration' as 1DL, 4UL.
- Main Area:** Displays 'Measurement' and 'Signaling' tabs. The 'Measurement' tab is active, showing 'Fundamental' and 'Numeric' views. The 'Power Measurement' section is highlighted, showing 'TX Power' as 24.01 dBm. Other measurements include 'Power vs Time', 'Template', 'Modulation Analysis', 'Output RF Spectrum - Modulation', 'Output RF Spectrum - Switching', and 'USF Block Error Rate'.
- Right Sidebar:** Shows 'Main Screen' and 'Sub Screen' options. The 'Power Measurement' tag is selected. The 'Transfer' section shows 'RXLEV' as < 110dBm. The 'Start Call' and 'End Call' buttons are visible.

<WCDMA>

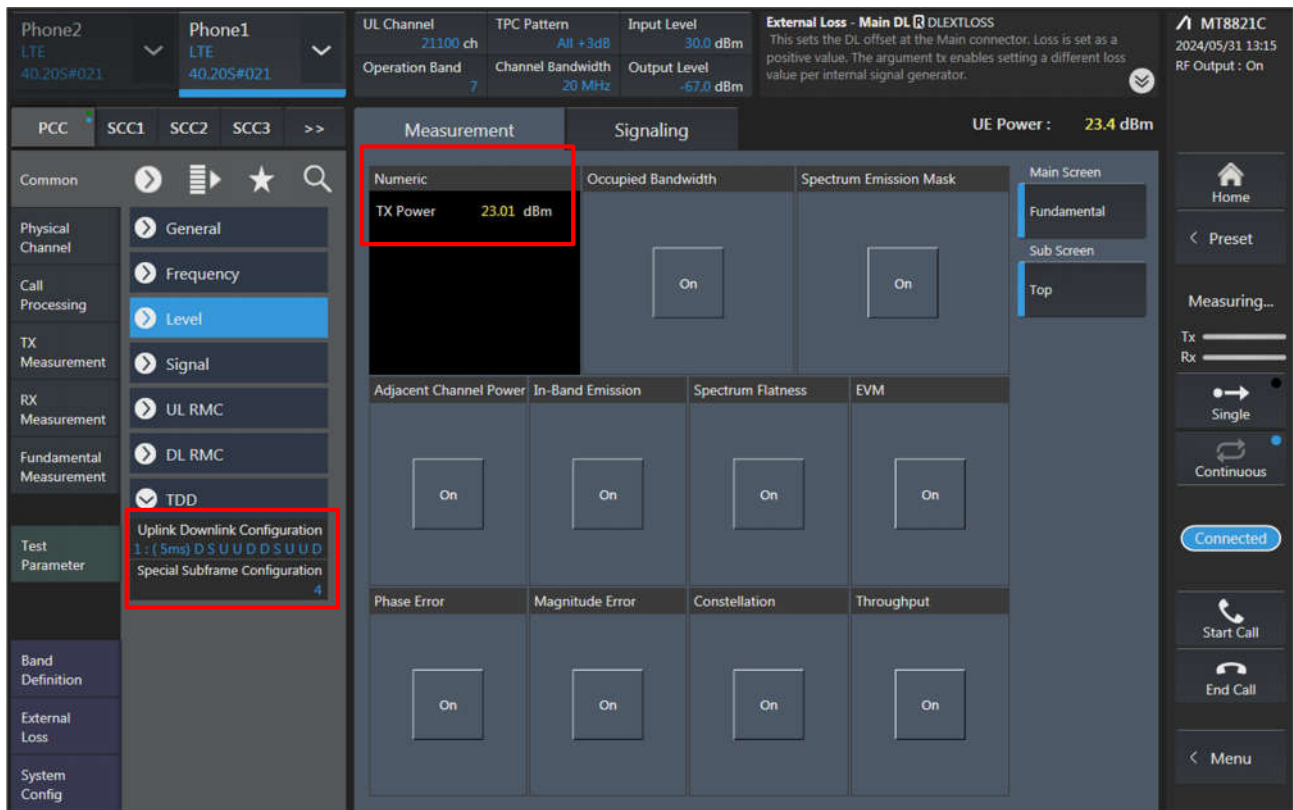


The WCDMA interface shows two phones (Phone2 and Phone1) connected. The main display is divided into sections for Physical Channel, Call Processing, TX Measurement, RX Measurement, Fundamental Measurement, Meas Setup, External Loss, and System Config. The Measurement section is active, showing various metrics like TX Power, Frequency Error, Occupied Bandwidth, Spectrum Emission Mask, Adjacent Channel Power, Modulation Analysis, and Peak Code Domain Error. The TX Power is highlighted with a red box, showing 23.28 dBm. The Meas Setup section shows the Power Control setting set to All 1.

UL Channel	UL Frequency	Input Level
9400 CH	1 880.000 000 MHz	35.0 dBm
DL Channel	DL Frequency	Output Level
9800 CH	1 960.000 000 MHz	-65.7 dBm

Metric	Value	Unit
TX Power	23.28	dBm
Frequency Error	-0.0002	kHz
Carrier Frequency Error	0.00	ppm
Occupied Bandwidth	4.163	MHz
Spectrum Emission Mask	Pass	
Adjacent Channel Power	-40.24	dB
ACL(-5MHz)	-42.79	dB
ACL(+5MHz)		
Modulation Analysis	5.15	%(rms)
Peak Code Domain Error	-39.86	dB
PCDE		

<LTE>

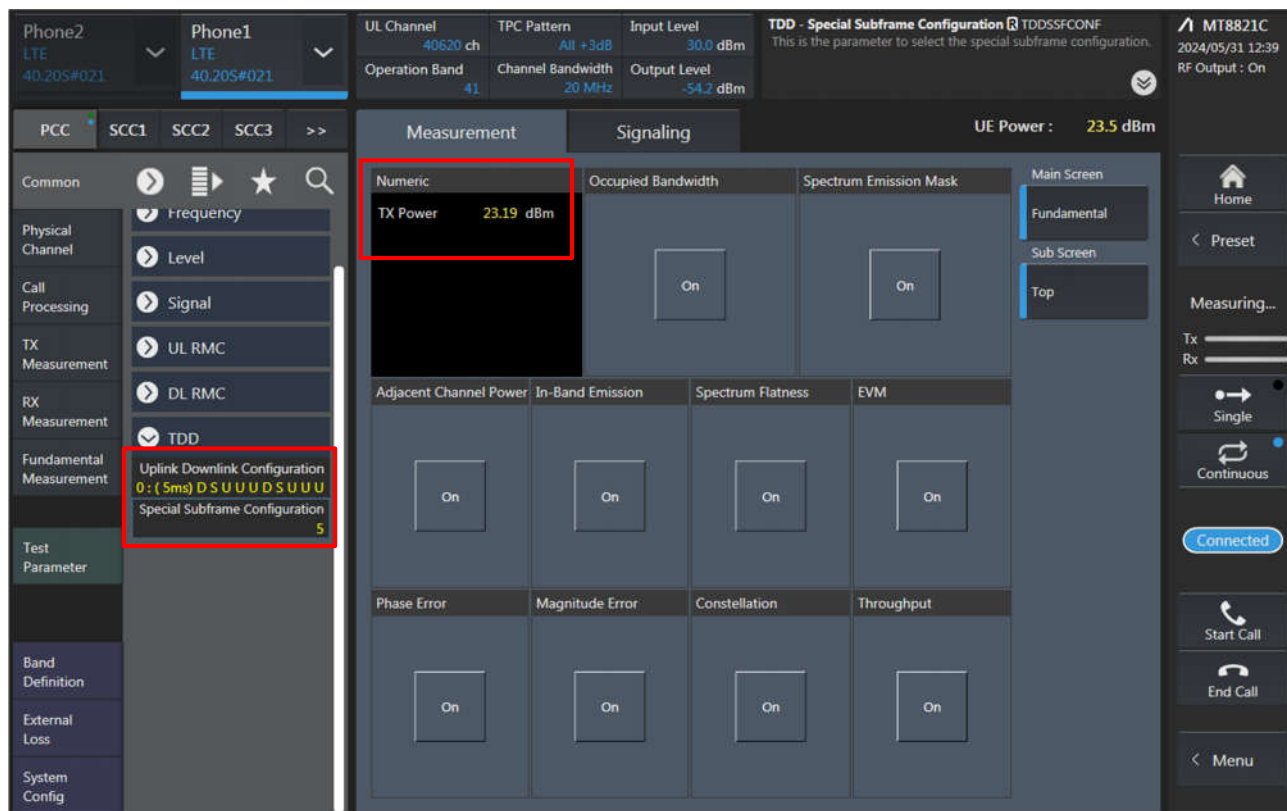


The LTE interface shows two phones (Phone2 and Phone1) connected. The main display is divided into sections for Physical Channel, Call Processing, TX Measurement, RX Measurement, Fundamental Measurement, Meas Setup, External Loss, and System Config. The Measurement section is active, showing various metrics like TX Power, Occupied Bandwidth, Spectrum Emission Mask, Adjacent Channel Power, In-Band Emission, Spectrum Flatness, EVM, Phase Error, Magnitude Error, Constellation, and Throughput. The TX Power is highlighted with a red box, showing 23.01 dBm. The Meas Setup section shows the Uplink Downlink Configuration set to 1: (5ms) DS U U D D S U U D and Special Subframe Configuration set to 4.

UL Channel	TPC Pattern	Input Level
21100 ch	All +3dB	30.0 dBm
Operation Band	Channel Bandwidth	Output Level
7	20 MHz	-67.0 dBm

Metric	Value	Unit
TX Power	23.01	dBm
Occupied Bandwidth	On	
Spectrum Emission Mask	On	
Adjacent Channel Power	On	
In-Band Emission	On	
Spectrum Flatness	On	
EVM	On	
Phase Error	On	
Magnitude Error	On	
Constellation	On	
Throughput	On	

<LTE TDD Power class 3>



Phone2 LTE 40.20S#021 Phone1 LTE 40.20S#021

UL Channel 40620 ch TPC Pattern All +3dB Input Level 30.0 dBm TDD - Special Subframe Configuration TDDSSFCONF This is the parameter to select the special subframe configuration. MT8821C 2024/05/31 12:39 RF Output : On

Operation Band 41 Channel Bandwidth 20 MHz Output Level -54.2 dBm

UE Power : 23.5 dBm

Measurement Signaling

Numeric TX Power 23.19 dBm

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

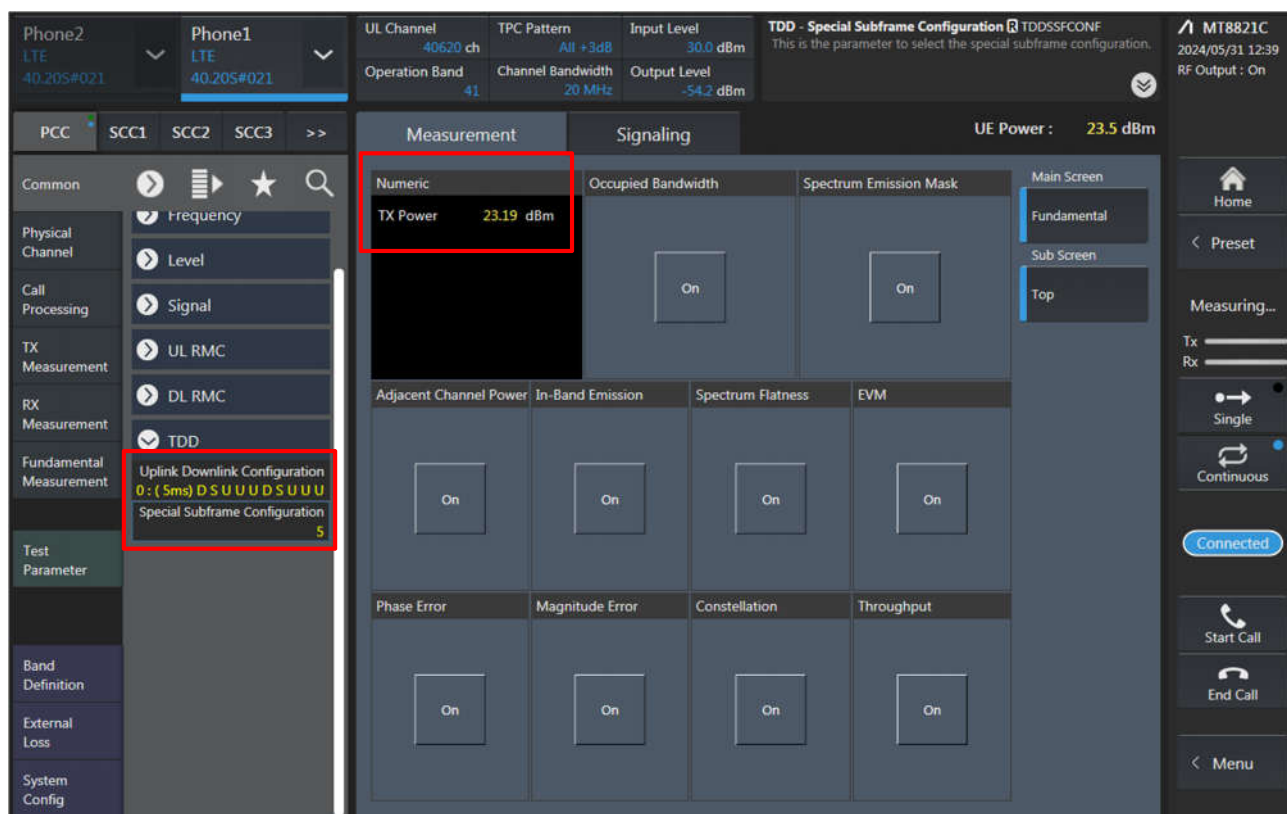
Common Frequency Level Signal UL RMC DL RMC TDD Uplink Downlink Configuration 0: (5ms) D S U U U D S U U U Special Subframe Configuration 5

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

Main Screen Fundamental Sub Screen Top

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

<LTE TDD Power class 2>



Phone2 LTE 40.20S#021 Phone1 LTE 40.20S#021

UL Channel 40620 ch TPC Pattern All +3dB Input Level 30.0 dBm TDD - Special Subframe Configuration TDDSSFCONF This is the parameter to select the special subframe configuration. MT8821C 2024/05/31 12:39 RF Output : On

Operation Band 41 Channel Bandwidth 20 MHz Output Level -54.2 dBm

UE Power : 23.5 dBm

Measurement Signaling

Numeric TX Power 23.19 dBm

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

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

Main Screen Fundamental Sub Screen Top

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

Phone2
LTE
40.20S#032

Phone1
LTE
40.20S#032

UL Channel
18900 ch

TPC Pattern
Alt +3dB

Input Level
35.0 dBm

Operation Band
2

Channel Bandwidth
20 MHz

Output Level
-54.2 dBm

Power Measurement - Meas. Count PWR_AVG
This sets the measurement count of the power measurement.

MT8821C
2024/05/24 12:51
RF Output : On

PCC

SCC1

SCC2

SCC3

>>

Common

Physical Channel

Call Processing

TX Measurement

RX Measurement

Fundamental Measurement

Test Parameter

Band Definition

External Loss

System Config

General

Frequency

Level

Signal

UL RMC

UL Allocation Mode
Normal

RB Pos.
Min(#0)

Number of RB
1

Starting RB
0

Max UL Throughput
72 kbps

MCS Index
5 QPSK 5 72 8

256QAM
Disabled

DL RMC

Measurement

Signaling

UE Power : 25.4 dBm

Band Cal

Home

Preset

Measuring...

Tx

Rx

Single

Continuous

Connected

Start Call

End Call

Menu

Fundamental

Numeric

Power Measurement (50 / 50)

TX Power 25.12 dBm

Modulation Analysis (1 / 1) View

Freq. Err 0.00 ppm

EVM 1.35 %(rms)

<5G NR FR1>

5G NR V08.90.21#000 *SA-FDD

Power Measurement - Count PWR_AVG

PCC

SCC1

SCC2

DL Center Channel
126900

TPC Pattern
Alt +3dB

Input Level
26.5 dBm

Operation Band
71

DL Channel Bandwidth
20MHz

Output Level
-40.0 dBm

MT8000A
2024/05/24 14:11
Ref. Int

Common

Level / Freq Cell

Level / Freq Routing / ARB

Physical Channel

Call Processing

Tx Measurement

Rx Measurement

OTA Position

Fundamental Measurement

Test Parameter

External Loss

System Config

General

Cell

Signal

UL RMC

Waveform
DFT-S-OFDM

Number of RB
1

Starting RB
1

Resource Allocation Type
Type1

RBG Size
1

MCS Index Table
Table for 64QAM

MCS Index
0

Modulation
PI/2 BPSK

Aggregation Level
4

DL RMC

Uplink Tx Switching

Measurement

Signaling

UE Power : 26.0 dBm

Home

Preset

Measuring...

Tx

Rx

Single

Continuous

Connected

Start Call

End Call

Menu

Numeric

Occupied Bandwidth

Spectrum Emission Mask

Top

Adjacent Channel Power

In-Band Emission

Spectrum Flatness

EVM

Phase Error

Magnitude Error

Constellation

Tx Power 25.88 dBm

OBW 18.787 MHz

OBW 18.787 MHz

ACL(-) -53.74 dB

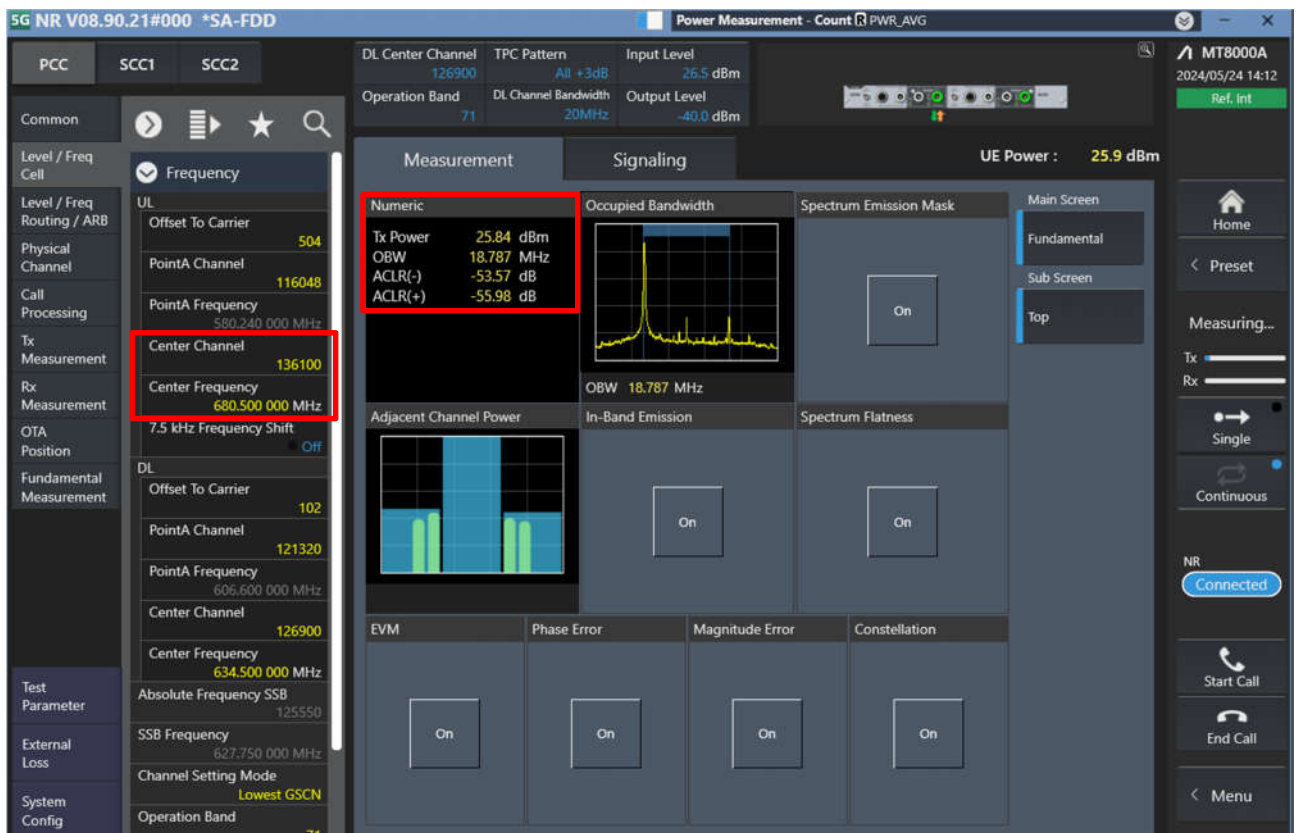
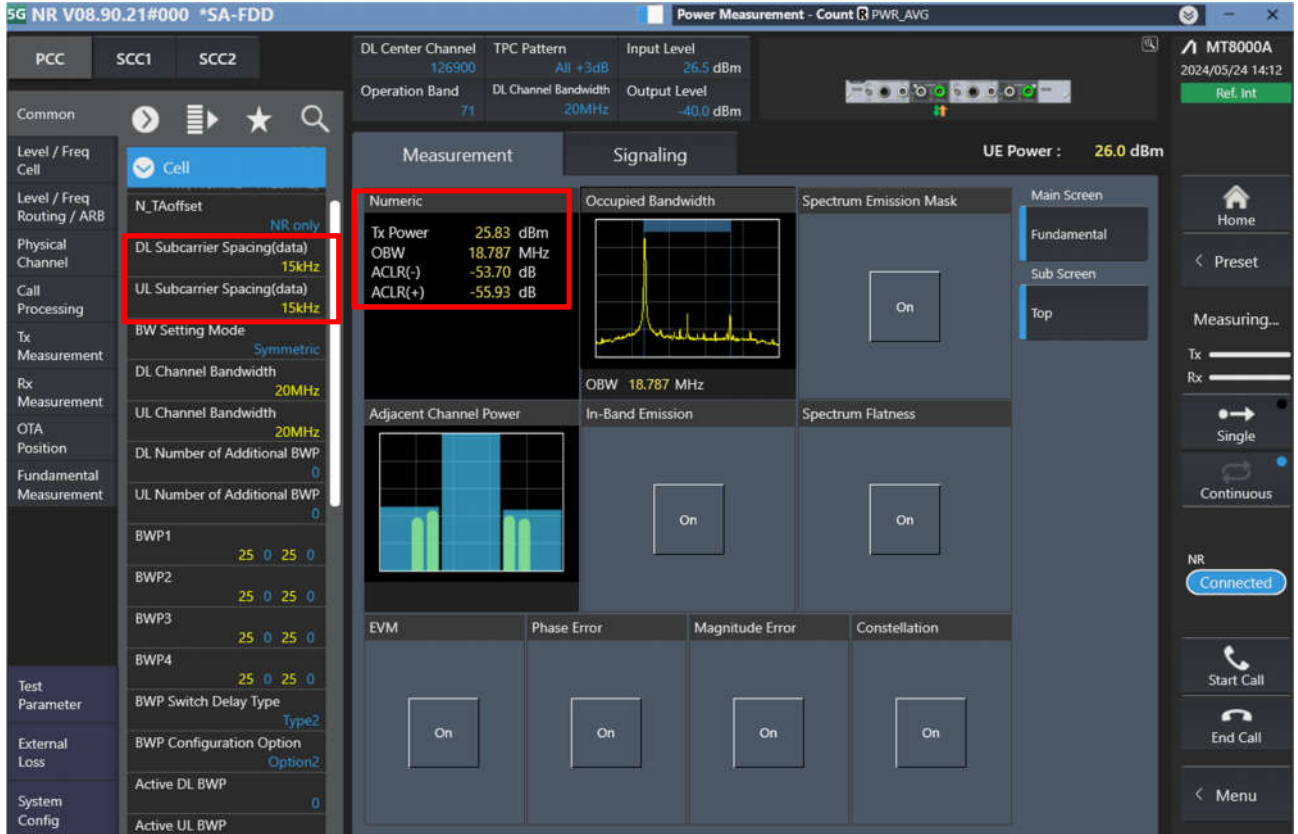
ACL(+) -55.90 dB

On

On

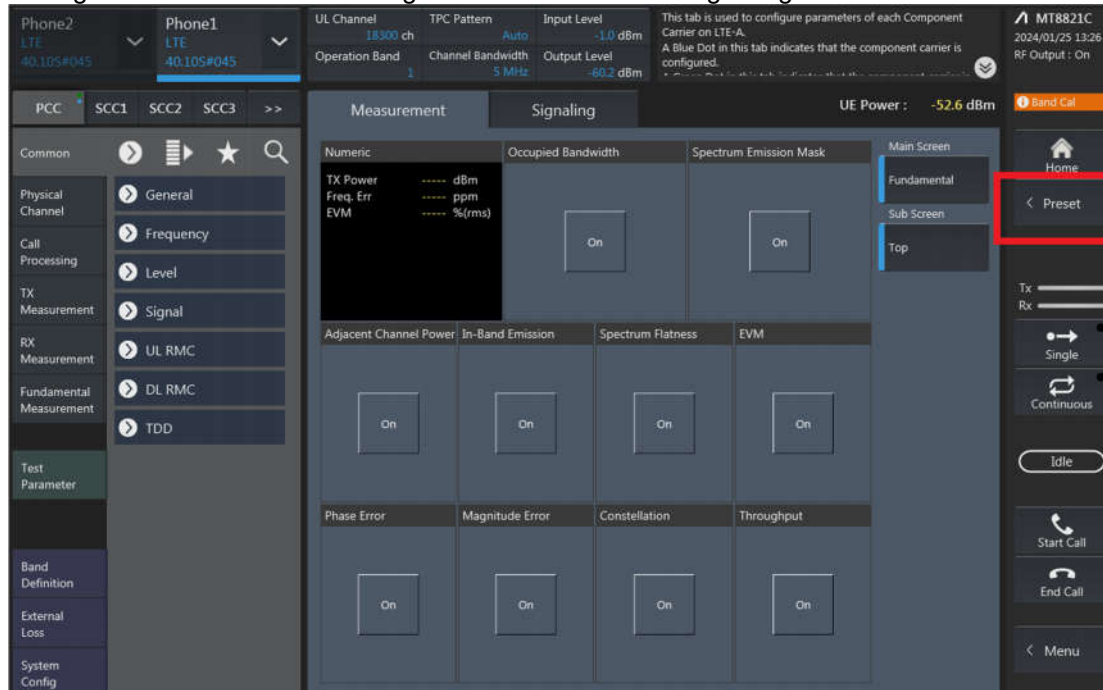
On

On



LTE Uplink and Downlink Carrier Aggregation configurations:

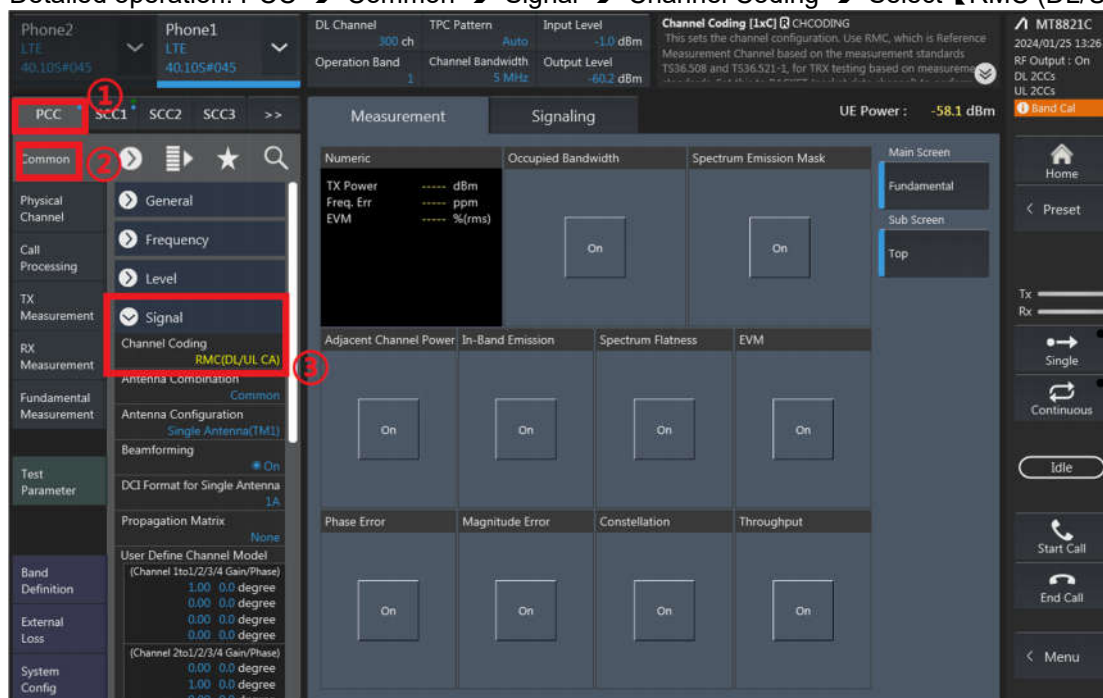
1. Change the Scenario in the Configuration of Phone1 LTE Signaling and Preset.



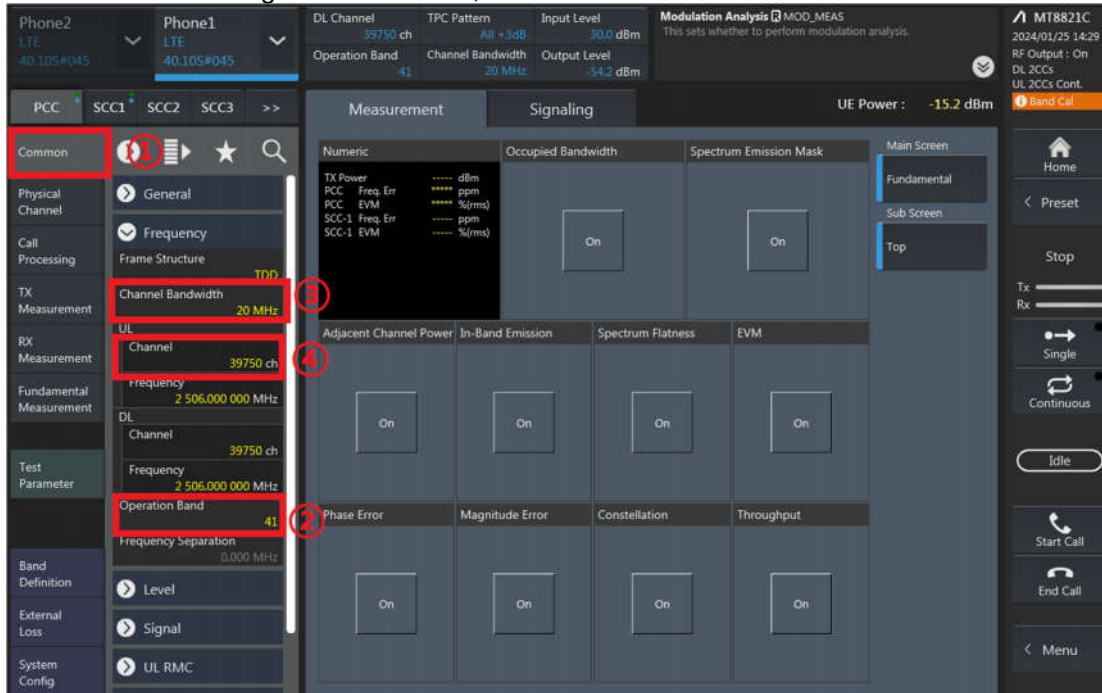
2. If Select "RMC (DL/UL CA)" for Uplink Carrier Aggregation;
If Select "RMC (DL CA)" for Downlink Carrier Aggregation.

For example, Uplink Carrier Aggregation:

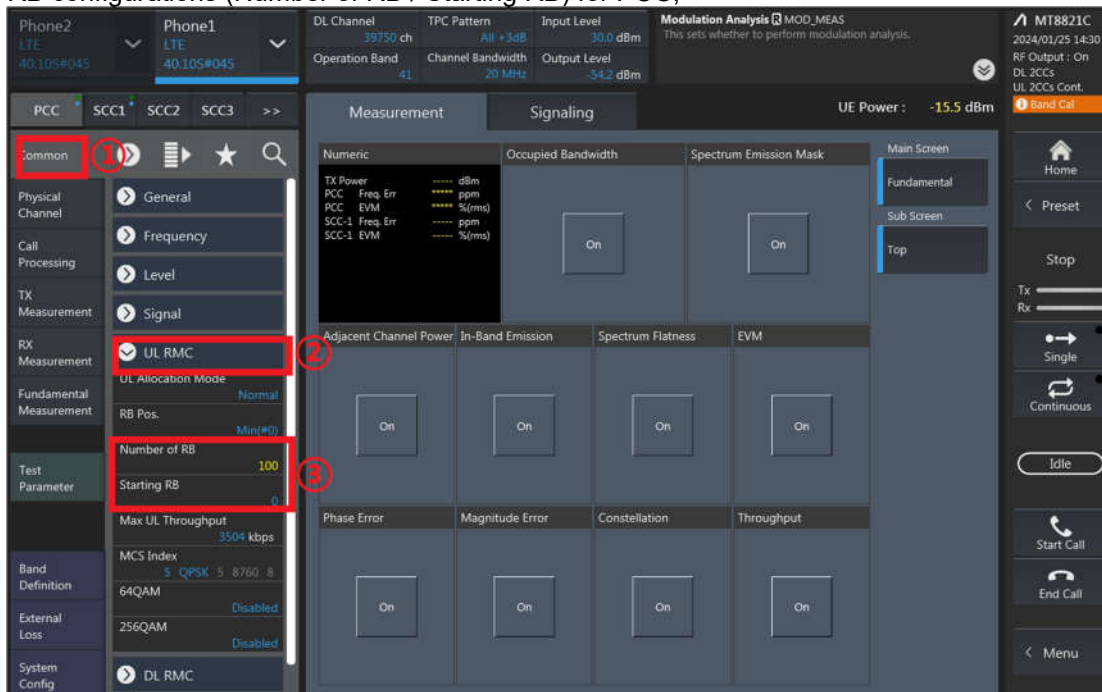
Detailed operation: PCC → Common → Signal → Channel Coding → Select 【RMC (DL/UL CA)】



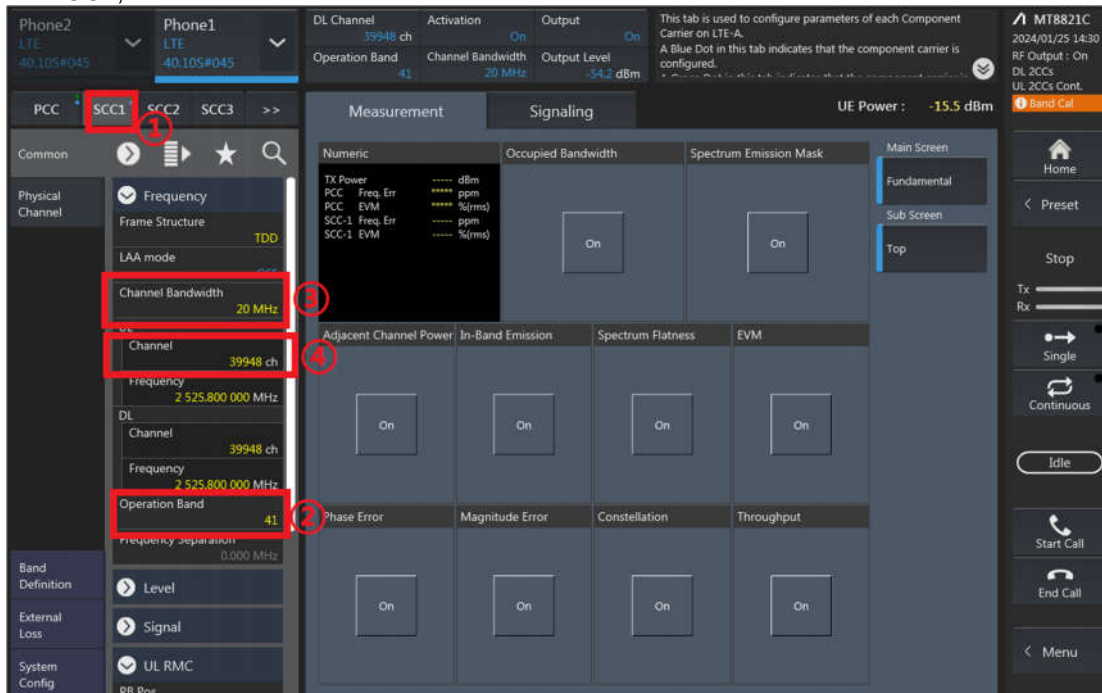
3. PCC parameter Settings: on the screen, and then select the PCC tab and Set operating band, BW, channel and RB configurations for PCC;



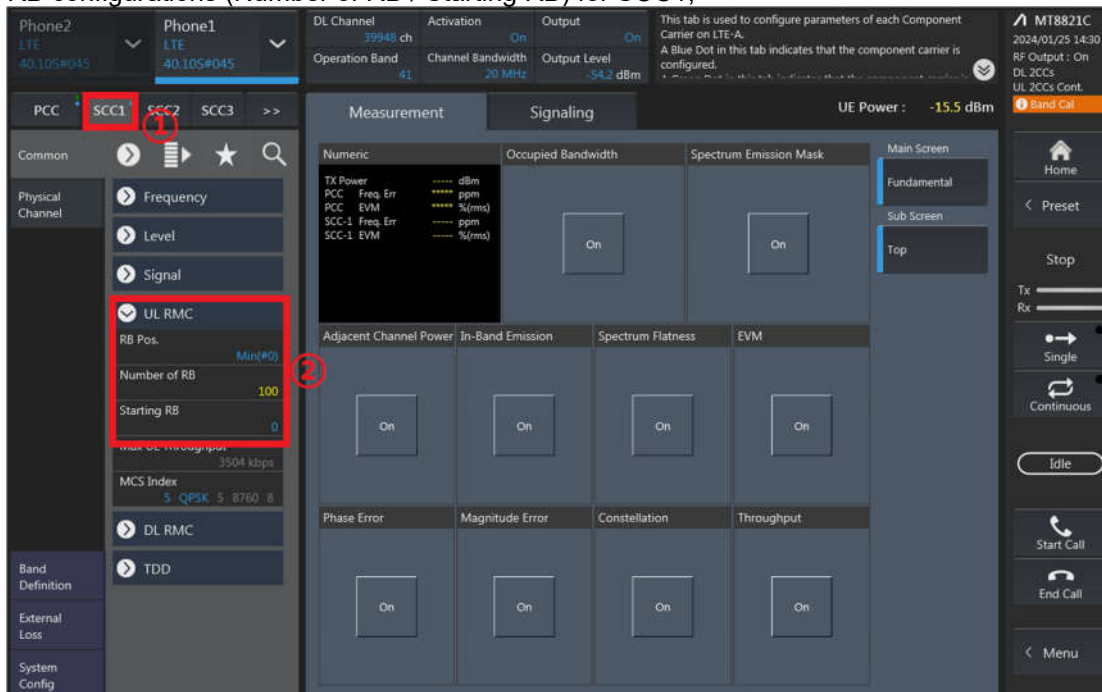
RB configurations (Number of RB / Starting RB) for PCC;



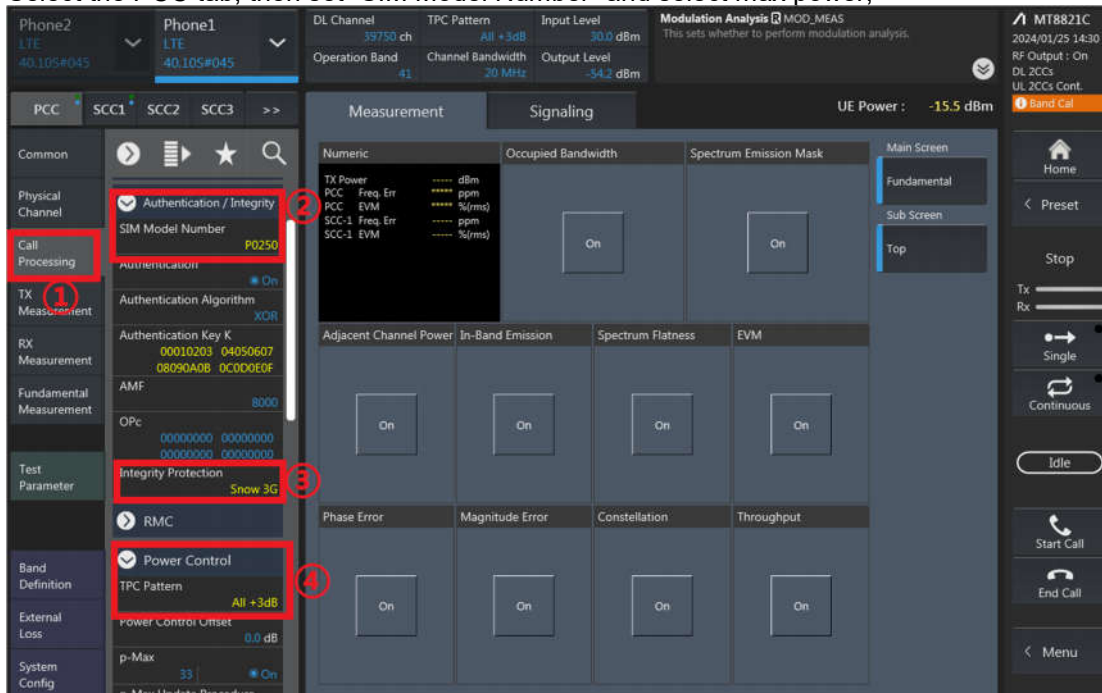
4. SCC parameter Settings: Select the SCC1 tab, Set operating band, BW, channel, and RB configurations for SCC1;



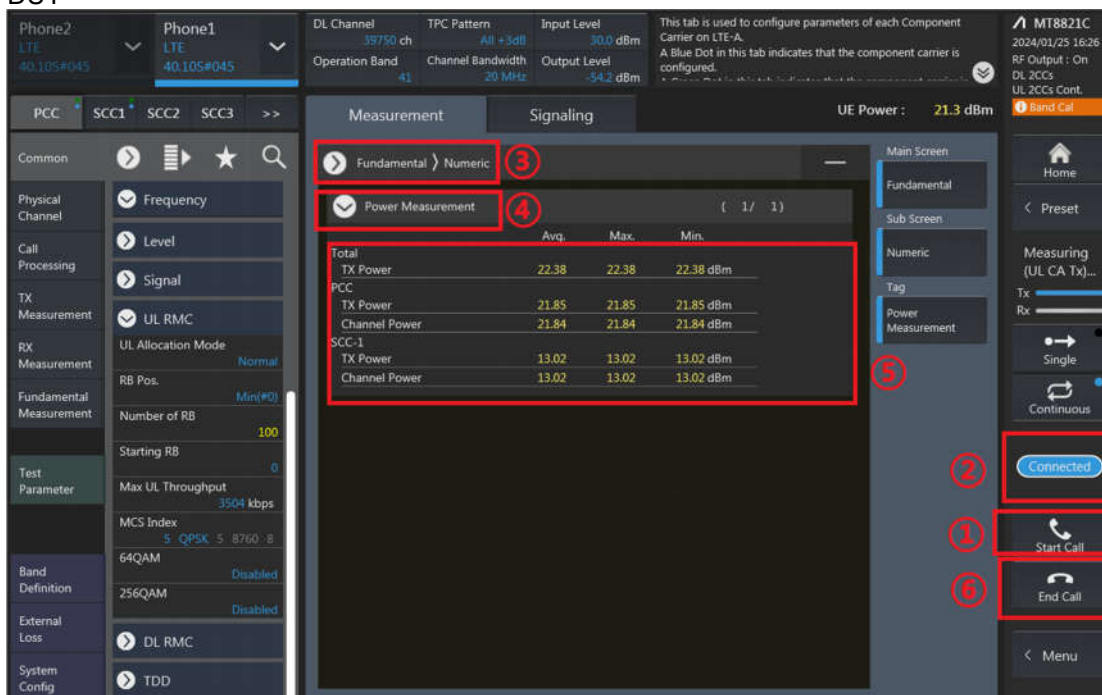
RB configurations (Number of RB / Starting RB) for SCC1;



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.

Uplink CA Power

CA_7C Ant1 Default&ECI2								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	21048	QPSK	1	99	1	0	22.71	24.00
21100	21298	QPSK	1	99	1	0	22.81	24.00
21350	21152	QPSK	1	0	1	99	22.74	24.00

CA_38C Ant1 Default&ECI2								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
37850	38048	QPSK	1	99	1	0	22.95	24.00
37901	38099	QPSK	1	99	1	0	23.12	24.00
38150	37952	QPSK	1	0	1	99	23.06	24.00

CA_41C Ant1 Default&ECI2								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
39750	39948	QPSK	1	99	1	0	23.24	24.00
40185	40383	QPSK	1	99	1	0	23.06	24.00
40620	40818	QPSK	1	99	1	0	23.3	24.00
41055	41253	QPSK	1	99	1	0	23.28	24.00
41490	41292	QPSK	1	0	1	99	23.06	24.00

CA_66C Ant0 Default&ECI2								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132072	132270	QPSK	1	99	1	0	22.47	24.00
132322	132520	QPSK	1	99	1	0	22.48	24.00
132572	132374	QPSK	1	0	1	99	22.45	24.00

CA_66C Ant4 Default&ECI6								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132072	132270	QPSK	1	99	1	0	20.50	21.50
132322	132520	QPSK	1	99	1	0	20.54	21.50
132572	132374	QPSK	1	0	1	99	20.47	21.50

CA_66B Ant0 Default&ECI2								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132047	132140	QPSK	1	74	1	0	22.43	24.00
132322	132415	QPSK	1	74	1	0	22.45	24.00
132597	132504	QPSK	1	0	1	24	22.35	24.00

CA_66B Ant4 Default&ECI6								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132047	132140	QPSK	1	74	1	0	20.46	21.50
132322	132415	QPSK	1	74	1	0	20.50	21.50
132597	132504	QPSK	1	0	1	24	20.40	21.50



Uplink CA Power

CA_7C Ant1 ECi3&7&6								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	21048	QPSK	1	99	1	0	18.59	20.00
21100	21298	QPSK	1	99	1	0	18.71	20.00
21350	21152	QPSK	1	0	1	99	18.59	20.00

CA_38C Ant1 ECi3&7								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
37850	38048	QPSK	1	99	1	0	20.39	22.00
37901	38099	QPSK	1	99	1	0	20.57	22.00
38150	37952	QPSK	1	0	1	99	20.54	22.00

CA_41C Ant1 ECi3&7								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
39750	39948	QPSK	1	99	1	0	20.39	22.00
40185	40383	QPSK	1	99	1	0	20.47	22.00
40620	40818	QPSK	1	99	1	0	20.55	22.00
41055	41253	QPSK	1	99	1	0	20.38	22.00
41490	41292	QPSK	1	0	1	99	20.41	22.00

CA_66C Ant0 ECi3								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132072	132270	QPSK	1	99	1	0	17.09	18.50
132322	132520	QPSK	1	99	1	0	17.31	18.50
132572	132374	QPSK	1	0	1	99	17.30	18.50

CA_66C Ant4 ECi2								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132072	132270	QPSK	1	99	1	0	19.69	20.50
132322	132520	QPSK	1	99	1	0	19.70	20.50
132572	132374	QPSK	1	0	1	99	19.57	20.50

CA_66B Ant0 ECi3								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132047	132140	QPSK	1	74	1	0	17.07	18.50
132322	132415	QPSK	1	74	1	0	17.15	18.50
132597	132504	QPSK	1	0	1	24	17.16	18.50

CA_66B Ant4 ECi2								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132047	132140	QPSK	1	74	1	0	19.50	20.50
132322	132415	QPSK	1	74	1	0	19.71	20.50
132597	132504	QPSK	1	0	1	24	19.50	20.50

CA_38C Ant1 ECi6								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
37850	38048	QPSK	1	99	1	0	21.95	23.50
37901	38099	QPSK	1	99	1	0	22.01	23.50
38150	37952	QPSK	1	0	1	99	21.95	23.50

CA_41C Ant1 ECi6								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
39750	39948	QPSK	1	99	1	0	20.91	22.50
40185	40383	QPSK	1	99	1	0	20.90	22.50
40620	40818	QPSK	1	99	1	0	21.01	22.50
41055	41253	QPSK	1	99	1	0	20.97	22.50
41490	41292	QPSK	1	0	1	99	20.96	22.50

CA_66C Ant0 ECi7								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132072	132270	QPSK	1	99	1	0	16.17	17.50
132322	132520	QPSK	1	99	1	0	16.25	17.50
132572	132374	QPSK	1	0	1	99	16.23	17.50

CA_66C Ant4 ECi3								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132072	132270	QPSK	1	99	1	0	20.19	21.00
132322	132520	QPSK	1	99	1	0	20.21	21.00
132572	132374	QPSK	1	0	1	99	20.06	21.00

CA_66B Ant0 ECi7								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132047	132140	QPSK	1	74	1	0	16.16	17.50
132322	132415	QPSK	1	74	1	0	16.26	17.50
132597	132504	QPSK	1	0	1	24	16.09	17.50

CA_66B Ant4 ECi3								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132047	132140	QPSK	1	74	1	0	19.95	21.00
132322	132415	QPSK	1	74	1	0	20.10	21.00
132597	132504	QPSK	1	0	1	24	20.14	21.00

CA_66C Ant0 ECi6								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132072	132270	QPSK	1	99	1	0	20.16	21.50
132322	132520	QPSK	1	99	1	0	20.28	21.50
132572	132374	QPSK	1	0	1	99	20.26	21.50

CA_66C Ant4 ECi7								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132072	132270	QPSK	1	99	1	0	18.68	19.50
132322	132520	QPSK	1	99	1	0	18.75	19.50
132572	132374	QPSK	1	0	1	99	18.50	19.50

CA_66B Ant0 ECi6								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132047	132140	QPSK	1	74	1	0	20.07	21.50
132322	132415	QPSK	1	74	1	0	20.16	21.50
132597	132504	QPSK	1	0	1	24	20.23	21.50

CA_66B Ant4 ECi7								
Combination 15MHz+5MHz (75RB+25RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
132047	132140	QPSK	1	74	1	0	18.59	19.50
132322	132415	QPSK	1	74	1	0	18.69	19.50
132597	132504	QPSK	1	0	1	24	18.53	19.50

Conducted Power for DL CA

2CA DL

CA List	PCC									SCC					Power	
	LTE	BW	BW	UL	UL	UL#	UL	DL Antenna	Configuration	LTE	BW	DL	DL	DL Antenna	With CA	Without CA
	Band	Ant	(MHz)	Freq. (MHz)	Channel	Mod.	RB	RB Offset		Band	(MHz)	Freq. (MHz)	Channel	Configuration		
CA_2A-2A	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	5M	1987.5	1175	4x4MIMO	22.86	22.97
	Band 2	Ant4	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	5M	1987.5	1175	4x4MIMO	19.60	19.71
CA_2C	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	20M	1979.8	1098	4x4MIMO	22.86	22.97
	Band 2	Ant4	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	20M	1979.8	1098	4x4MIMO	19.60	19.71
CA_4A-4A	Band 4	Ant0	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 4	5M	2152.5	2375	4x4MIMO	22.39	22.50
	Band 4	Ant4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 4	5M	2152.5	2375	4x4MIMO	20.38	20.49
CA_5A-38A	Band 5	Ant0	10M	836.5	20525	QPSK	1	0		Band 38	20M	2595	38000		22.98	23.09
CA_5A-66A	Band 5	Ant0	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	22.98	23.09
	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		22.49	22.60
CA_7A-26A	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		22.83	22.94
CA_7A-42A	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 42	20M	3500	42590	4x4MIMO	22.83	22.94
	Band 42	Ant5	20M	3500	42590	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	22.17	22.28
CA_7B	Band 7	Ant1	15M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2544.3	3193	4x4MIMO	22.83	22.94
CA_26A-66A	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		22.49	22.60
CA_38C	Band 38	Ant1	20M	2580	37850	QPSK	1	0		Band 38	20M	2599.8	38048		23.02	23.13
CA_41A-42A	Band 41	Ant1	20M	2593	40620	QPSK	1	0		Band 42	20M	3500	42590	4x4MIMO	23.30	23.41
	Band 42	Ant5	20M	3500	42590	QPSK	1	0	4x4MIMO	Band 41	20M	2593	40620		22.17	22.28
CA_41C	Band 41	Ant1	20M	2593	40620	QPSK	1	0		Band 41	20M	2612.8	40818		23.30	23.41
CA_42C	Band 42	Ant5	20M	3500	42590	QPSK	1	0	4x4MIMO	Band 42	20M	3519.8	42788	4x4MIMO	22.17	22.28
CA_66B	Band 66	Ant0	15M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2164.3	66979	4x4MIMO	22.49	22.60
	Band 66	Ant4	15M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2164.3	66979	4x4MIMO	20.56	20.67
CA_66C	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2164.8	66984	4x4MIMO	22.49	22.60
	Band 66	Ant4	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2164.8	66984	4x4MIMO	20.56	20.67

3CA DL

3CA List	PCC									SCC1					SCC2				DL Antenna Configuration	Power	
	LTE	BW	BW	UL	UL	Mod.	UL#	UL	DL Antenna Configuration	LTE	BW	DL	DL	DL Antenna Configuration	LTE	BW	DL	DL		With CA	Without CA
	Band	Ant	(MHz)	Freq (MHz)	Channel		RB	RB Offset		Band	(MHz)	Freq (MHz)	Channel		Band	(MHz)	Freq (MHz)	Channel		Tx. Power (dBm)	Tx. Power (dBm)
CA_2A-4A-5A	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	Band 5	10M	881.5	2525		22.86	22.97
	Band 4	Ant0	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	22.39	22.50
	Band 5	Ant0	10M	836.5	20525	QPSK	1	0	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	22.98	23.09
CA_2A-4A-7A	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	22.86	22.97
	Band 4	Ant0	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	22.39	22.50
	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	22.83	22.94
CA_2A-5A-7A	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	22.86	22.97
	Band 5	Ant0	10M	836.5	20525	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	22.98	23.09
	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	Band 5	10M	881.5	2525		22.83	22.94
CA_2A-7A-7A	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	22.86	22.97
	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	22.83	22.94
	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 66	20M	2155	66886	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	22.86	22.97
CA_2A-7A-66A	Band 2	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	Band 66	20M	2155	66886	4x4MIMO	22.83	22.94
	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	22.49	22.60
	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2554.8	3298	4x4MIMO	22.86	22.97
CA_2A-66A-66A	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2554.8	3298	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	22.83	22.94
	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	22.86	22.97
	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	22.49	22.60
CA_4A-7A-7A	Band 4	Ant0	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	22.39	22.50
	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	22.83	22.94
	Band 4	Ant0	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2554.8	3298	4x4MIMO	22.39	22.50
CA_4A-7C	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2554.8	3298	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	22.83	22.94
	Band 5	Ant0	10M	836.5	20525	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2554.8	3298	4x4MIMO	22.98	23.09
	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2554.8	3298	4x4MIMO	Band 5	10M	881.5	2525		22.83	22.94
CA_7A-38A-66A	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 38	20M	2595	38000		Band 66	20M	2155	66886	4x4MIMO	22.83	22.94
	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100		Band 38	20M	2595	38000	4x4MIMO	22.49	22.60
	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	22.83	22.94
CA_7A-7A-66A	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	22.49	22.60
	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	22.59	22.60
	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 66	20M	2155	66886	4x4MIMO	22.83	22.94
CA_7C_66A	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2554.8	3298	4x4MIMO	22.56	22.60
	Band 7	Ant1	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2554.8	3298	4x4MIMO	Band 66	20M	2155	66886	4x4MIMO	22.83	22.94
	Band 2	Ant0	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	20M	1979.8	1098	4x4MIMO	Band 66	20M	2155	66886	4x4MIMO	22.86	22.97
CA_2C_66A	Band 2	Ant4	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	20M	1979.8	1098	4x4MIMO	Band 66	20M	2155	66886	4x4MIMO	19.60	19.71
	Band 66	Ant0	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 2	20M	1960	900	4x4MIMO	Band 2	20M	1979.8	1098	4x4MIMO	22.56	22.60