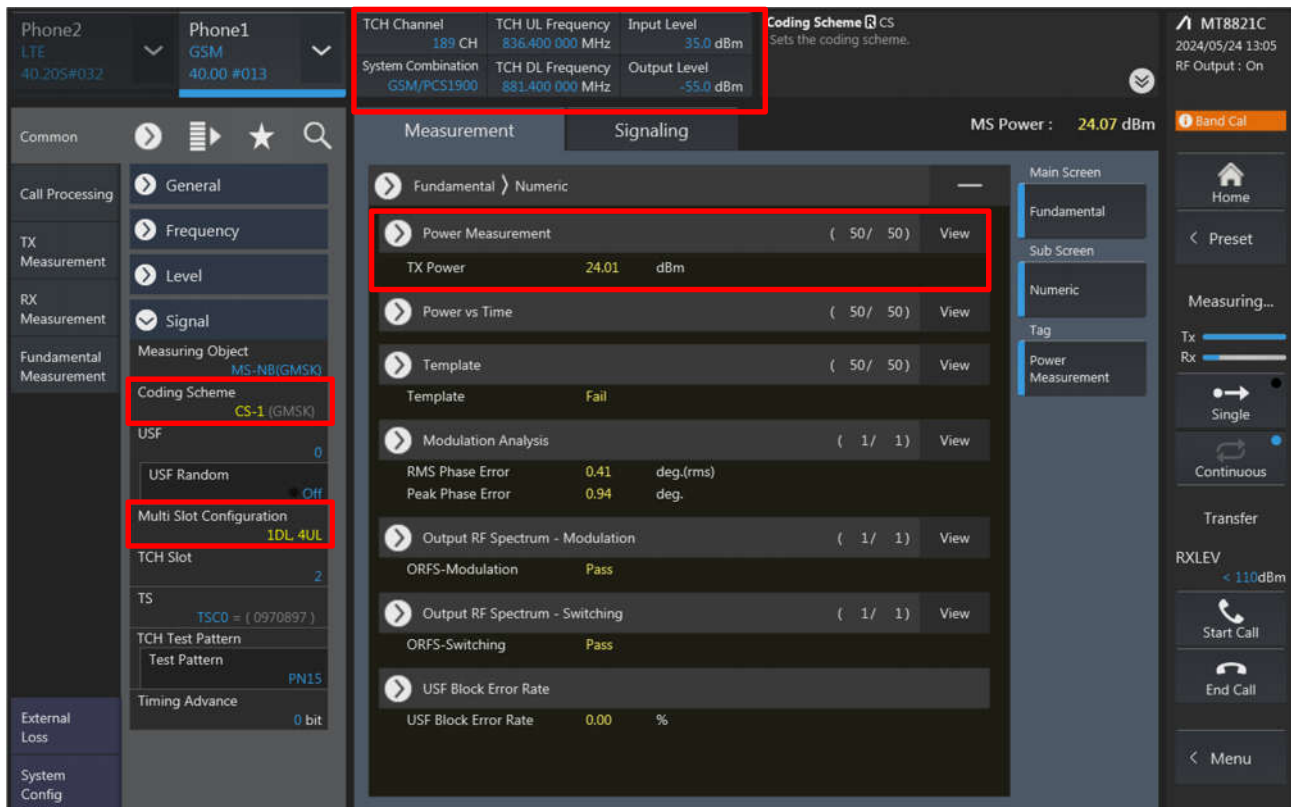


Power measurement connection diagram:

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.

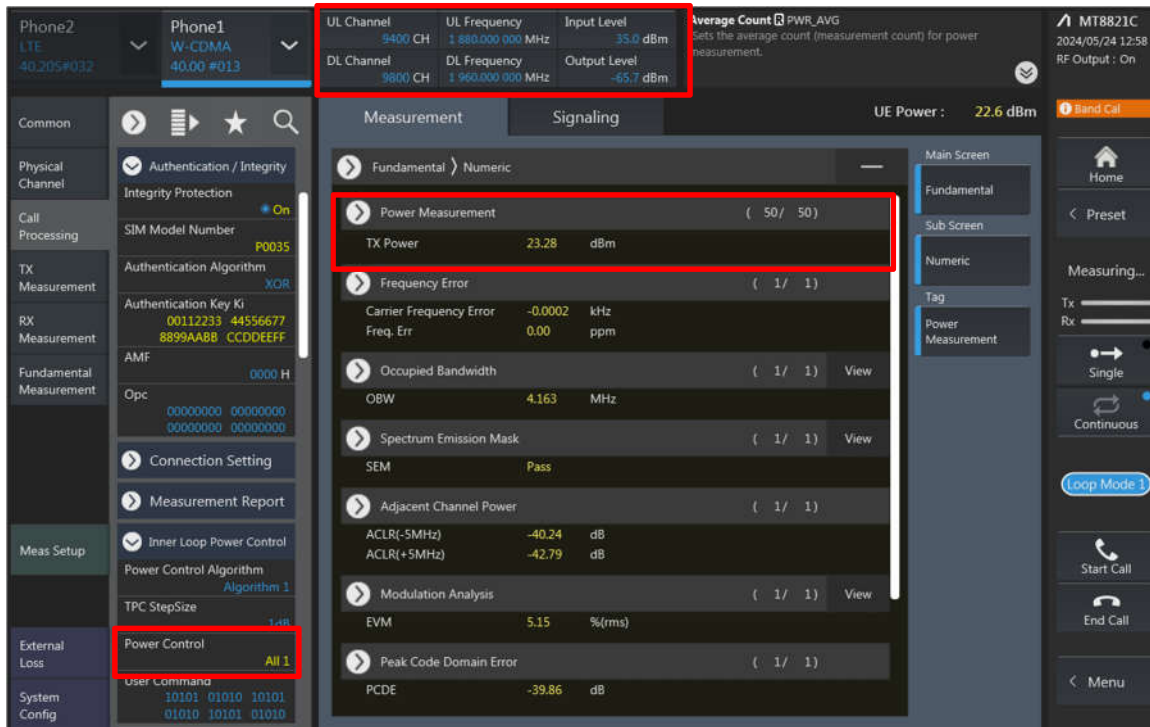
<GSM>



The screenshot displays the MT8821C software interface for GSM power measurement. The interface is divided into several sections:

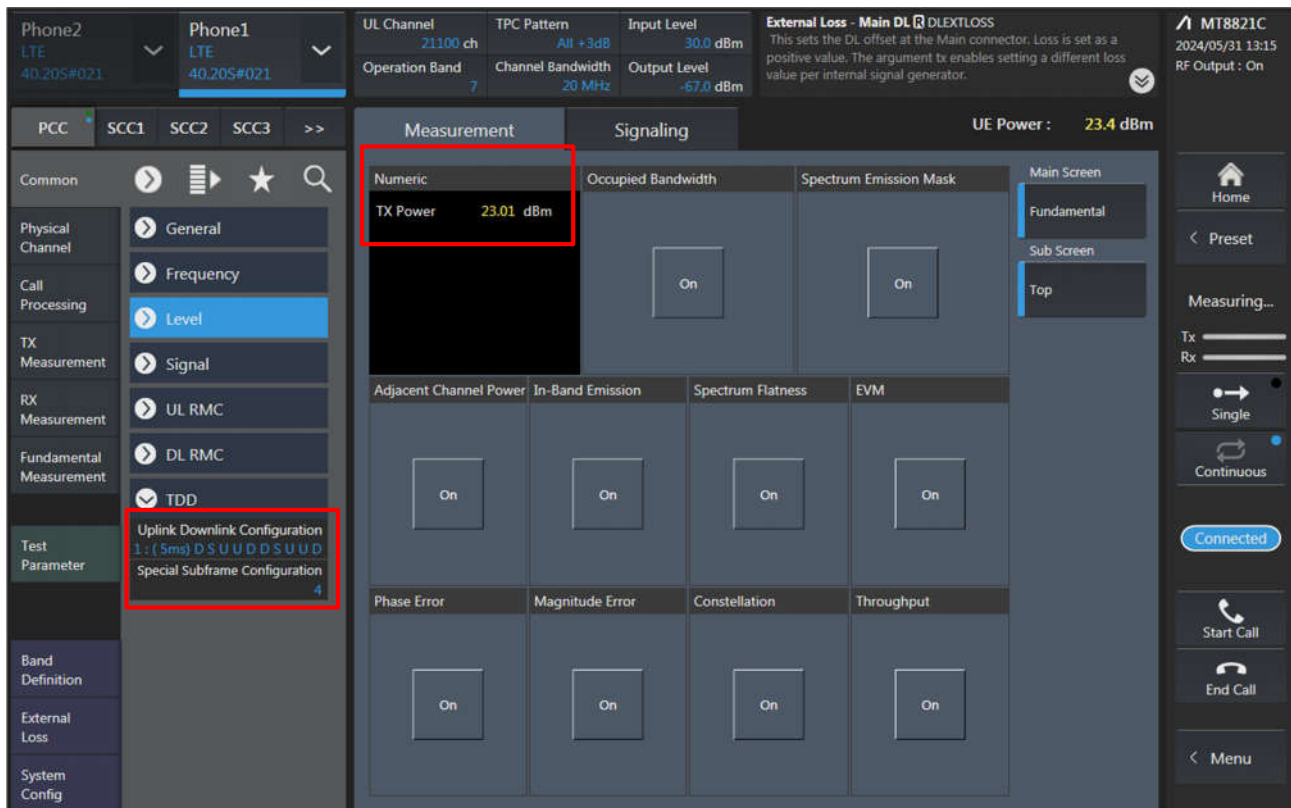
- Top Bar:** Shows Phone2 (LTE 40.205#032) and Phone1 (GSM 40.00 #013). The TCH Channel is 189 CH, TCH UL Frequency is 836.400 000 MHz, Input Level is 35.0 dBm, TCH DL Frequency is 881.400 000 MHz, and Output Level is -55.0 dBm. The Coding Scheme is CS.
- Left Sidebar:** Contains navigation options like 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 'Power Measurement' with a value of 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 'MS Power' as 24.07 dBm and 'Band Cal' as On. It also includes a 'Main Screen' section with 'Fundamental', 'Sub Screen', 'Numeric', and 'Tag' options.

<WCDMA>



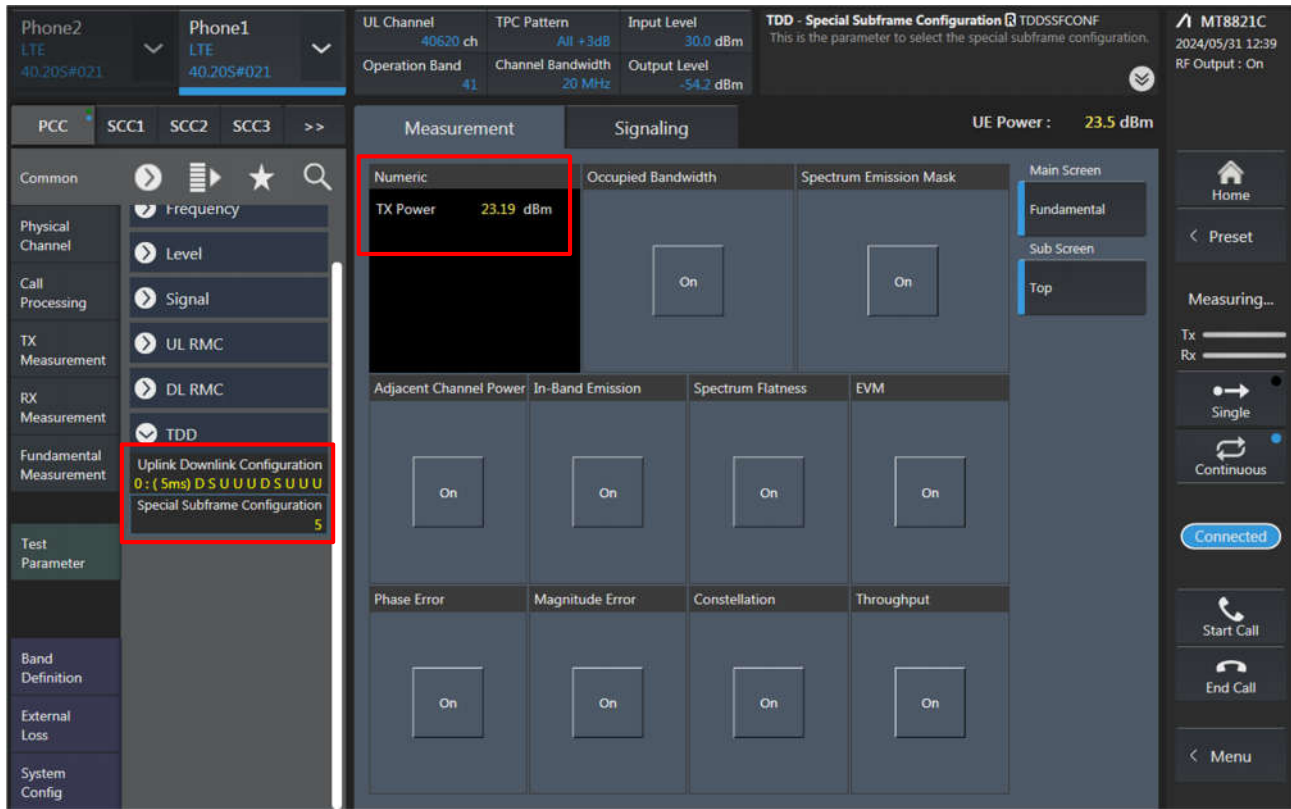
The screenshot shows the WCDMA measurement interface. The top bar displays 'Phone2 LTE 40.205#032' and 'Phone1 W-CDMA 40.00 #013'. The 'Measurement' tab is active, showing various parameters. A red box highlights the 'UL Channel' (9400 CH), 'UL Frequency' (1 880.000 000 MHz), 'Input Level' (35.0 dBm), 'DL Channel' (9800 CH), 'DL Frequency' (1 960.000 000 MHz), and 'Output Level' (-65.7 dBm). Another red box highlights the 'Power Measurement' section, showing 'TX Power' (23.28 dBm). The 'Fundamental' section shows '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, -42.79 dB), 'Modulation Analysis' (5.15 %/rms), and 'Peak Code Domain Error' (-39.86 dB). The 'Meas Setup' section shows 'Power Control' (All 1) and 'User Command' (10101 01010 10101 01010 10101 01010). The 'UE Power' is 22.6 dBm. The 'MT8821C' status is shown at the top right.

<LTE>



The screenshot shows the LTE measurement interface. The top bar displays 'Phone2 LTE 40.205#021' and 'Phone1 LTE 40.205#021'. The 'Measurement' tab is active, showing various parameters. A red box highlights the 'TX Power' (23.01 dBm). The 'Occupied Bandwidth' and 'Spectrum Emission Mask' sections show 'On' buttons. The 'Adjacent Channel Power', 'In-Band Emission', 'Spectrum Flatness', and 'EVM' sections show 'On' buttons. The 'Phase Error', 'Magnitude Error', 'Constellation', and 'Throughput' sections show 'On' buttons. The 'Uplink Downlink Configuration' is set to '1: (5ms) D S U U D D S U U D' and the 'Special Subframe Configuration' is set to '4'. The 'UE Power' is 23.4 dBm. The 'MT8821C' status is shown at the top right.

<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

Operation Band 41

Channel Bandwidth 20 MHz

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

UE Power : 23.5 dBm

Measurement

Numeric

TX Power 23.19 dBm

Occupied Bandwidth

Spectrum Emission Mask

Main Screen

Fundamental

Sub Screen

Top

Adjacent Channel Power

In-Band Emission

Spectrum Flatness

EVM

Phase Error

Magnitude Error

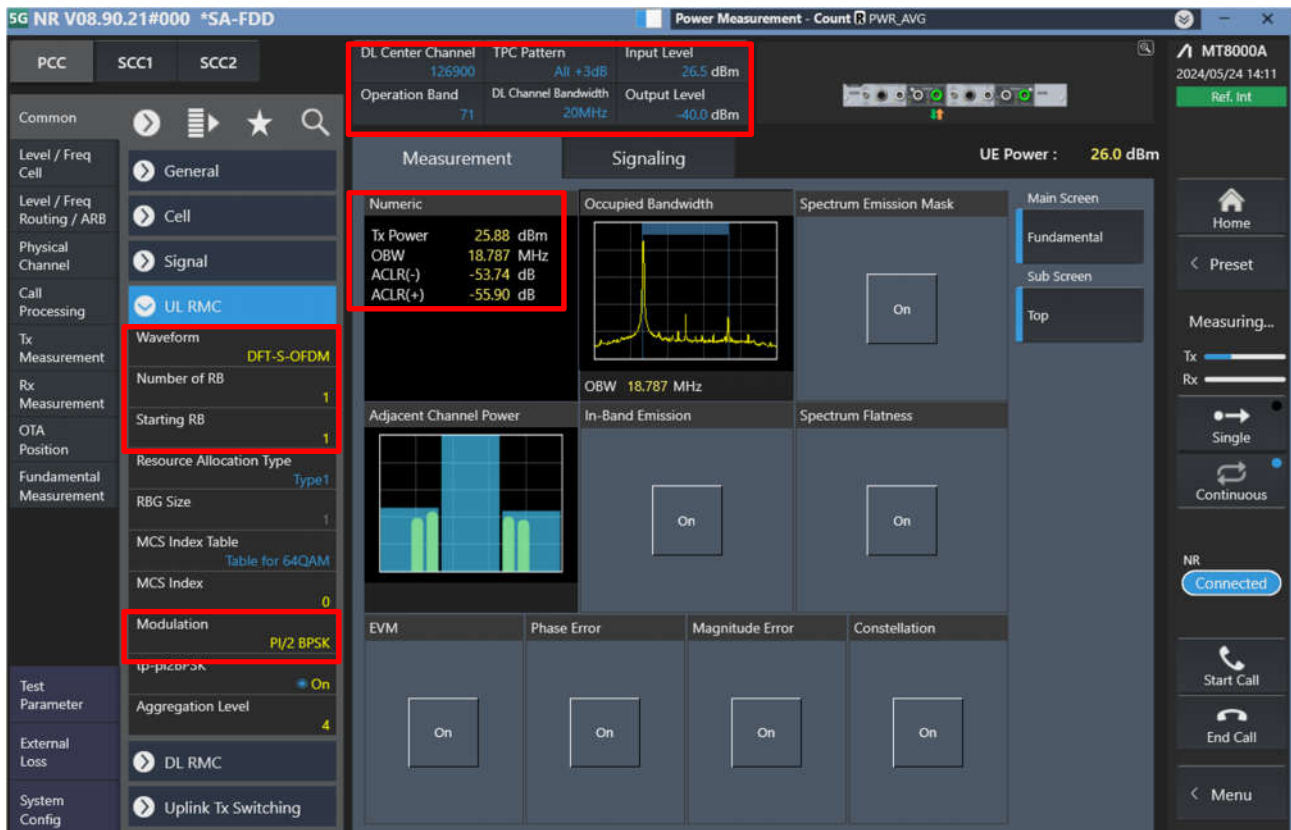
Constellation

Throughput

Uplink Downlink Configuration 0: (5ms) D S U U D S U U

Special Subframe Configuration 5

<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 All +3dB

Input Level 26.5 dBm

Operation Band 71

DL Channel Bandwidth 20MHz

Output Level -40.0 dBm

MT88000A 2024/05/24 14:11 Ref. int

UE Power : 26.0 dBm

Measurement

Numeric

Tx Power 25.88 dBm

OBW 18.787 MHz

ACLR(-) -53.74 dB

ACLR(+) -55.90 dB

Occupied Bandwidth

Spectrum Emission Mask

Main Screen

Fundamental

Sub Screen

Top

Adjacent Channel Power

In-Band Emission

Spectrum Flatness

EVM

Phase Error

Magnitude Error

Constellation

Waveform DFT-S-OFDM

Number of RB 1

Starting RB 1

Resource Allocation Type Type1

RBG Size 1

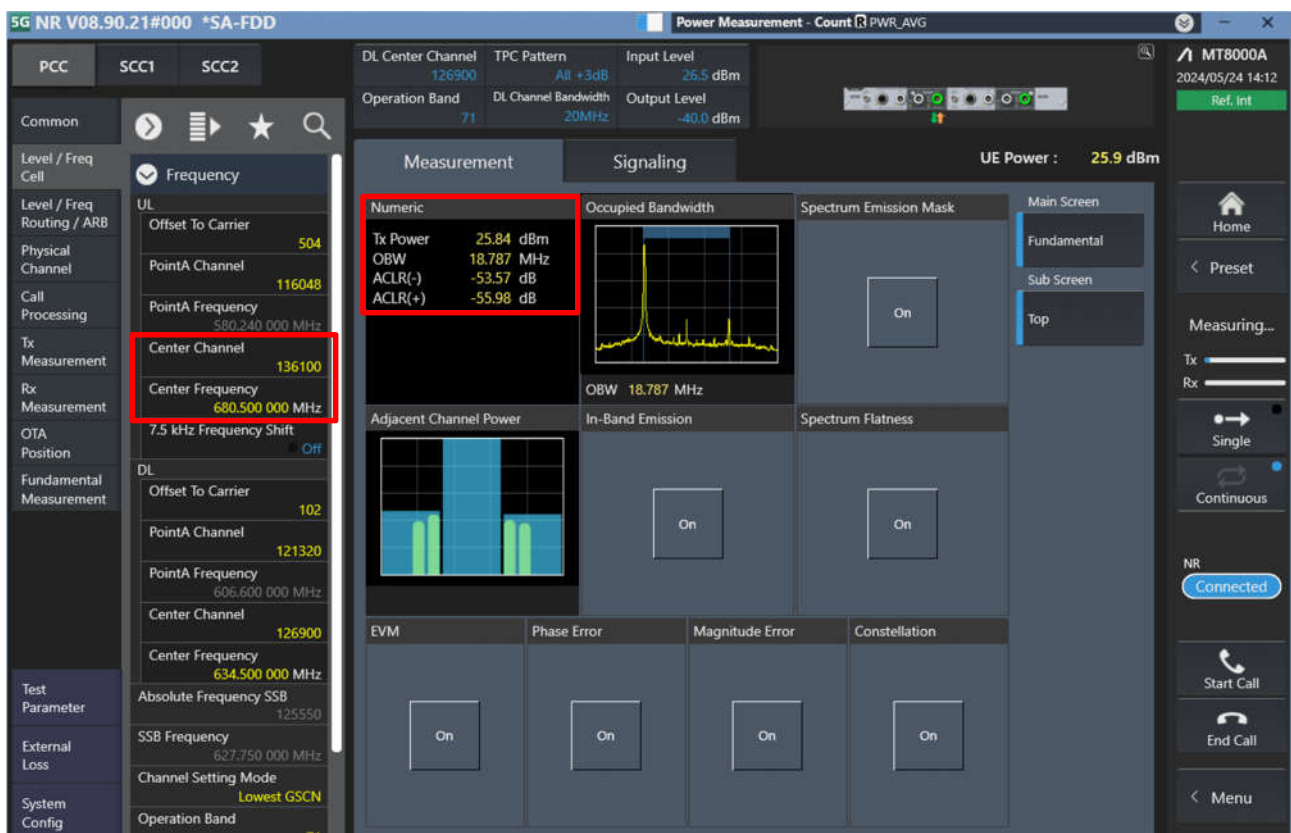
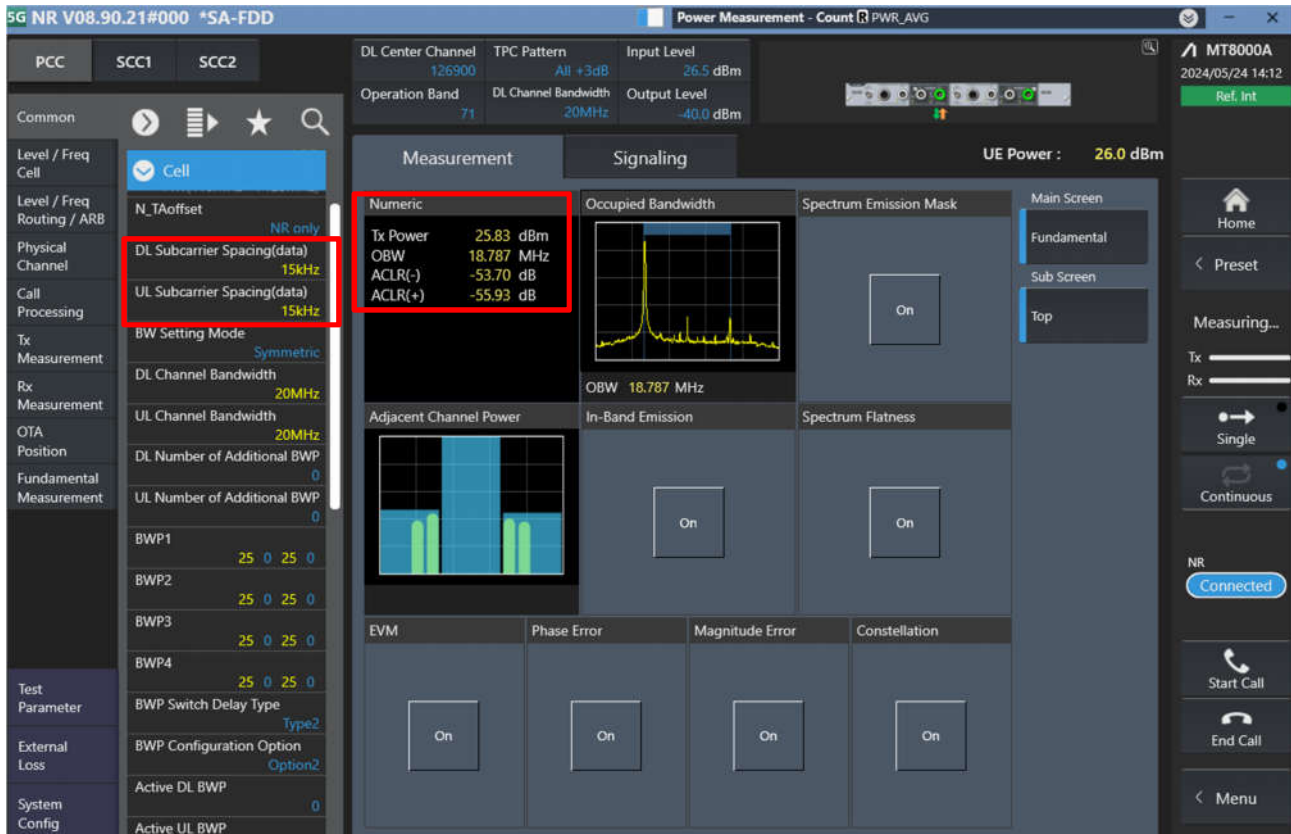
MCS Index Table Table for 64QAM

MCS Index 0

Modulation Pi/2 BPSK

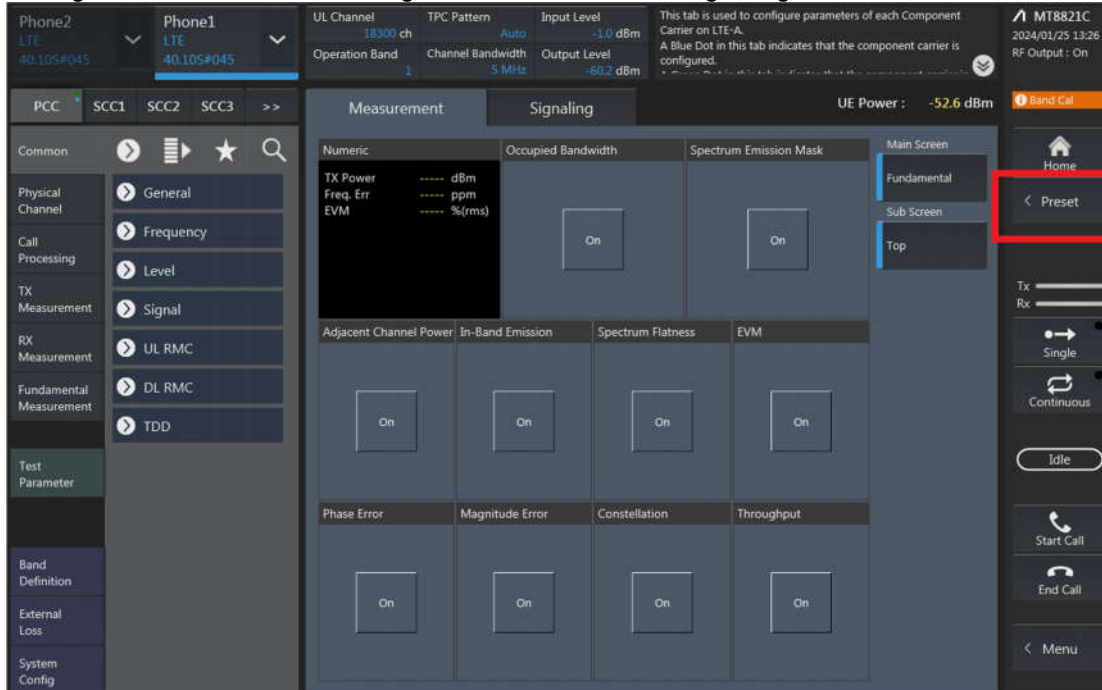
Aggregation Level 4

Uplink Tx Switching



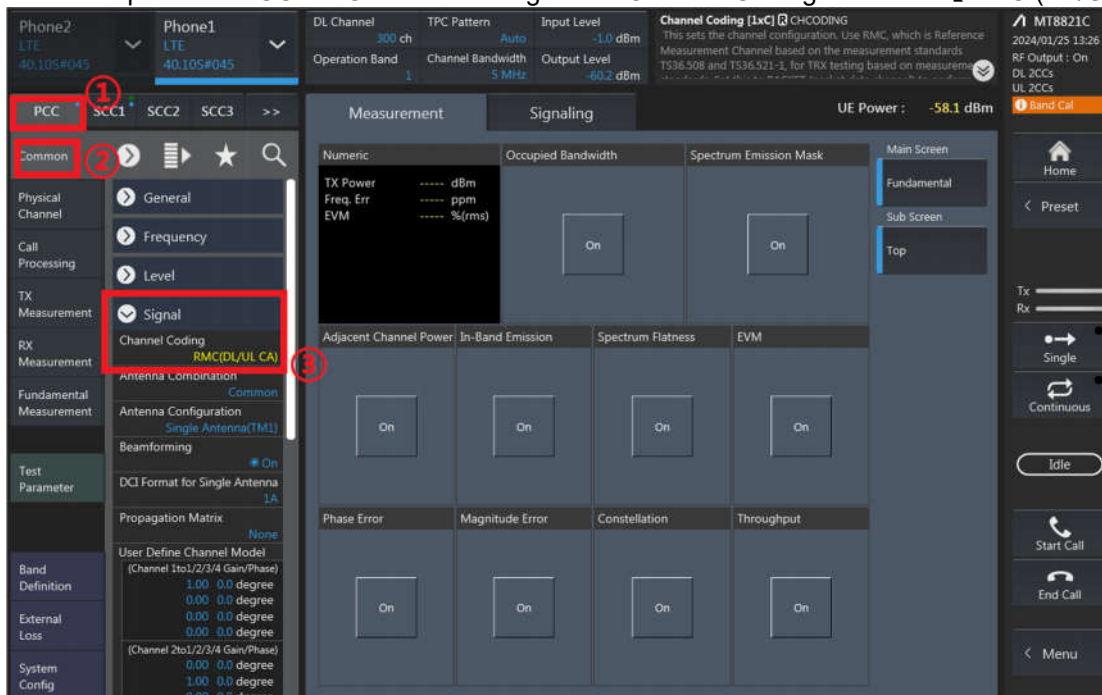
LTE Uplink and Downlink Carrier Aggregation configurations:

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

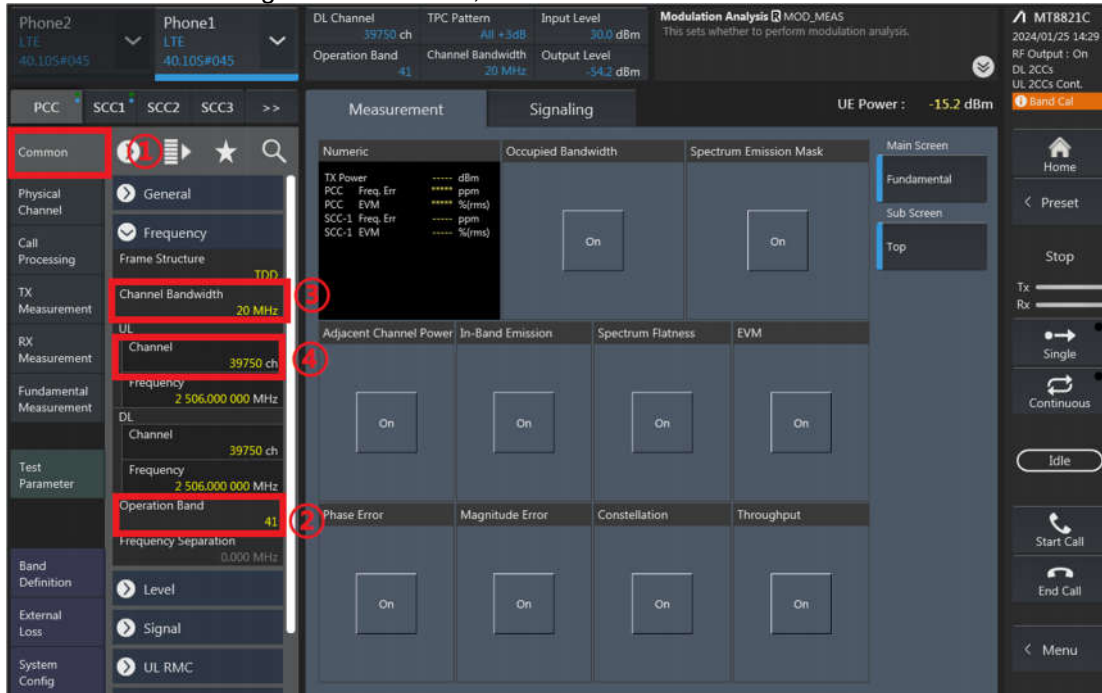


2. If Select "RMC (DL/UL CA)" for Uplink Carrier Aggregation;
If Select "RMC (DL CA)" for Downlink Carrier Aggregation.
For example, Uplink Carrier Aggregation:

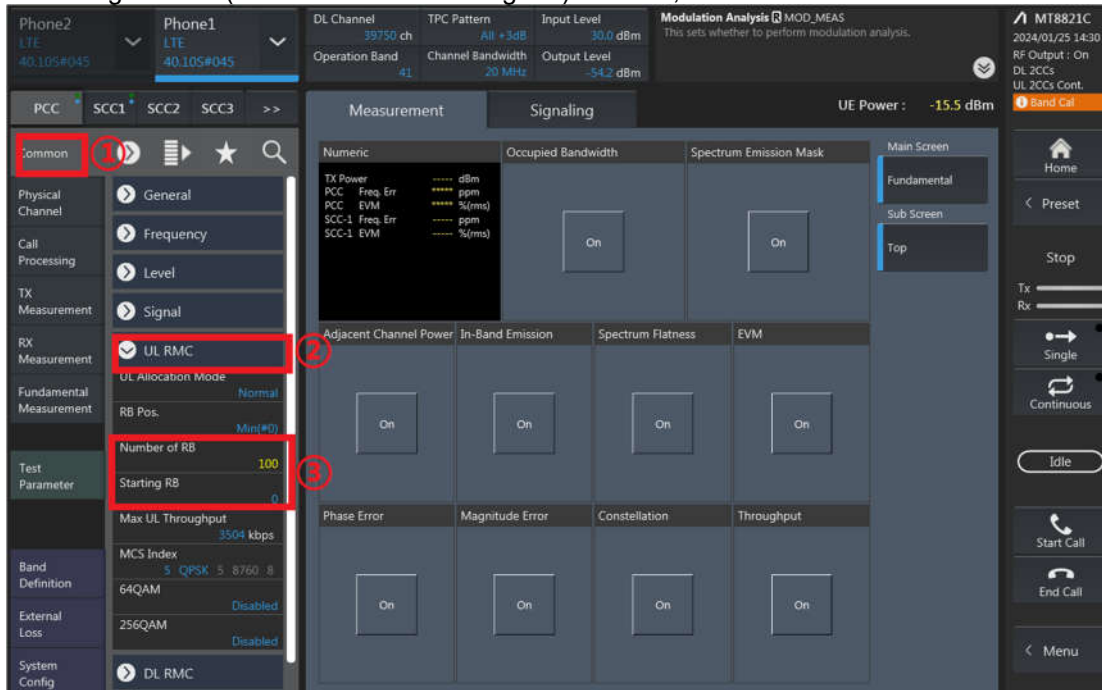
Detailed operation: PCC → Common → Signal → Channel Coding → Select 【RMC (DL/UL CA)】



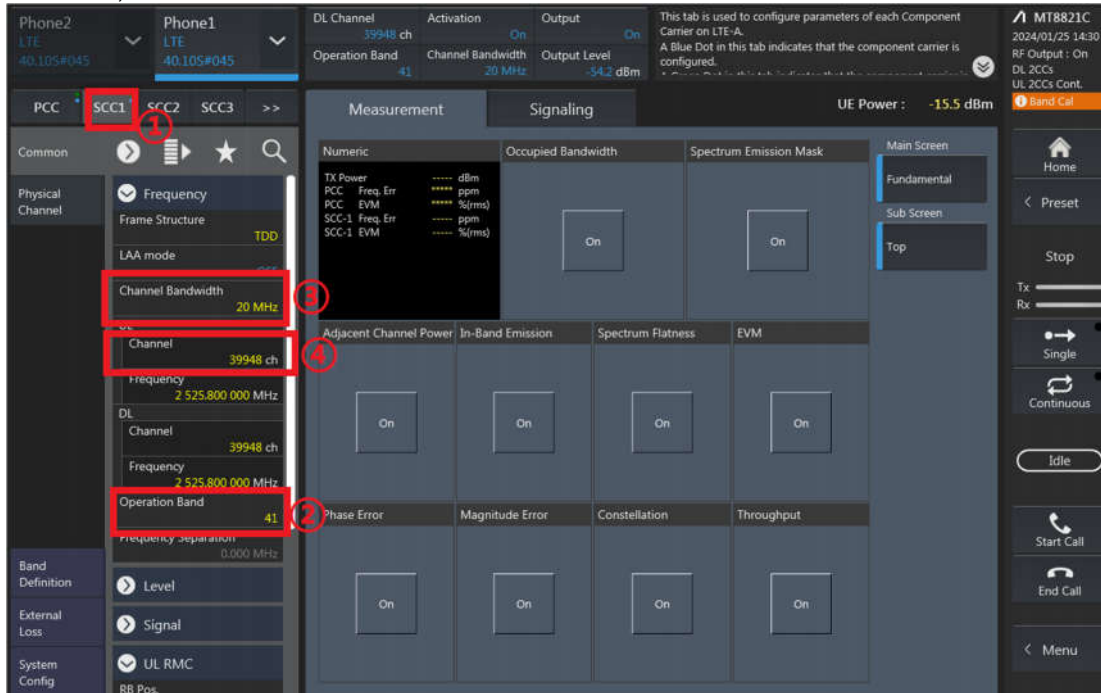
3. PCC parameter Settings: on the screen, and then select the PCC tab and Set operating band, BW, channel and RB configurations for PCC;



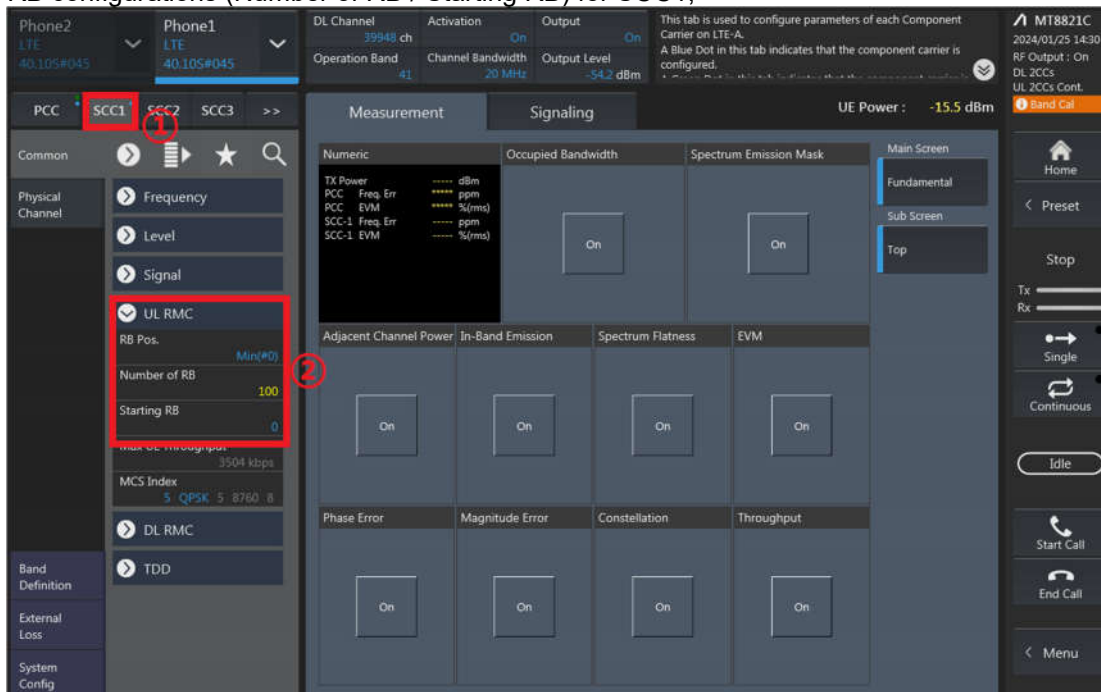
RB configurations (Number of RB / Starting RB) for PCC;



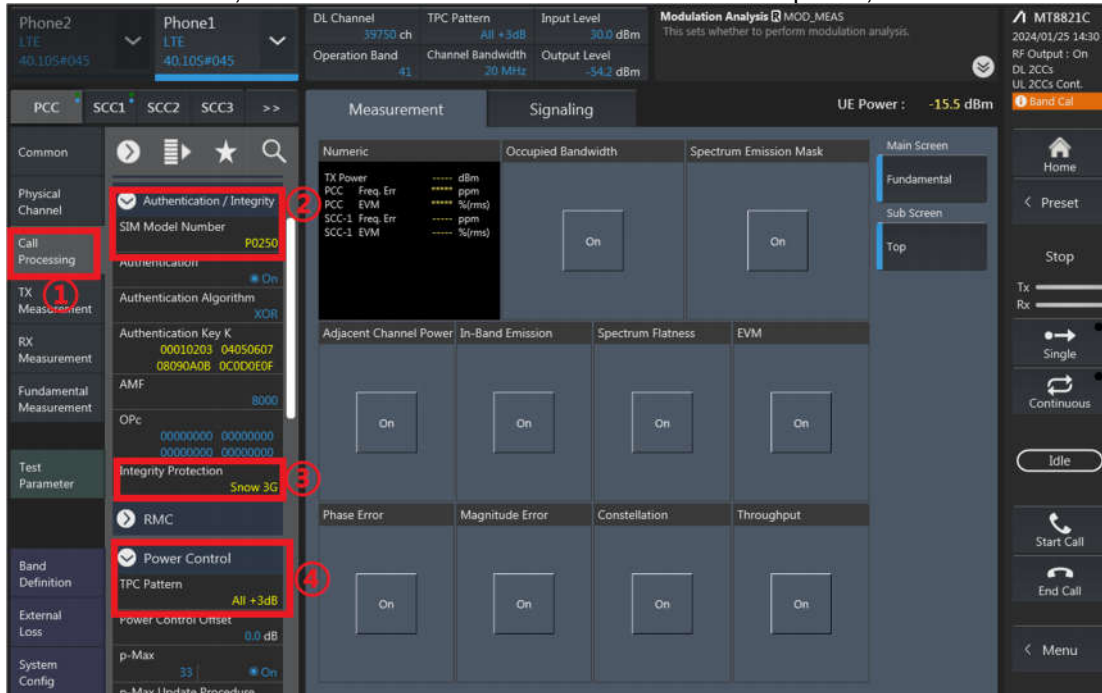
4. SCC parameter Settings: Select the SCC1 tab, Set operating band, BW, channel, and RB configurations for SCC1;



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



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



Phone2 LTE 40.10S#045 Phone1 LTE 40.10S#045

DL Channel 39750 ch Operation Band 41 TPC Pattern All +3dB Channel Bandwidth 20 MHz Input Level 30.0 dBm Output Level -54.2 dBm

Modulation Analysis MOD_MEAS This sets whether to perform modulation analysis.

MT8821C 2024/01/25 14:30 RF Output : On DL 2CCs UL 2CCs Cont. Band Cal

UE Power : -15.5 dBm

Measurement Signaling

Numeric Occupied Bandwidth Spectrum Emission Mask

TX Power PCC Freq. Err dBm ppm PCC EVM %/rms PCC-1 Freq. Err ppm PCC-1 EVM %/rms

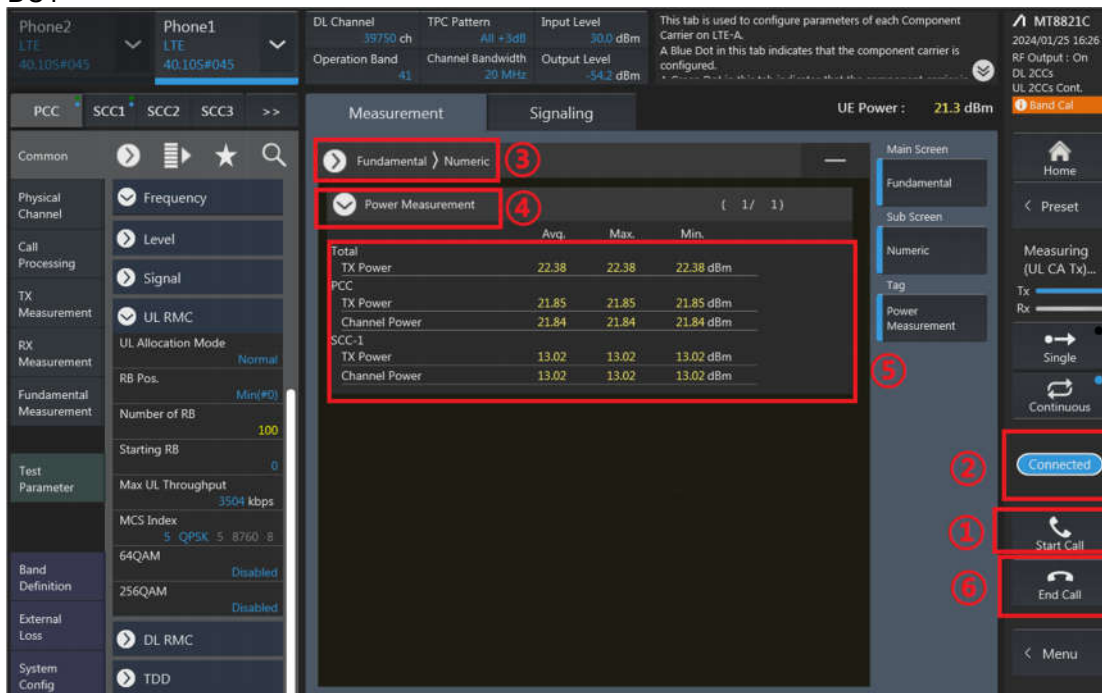
Adjacent Channel Power In-Band Emission Spectrum Flatness EVM

Phase Error Magnitude Error Constellation Throughput

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

Authentication / Integrity SIM Model Number P0250 Authentication On Authentication Algorithm XOR Authentication Key K 00010203 04050607 08090A0B 0C0D0E0F AMF 8000 OPc 00000000 00000000 00000000 00000000 Integrity Protection Snow 3G RMC Power Control TPC Pattern All +3dB Power Control Offset 0.0 dB p-Max 33 p-Max Update Procedure

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



Phone2 LTE 40.10S#045 Phone1 LTE 40.10S#045

DL Channel 39750 ch Operation Band 41 TPC Pattern All +3dB Channel Bandwidth 20 MHz Input Level 30.0 dBm Output Level -54.2 dBm

This tab is used to configure parameters of each Component Carrier on LTE-A. A Blue Dot in this tab indicates that the component carrier is configured.

MT8821C 2024/01/25 16:26 RF Output : On DL 2CCs UL 2CCs Cont. Band Cal

UE Power : 21.3 dBm

Measurement Signaling

Fundamental > Numeric

Power Measurement (1 / 1)

	Avg.	Max.	Min.
Total TX Power	22.38	22.38	22.38 dBm
PCC TX Power	21.85	21.85	21.85 dBm
Channel Power	21.84	21.84	21.84 dBm
SCC-1 TX Power	13.02	13.02	13.02 dBm
Channel Power	13.02	13.02	13.02 dBm

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

Frequency Level Signal UL RMC UL Allocation Mode Normal RB Pos. Min(#0) Number of RB 100 Starting RB 0 Max UL Throughput 3504 kbps MCS Index 5 QPSK 5 8760 B 64QAM 256QAM Disabled DL RMC TDD

Connected Start Call End Call