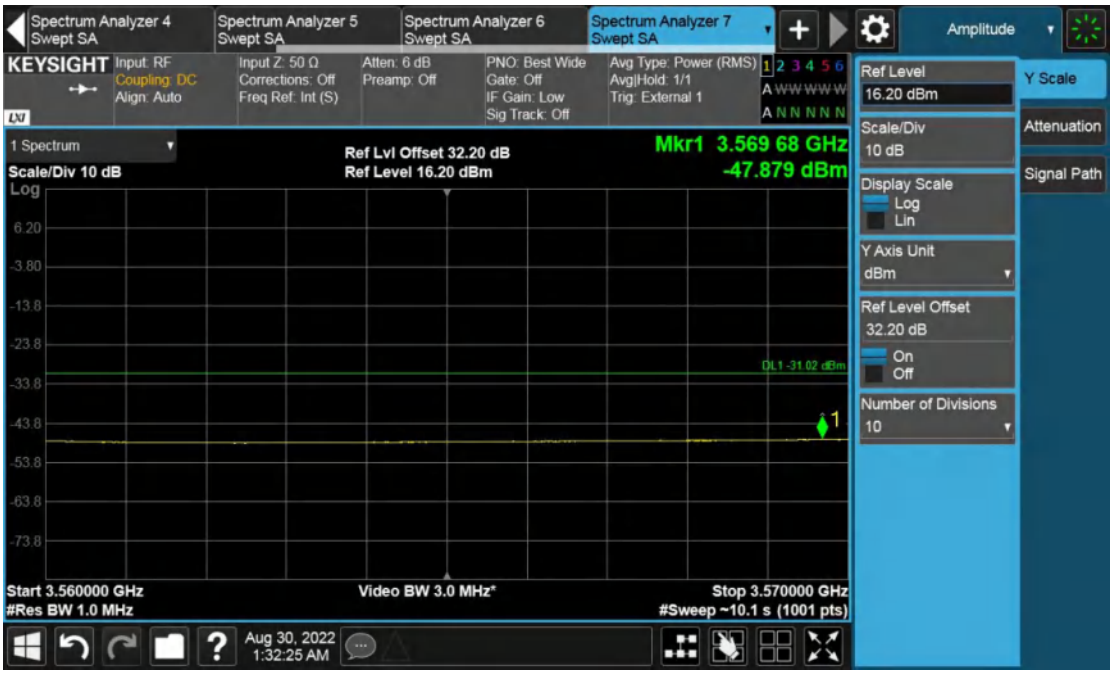
Channel Position B


Spectrum Analyzer 1 Swept SA
Spectrum Analyzer 3 Swept SA
Spectrum Analyzer 4 Swept SA
Spectrum Analyzer 5 Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
#Atten: 6 dB
Preamp: Off
PNO: Best Wide
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 1/1
Trig: External 1
1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 32.20 dB
Ref Level 20.20 dBm
Mkr1 3.550 000 GHz
-32.571 dBm
10.2
0.200
-9.80
-19.8
-29.8
-39.8
-49.8
-59.8
-69.8
DL1 -19.02 dBm
Start 3.549000 GHz
#Res BW 200 kHz
Video BW 620 kHz*
Stop 3.551000 GHz
#Sweep 10.0 s (1001 pts)
Aug 30, 2022
1:31:32 AM
Trace
Select Trace
Trace 1
Trace Type
Clear / Write
Trace Average
Max Hold
Min Hold
Restart Averaging
View/Blank
Active
View
Blank
Background
Trace Settings Table
Trace Control
Detector
Math
Trace Function
Normalize


Spectrum Analyzer 4 Swept SA
Spectrum Analyzer 5 Swept SA
Spectrum Analyzer 6 Swept SA
Spectrum Analyzer 7 Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
#Atten: 18 dB
Preamp: Off
PNO: Best Wide
Gate: Off
#IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 1/1
Trig: External 1
1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 32.20 dB
Ref Level 12.20 dBm
Mkr1 3.551 000 GHz
-28.534 dBm
2.20
-7.80
-17.8
-27.8
-37.8
-47.8
-57.8
-67.8
-77.8
DL1 -19.02 dBm
Start 3.551000 GHz
#Res BW 1.0 MHz
Video BW 3.0 MHz*
Stop 3.560000 GHz
#Sweep ~10.1 s (1001 pts)
Aug 30, 2022
1:31:58 AM
Marker
Select Marker
Marker 1
Marker Frequency
3.551000000 GHz
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Continuous Peak Search
On
Off
Settings
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter



Channel Position T

9.4 Conducted Unwanted Emissions

Specification:	FCC Part 27.53(n)
Test Results:	Pass

9.4.1 Definitions and Limit

According to Part 27.53 (n):

The following emission limits apply to stations transmitting in the 3450-3550 MHz band:

(1) For base station operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with the provisions of this paragraph (n)(1) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. Notwithstanding the channel edge requirement of −13 dBm per megahertz, for base station operations in the 3450-3550 MHz band, the conducted power of any emission below 3440 MHz or above 3560 MHz shall not exceed −25 dBm/MHz, and the conducted power of emissions below 3430 MHz or above 3570 MHz shall not exceed −40 dBm/MHz.

9.3.2 Method of Measurements:

The conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. In the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. Notwithstanding the channel edge requirement of −13 dBm per megahertz, for base station operations in the 3450-3550 MHz band, the conducted power of any emission below 3440 MHz or above 3560 MHz shall not exceed −25 dBm/MHz, and the conducted power of emissions below 3430 MHz or above 3570 MHz shall not exceed −40 dBm/MHz.

For MIMO mode configurations , the limit was adjusted with a correction of -6.02dB [10log1 /4)] by using the Measure and Add 10log (N) dB technique according to KDB 662911 D01 Multiple Transmitter Output accounting for simultaneous transmission from antenna ports.

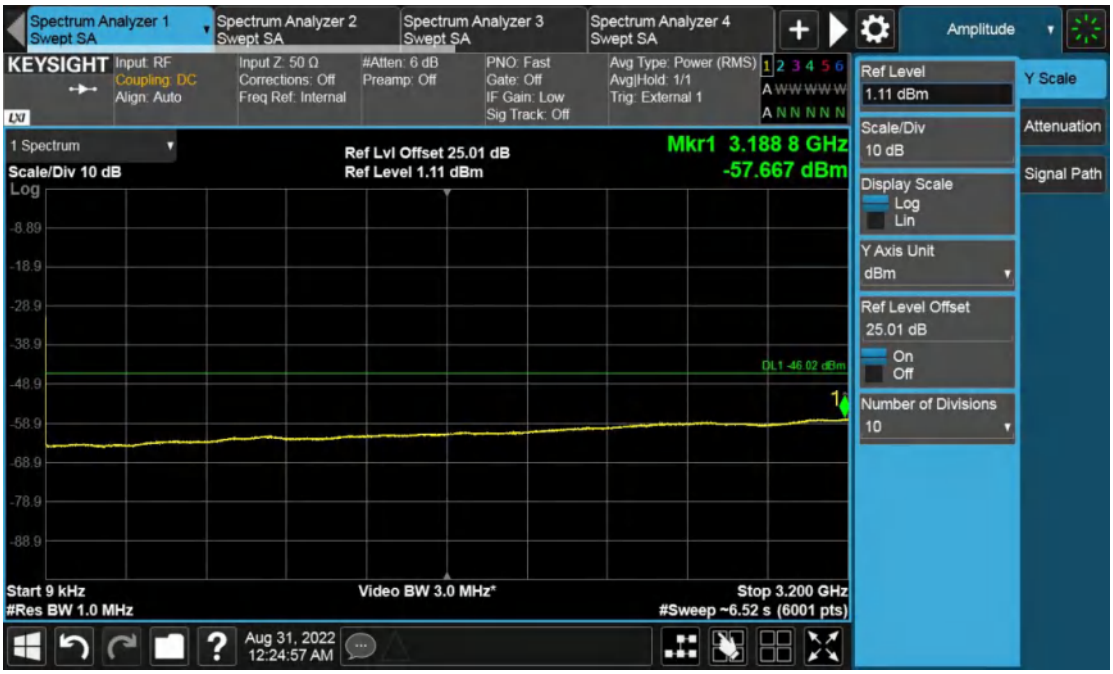
Spectrum analyzer detector was set as RMS.

9.4.3 Measurement result

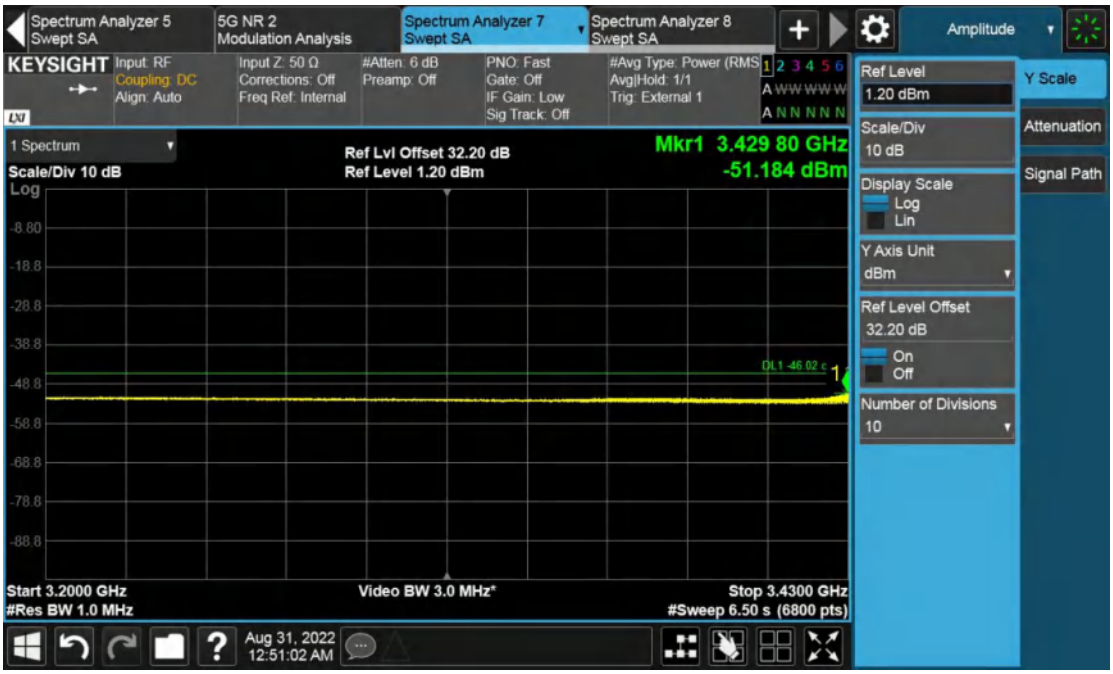
Configuration NR-MIMO-1C-UE

Antenna Port	Channel Position	Modulation	Carrier Bandwidth	RBW (kHz)	Limit (dBm)
C	B	QPSK	20	1000	-46.02
C	T	QPSK	20	1000	-46.02

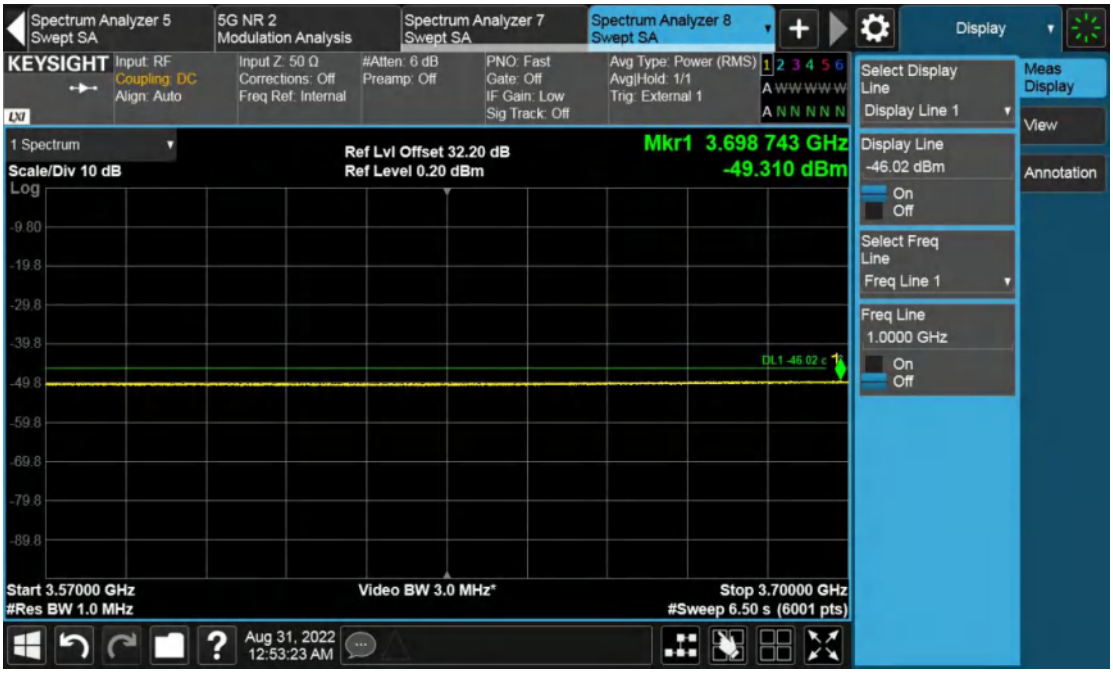
Test figure as below:



Channel Position B, 9kHz to 3200MHz



Channel Position B, 3200MHz to 3430MHz



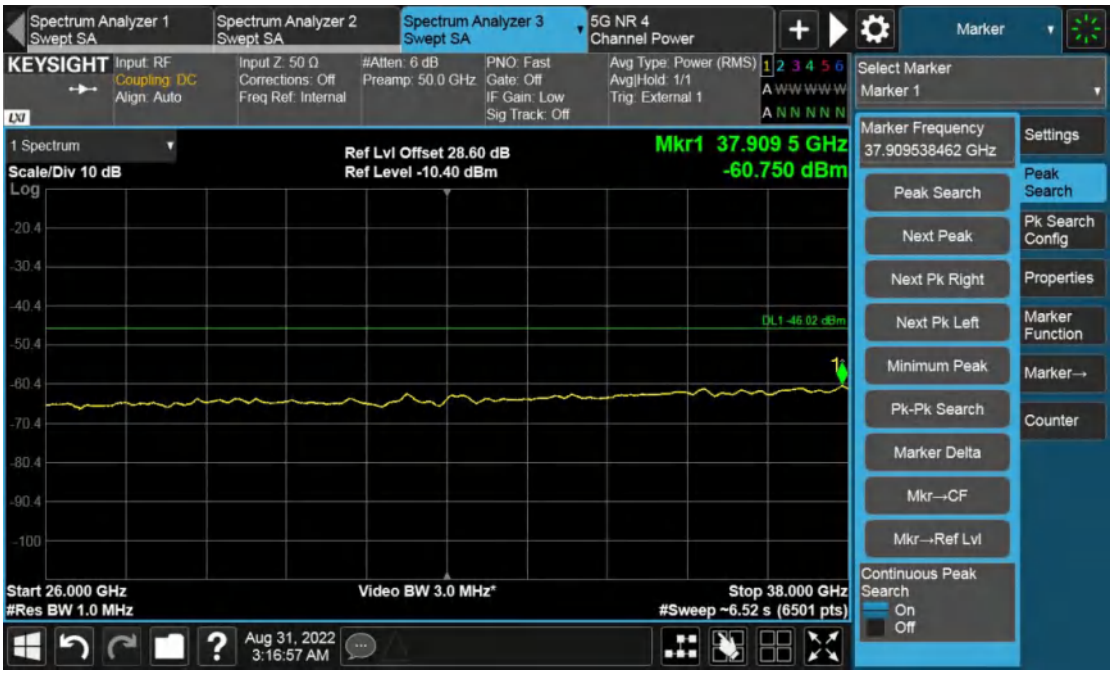
Channel Position B, 3570MHz to 3700MHz

Channel Position B, 3700MHz to 6GHz

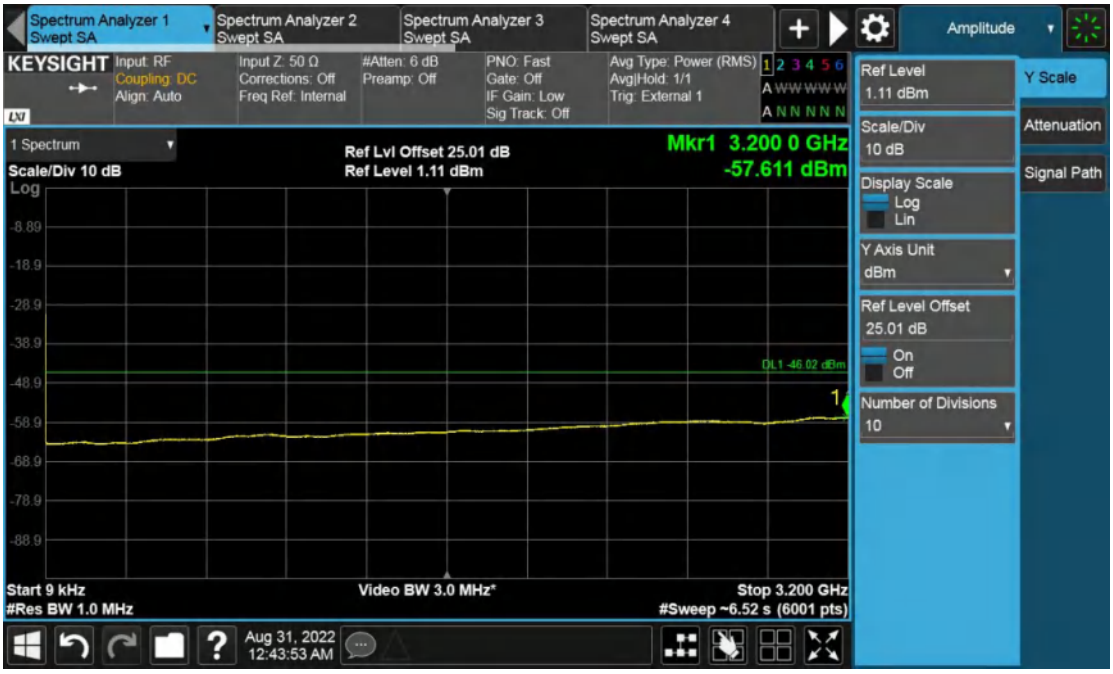
Channel Position B, 6GHz to 12.75GHz

Channel Position B, 12.75GHz to 16GHz

Channel Position B, 16GHz to 26GHz

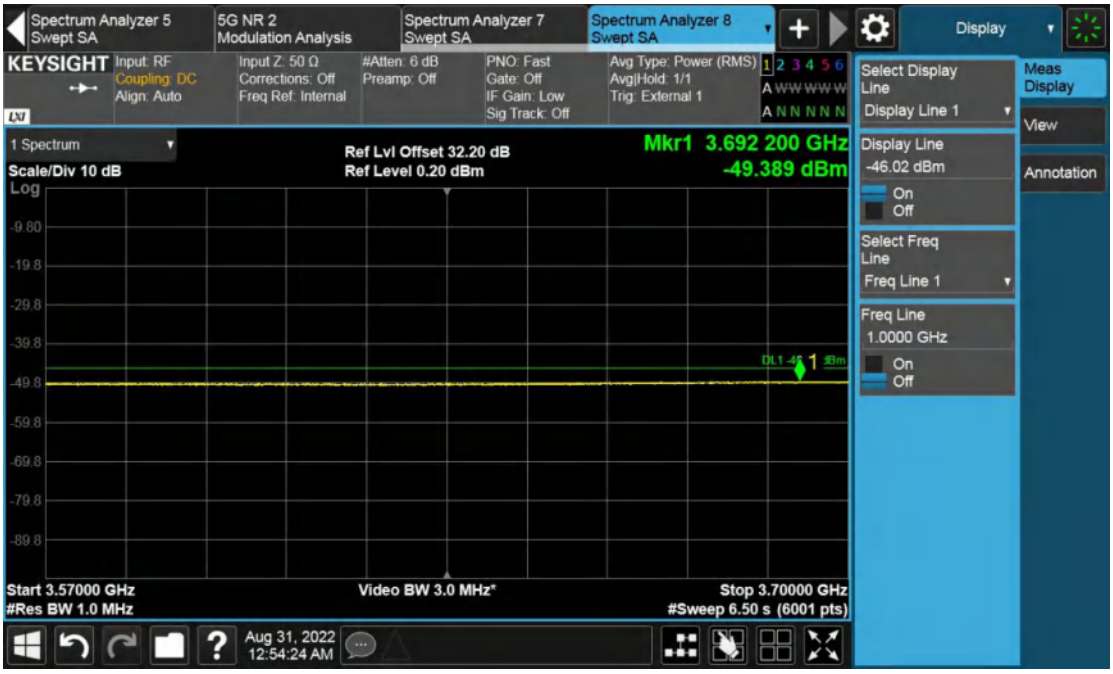


Channel Position B, 26GHz to 38GHz

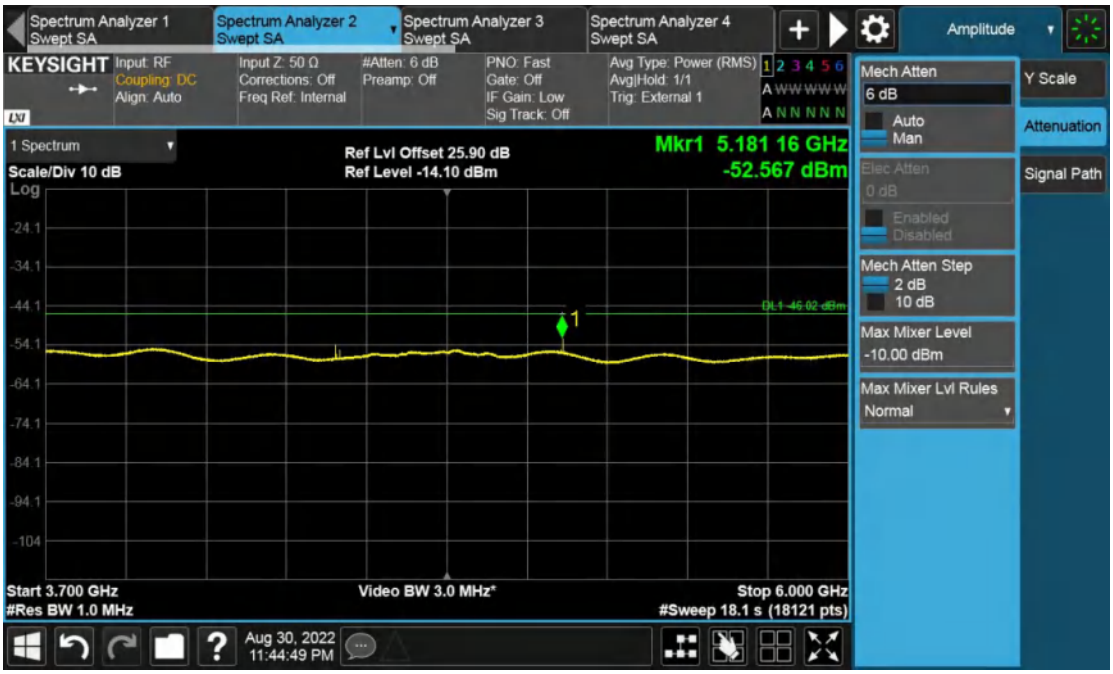


Channel Position T, 9kHz to 3200MHz

Channel Position T, 3200MHz to 3430MHz

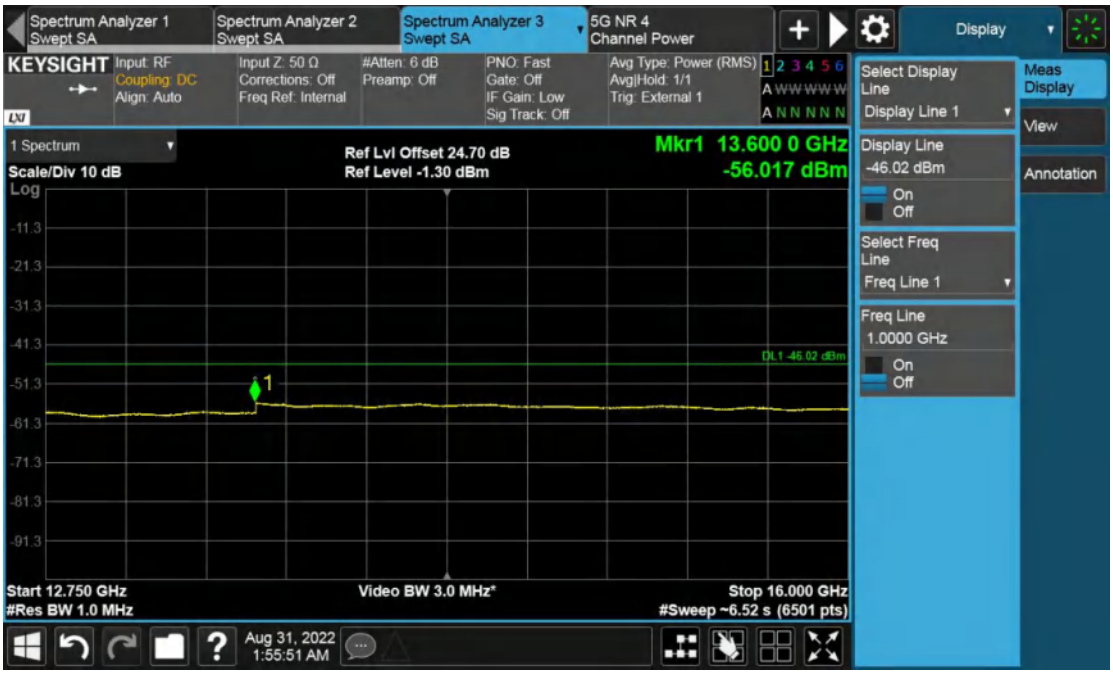


Channel Position T, 3570MHz to 3700MHz



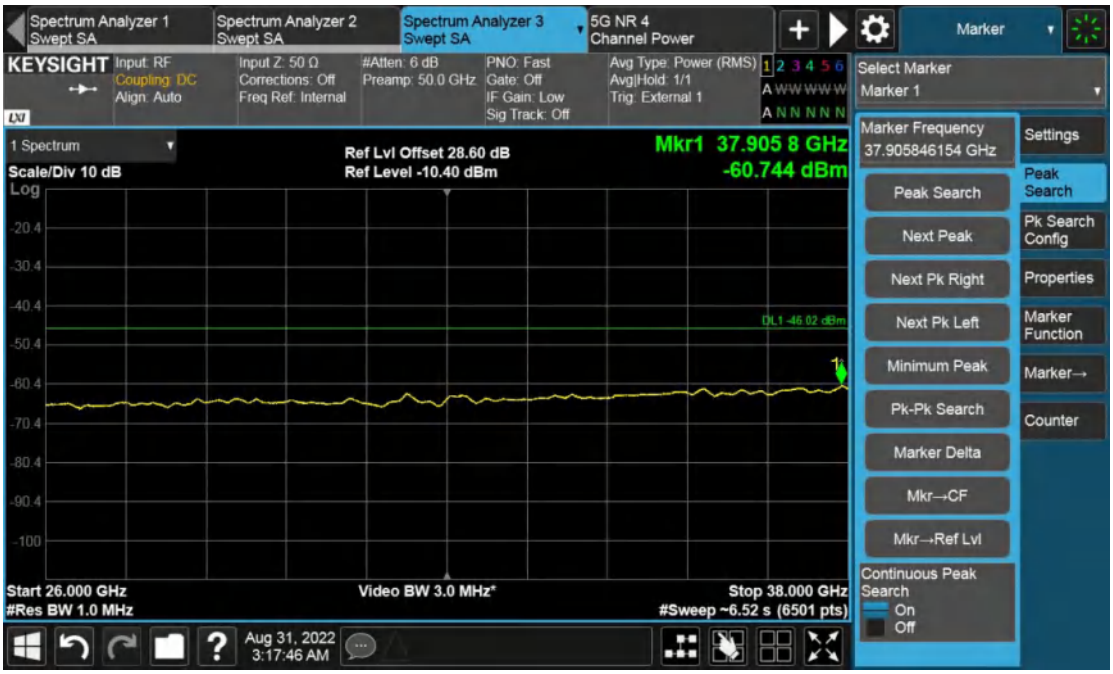
Channel Position T, 3700MHz to 6GHz

Channel Position T, 6GHz to 12.75GHz



Channel Position T, 12.75GHz to 16GHz

Channel Position T, 16GHz to 26GHz



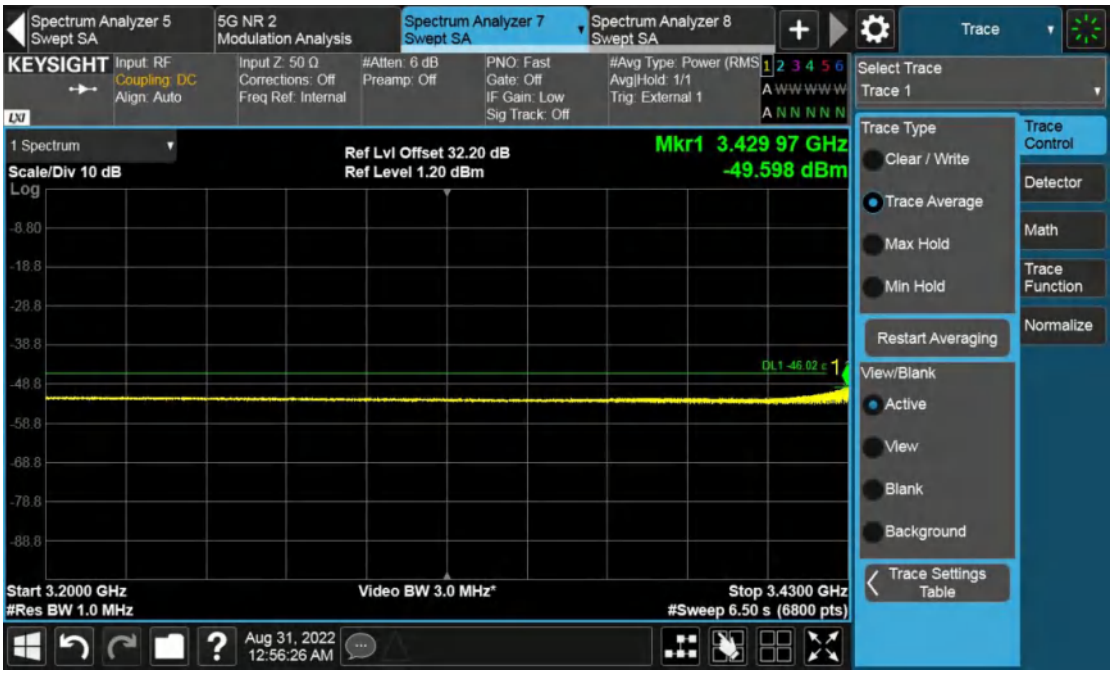
Channel Position T, 26GHz to 38GHz

Configuration NR-MIMO-1C-UE

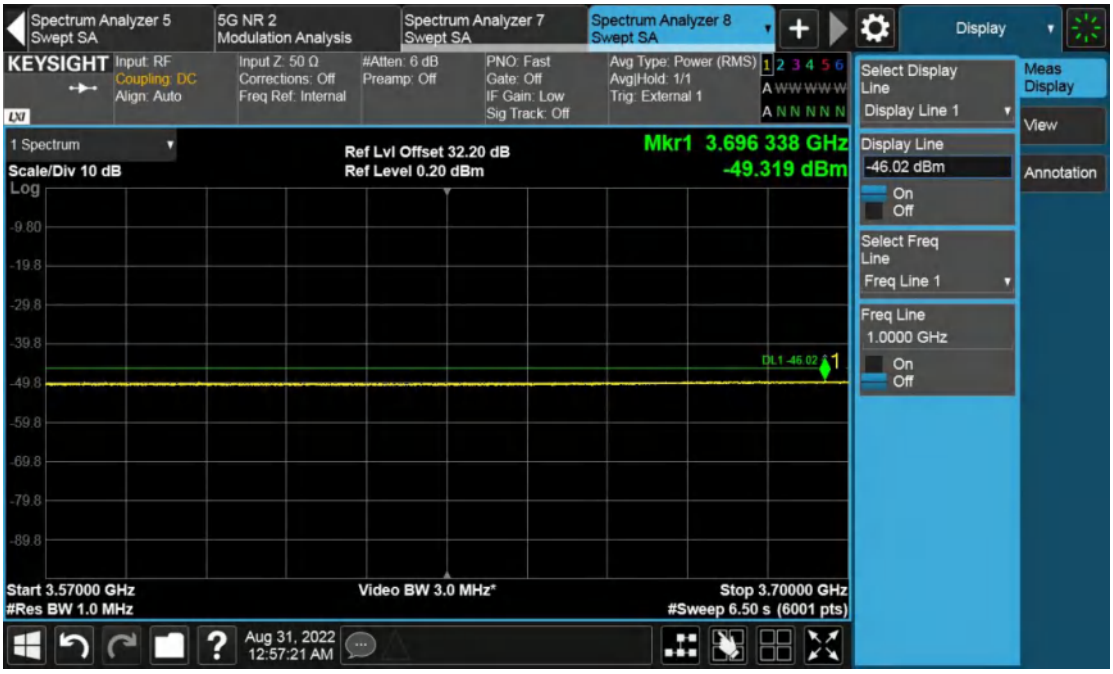
Antenna Port	Channel Position	Modulation	Carrier Bandwidth	RBW (kHz)	Limit (dBm)
C	B	QPSK	30	1000	-46.02
C	T	QPSK	30	1000	-46.02

Test figure as below:

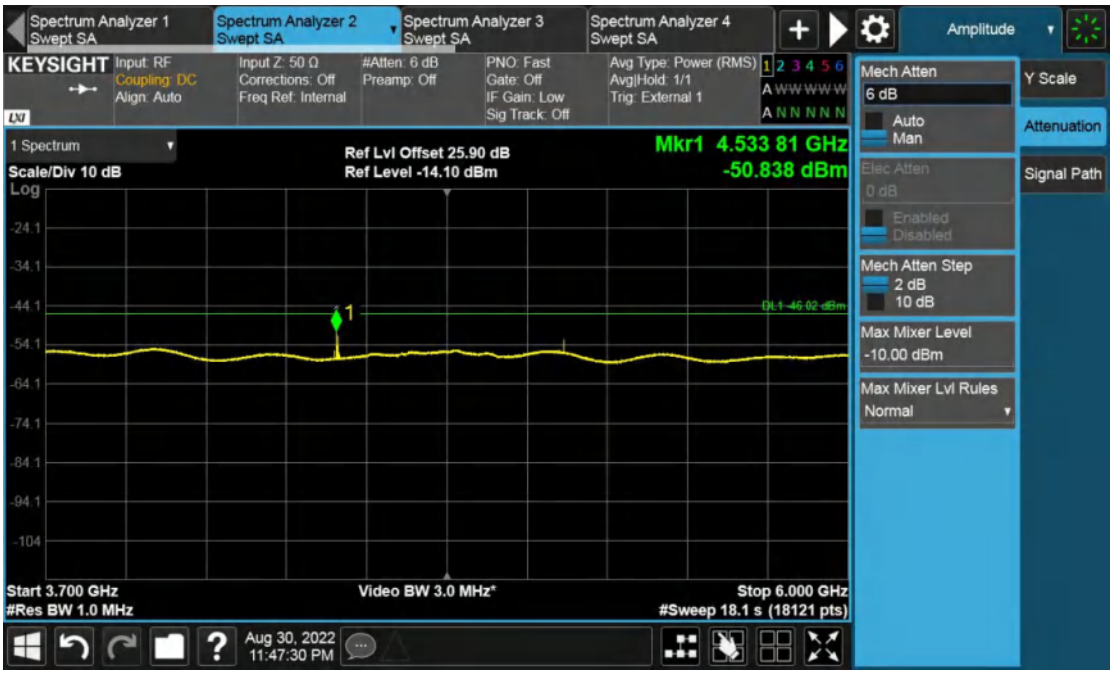
Channel Position B, 9kHz to 3200MHz



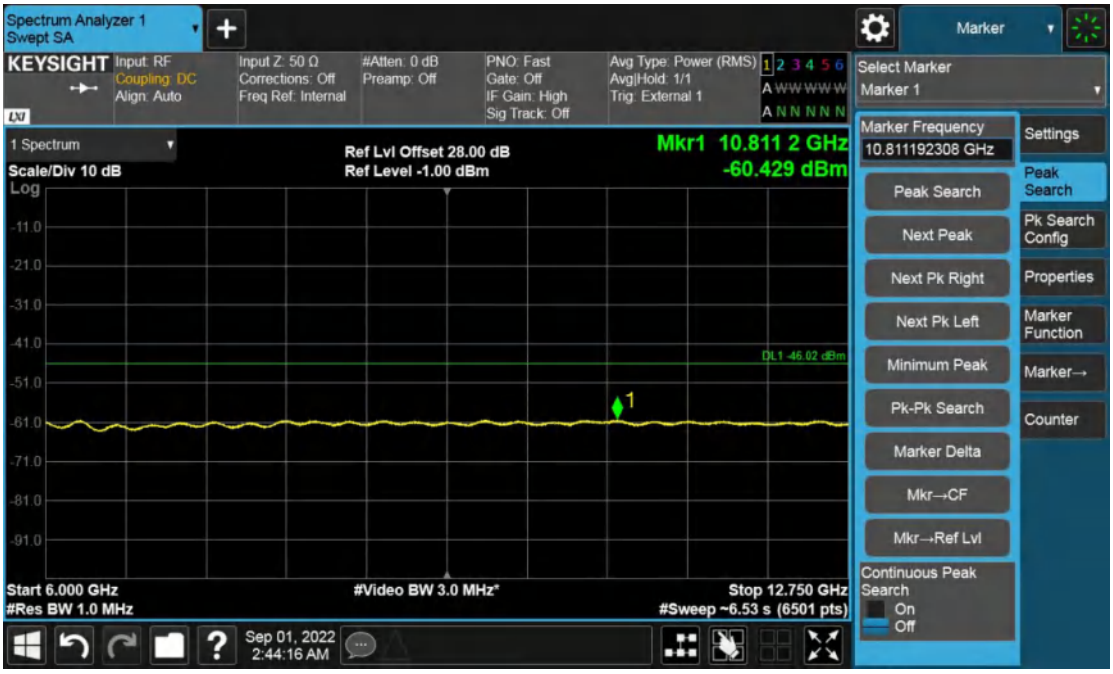
Channel Position B, 3200MHz to 3430MHz



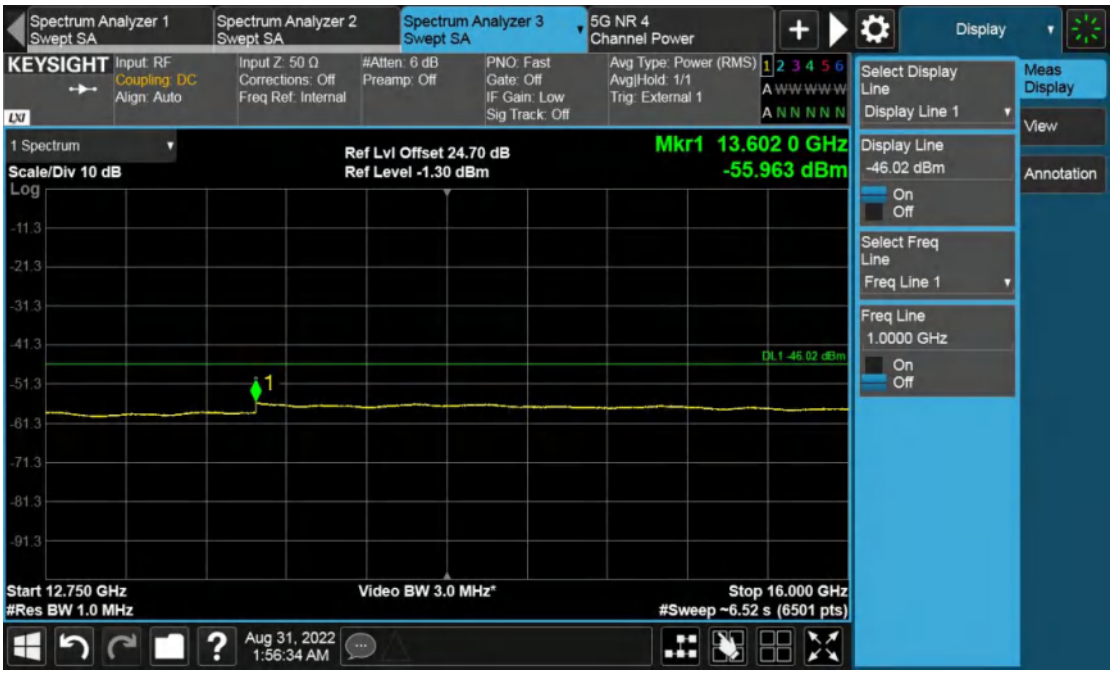
Channel Position B, 3570MHz to 3700MHz



Channel Position B, 3700MHz to 6GHz



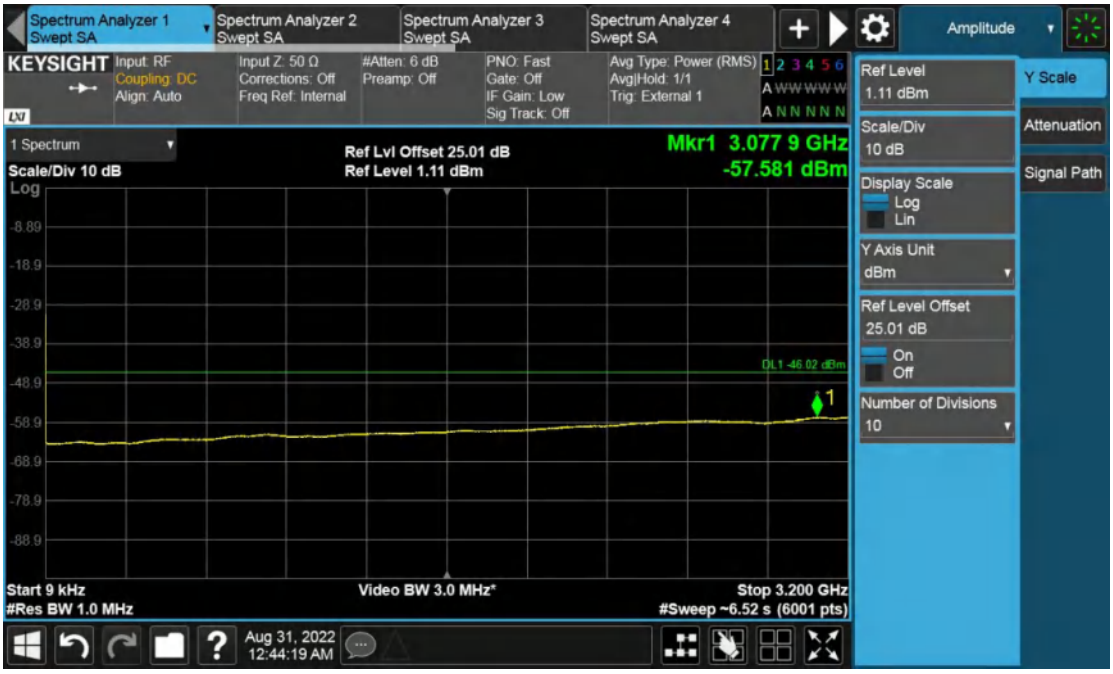
Channel Position B, 6GHz to 12.75GHz



Channel Position B, 12.75GHz to 16GHz

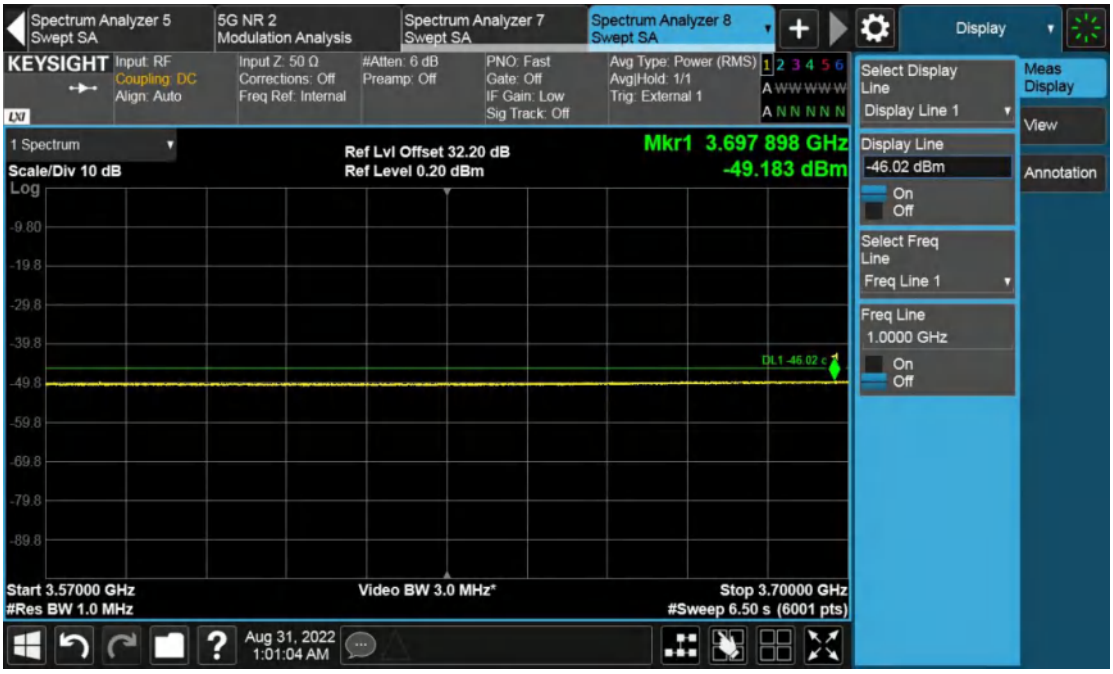
Channel Position B, 16GHz to 26GHz

Channel Position B, 26GHz to 38GHz

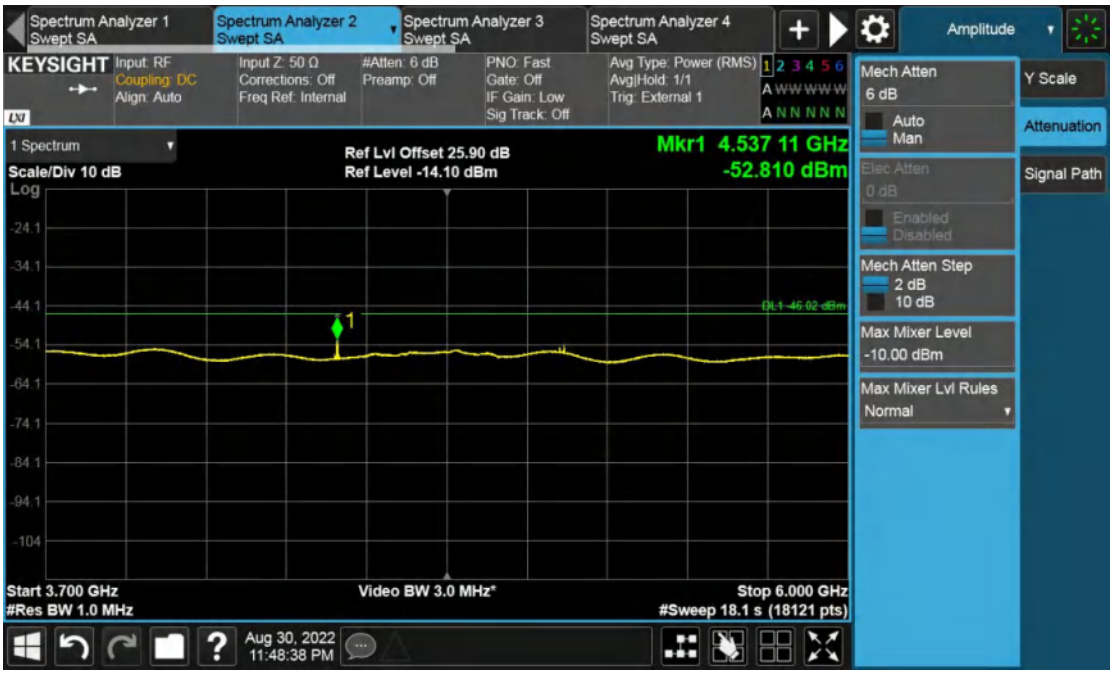


Channel Position T, 9kHz to 3200MHz

Channel Position T, 3200MHz to 3430MHz



Channel Position T, 3570MHz to 3700MHz

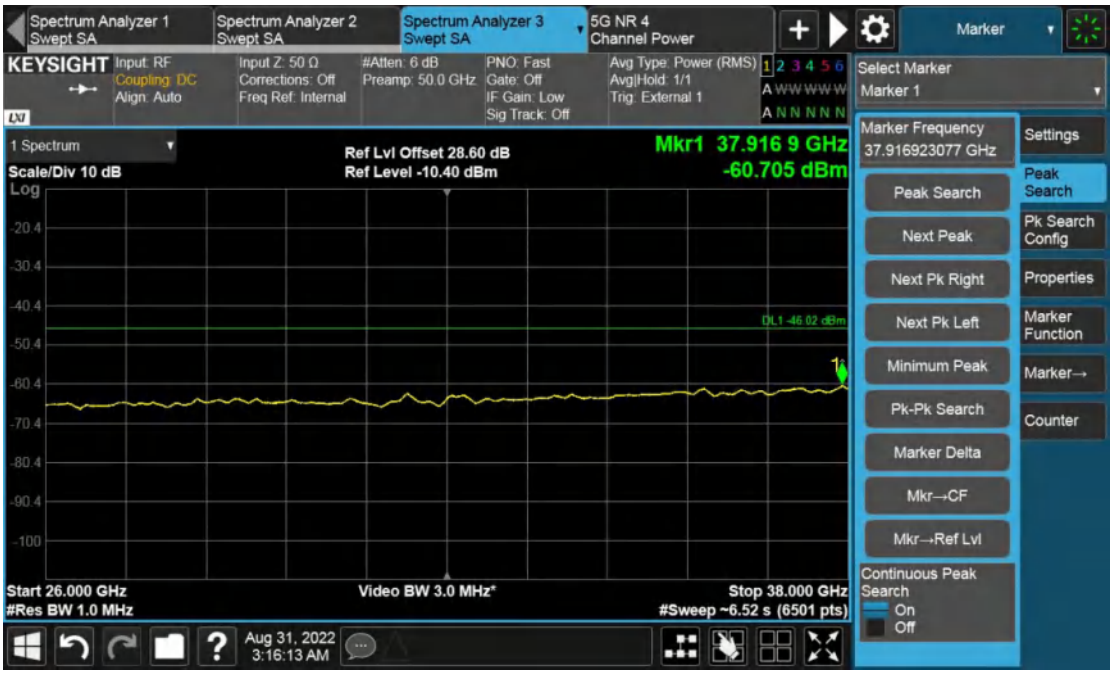


Channel Position T, 3700MHz to 6GHz

Channel Position T, 6GHz to 12.75GHz

Channel Position T, 12.75GHz to 16GHz

Channel Position T, 16GHz to 26GHz

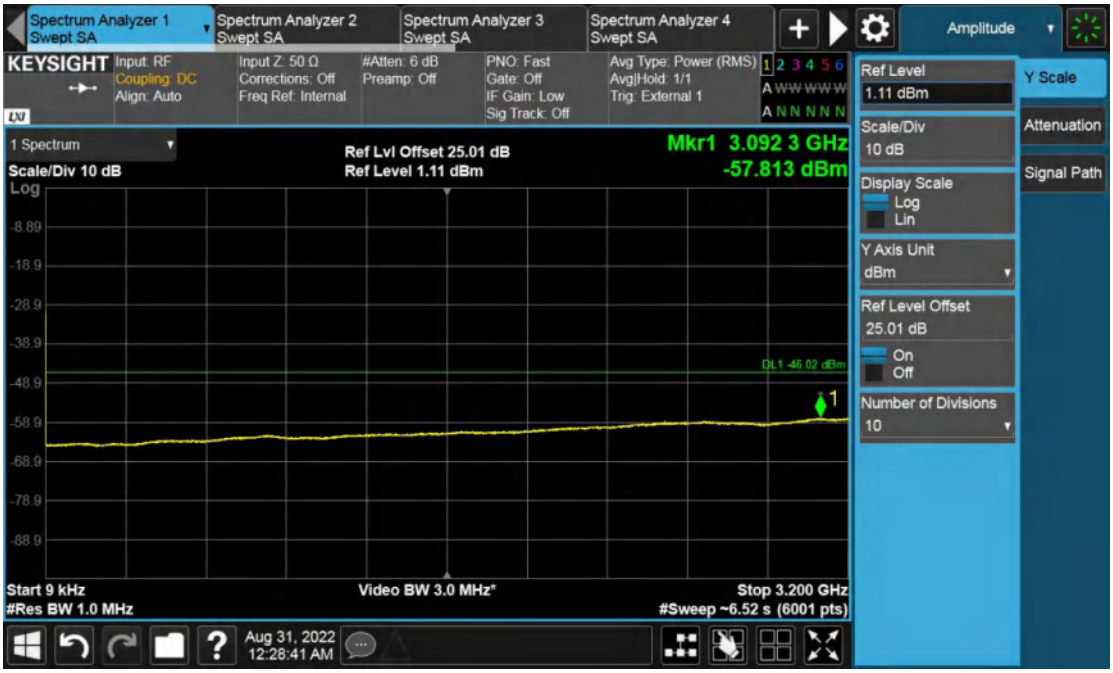


Channel Position T, 26GHz to 38GHz

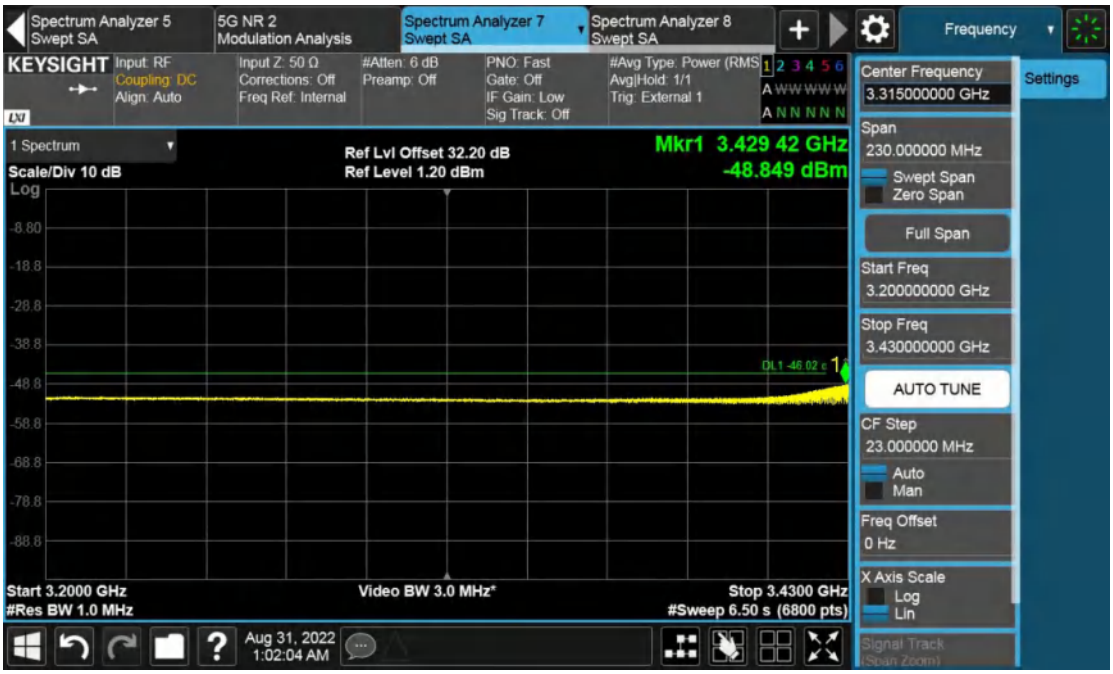
Configuration NR-MIMO-1C-UE

Antenna Port	Channel Position	Modulation	Carrier Bandwidth	RBW (kHz)	Limit (dBm)
C	B	QPSK	40	1000	-46.02
C	T	QPSK	40	1000	-46.02

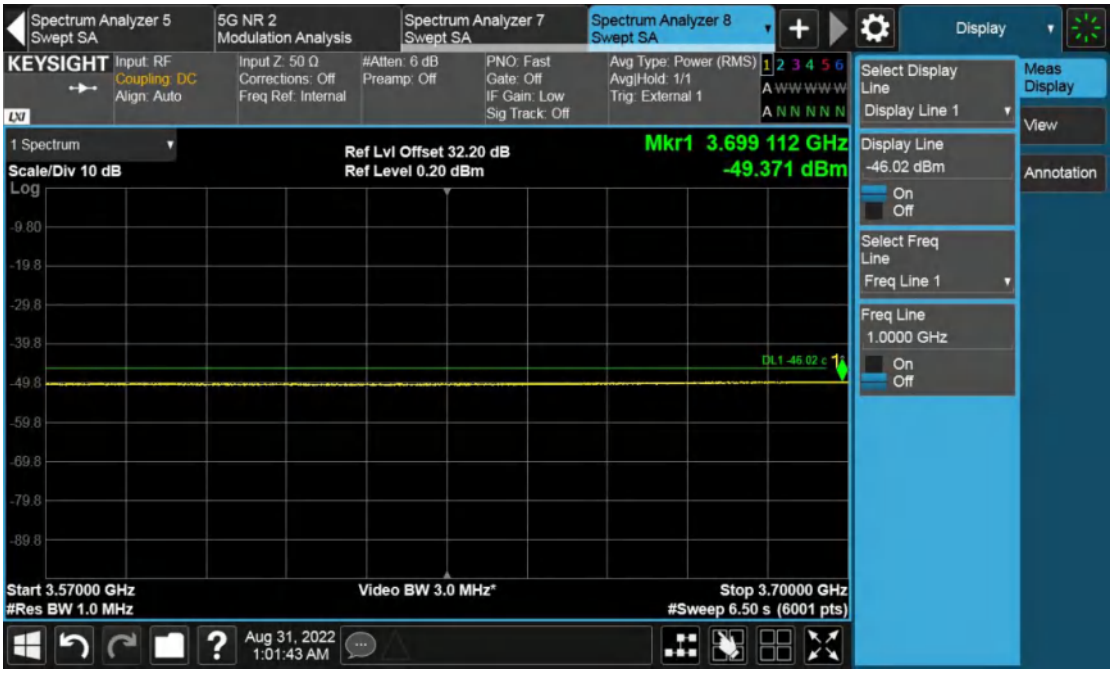
Test figure as below:



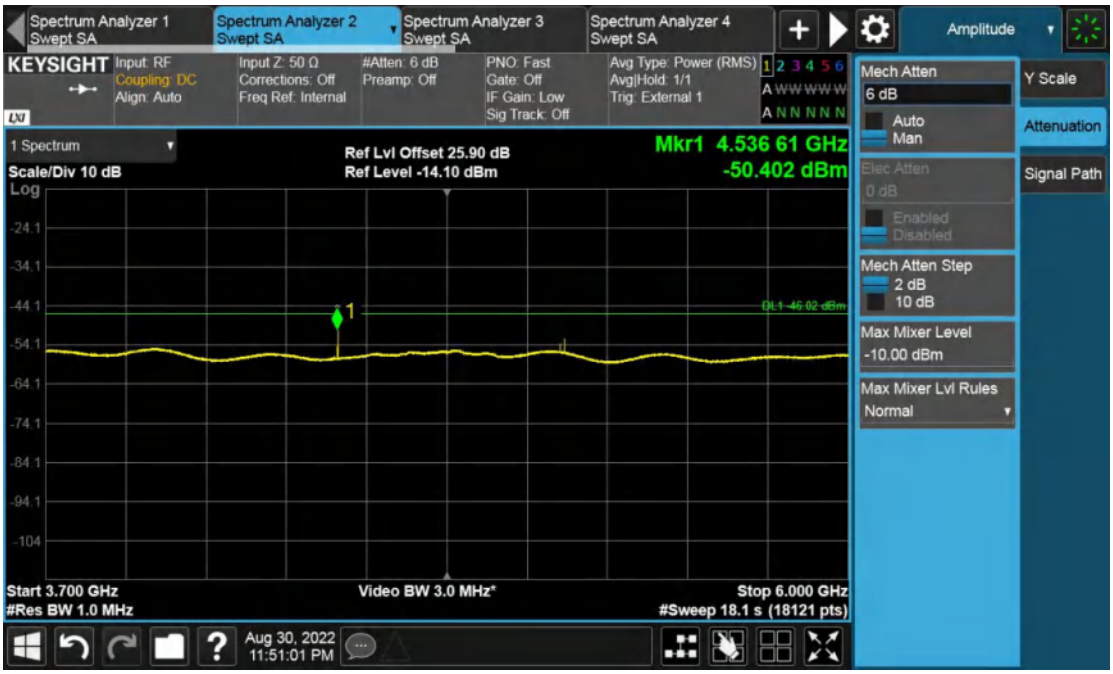
Channel Position B, 9kHz to 3200MHz



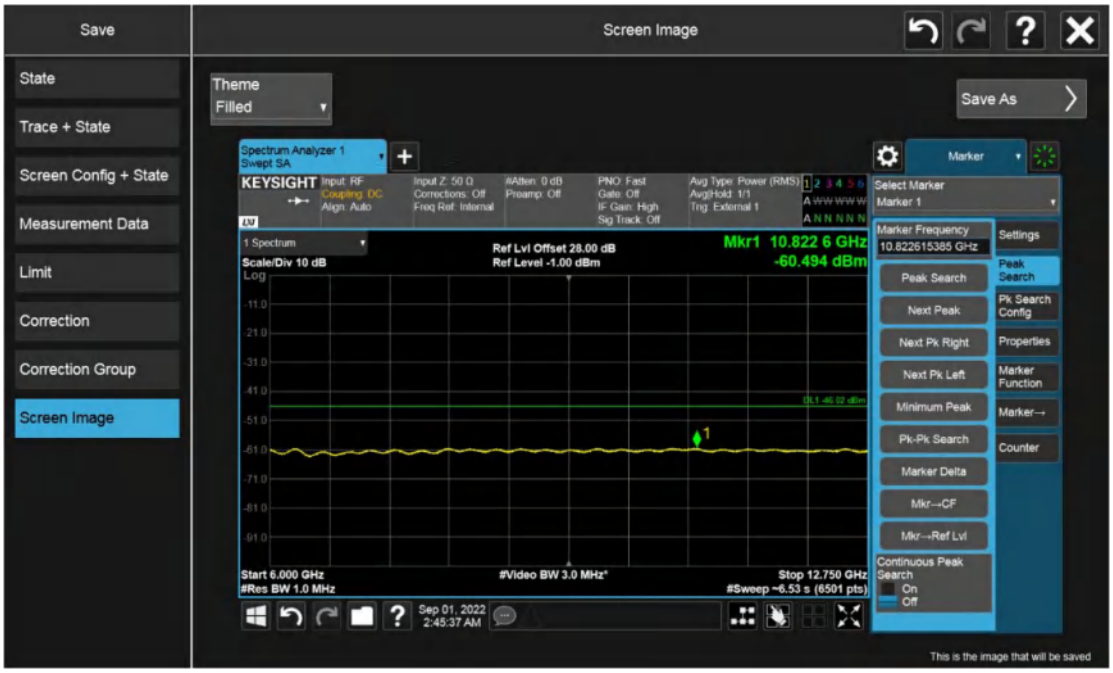
Channel Position B, 3200MHz to 3430MHz



Channel Position B, 3570MHz to 3700MHz

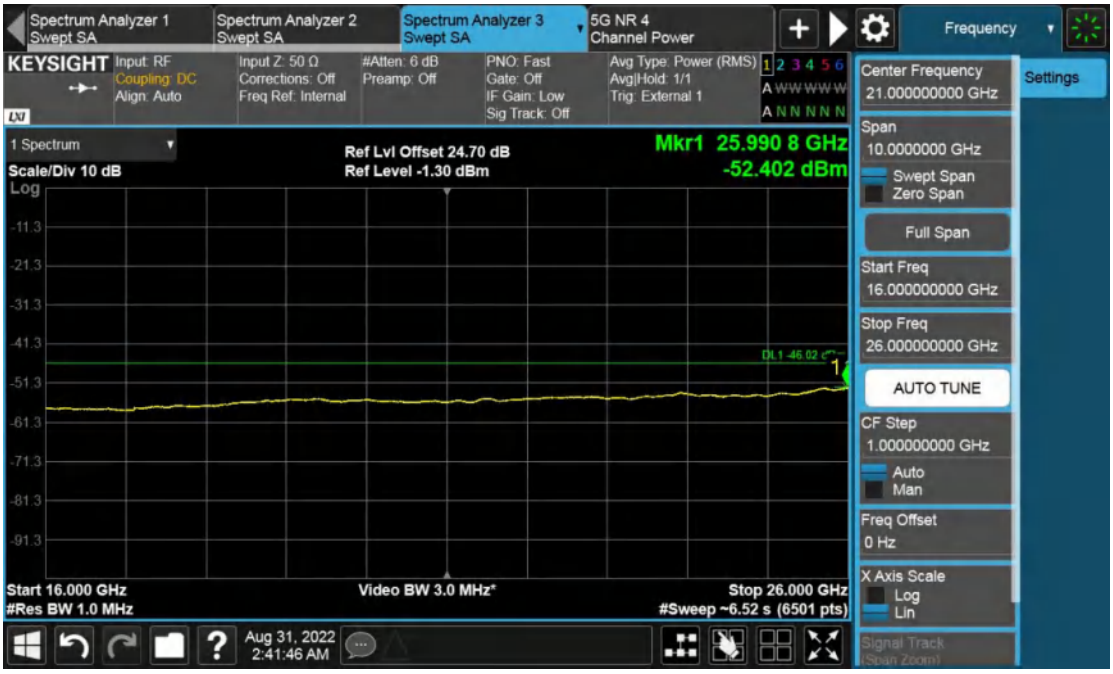


Channel Position B, 3700MHz to 6GHz

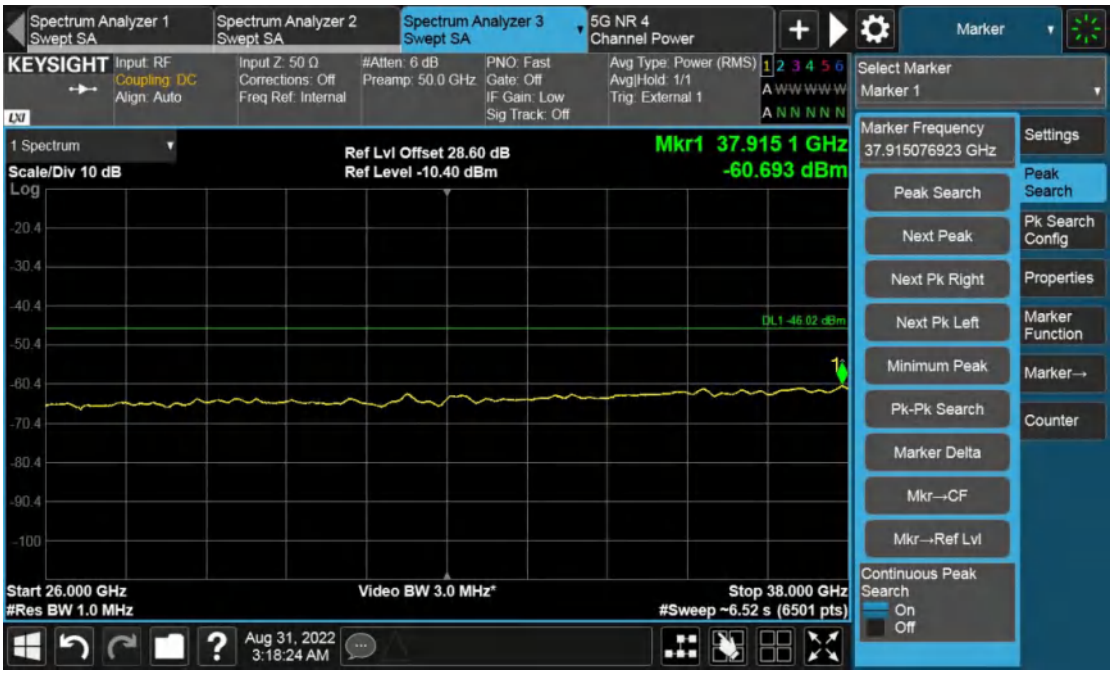


Channel Position B, 6GHz to 12.75GHz

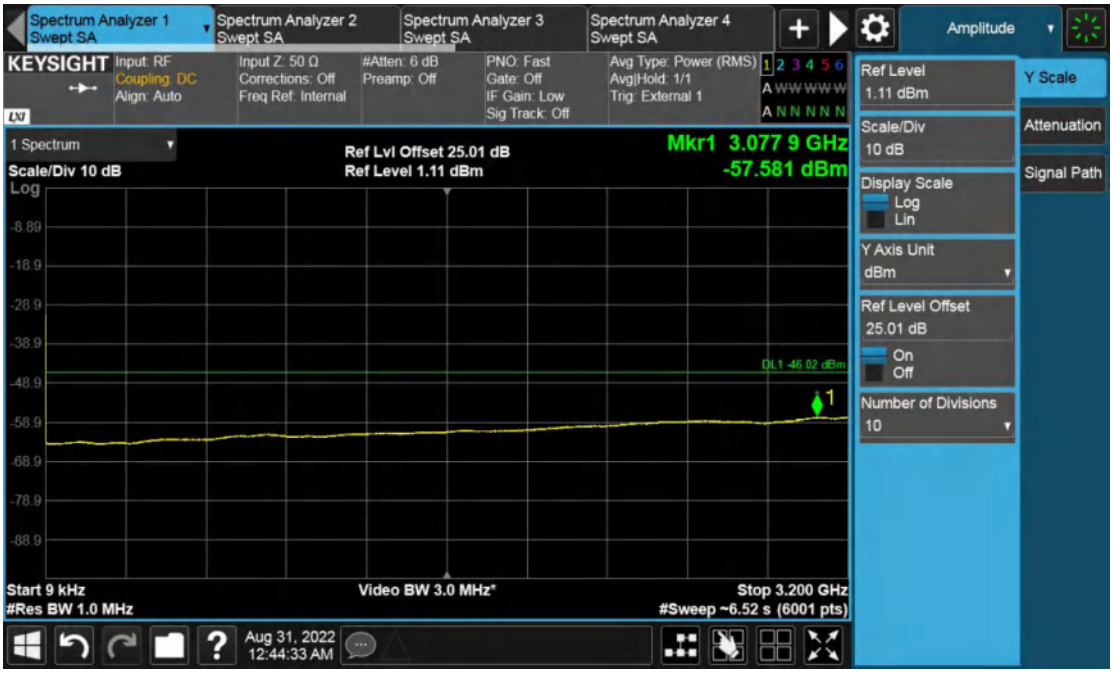
Channel Position B, 12.75GHz to 16GHz



Channel Position B, 16GHz to 26GHz

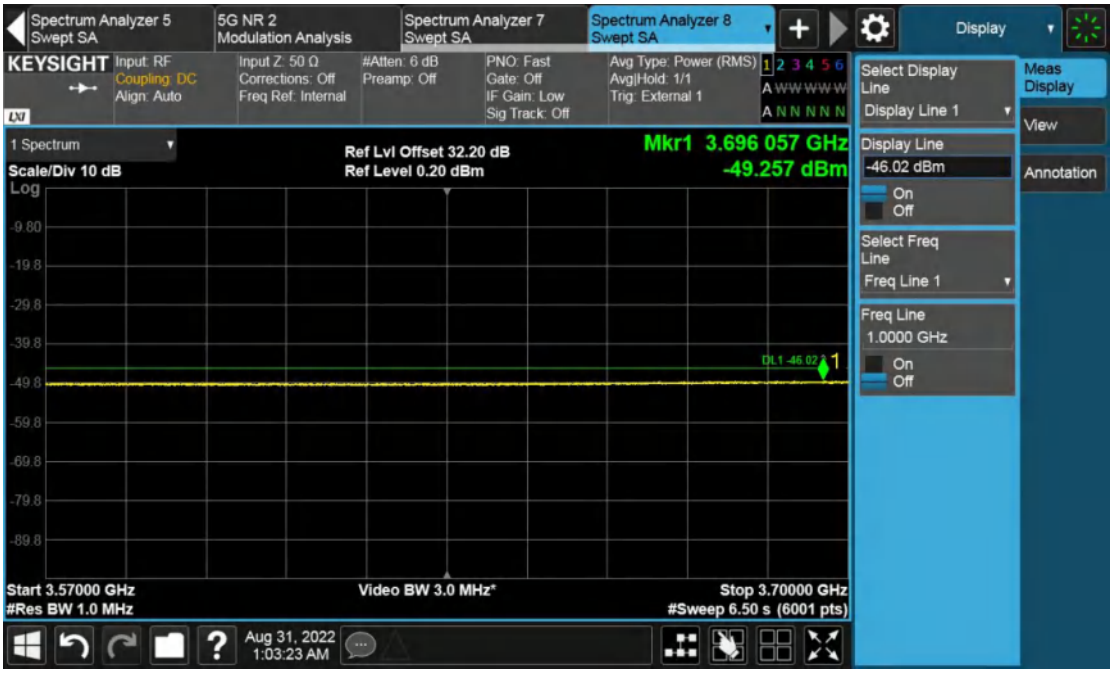


Channel Position B, 26GHz to 38GHz

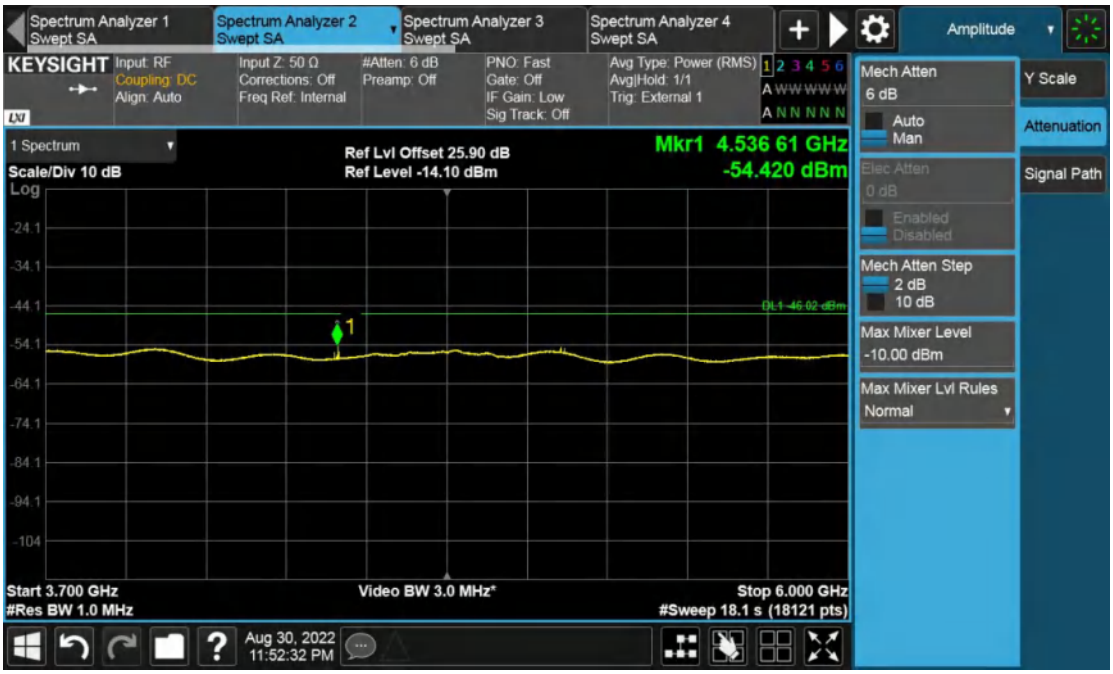


Channel Position T, 9kHz to 3200MHz

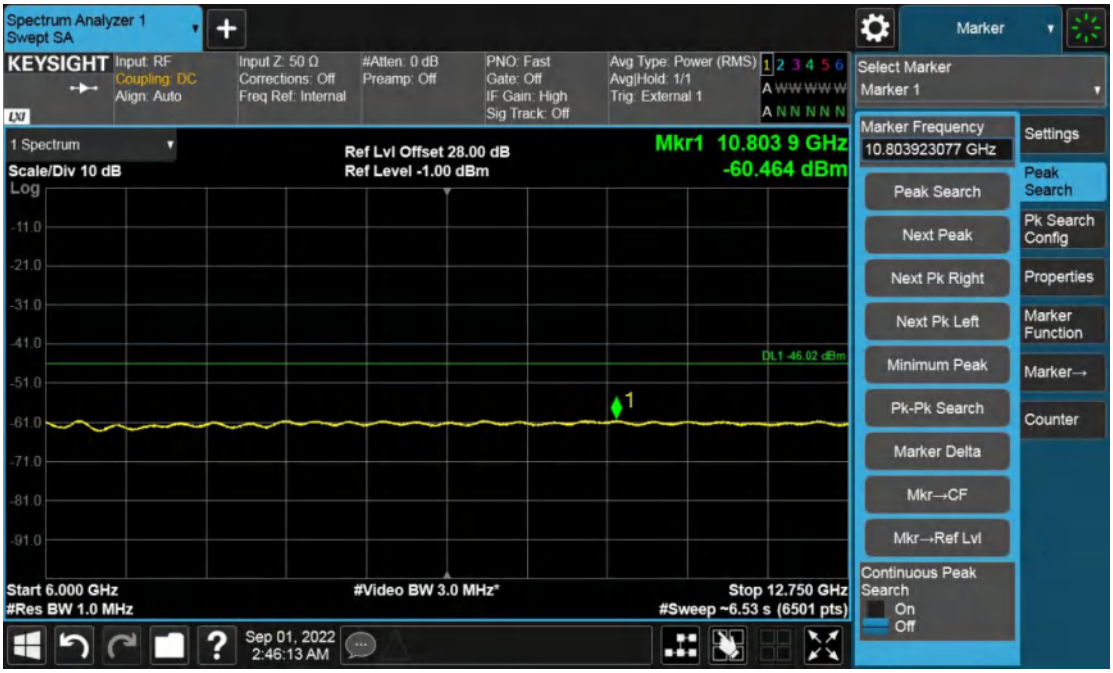
Channel Position T, 3200MHz to 3430MHz



Channel Position T, 3570MHz to 3700MHz



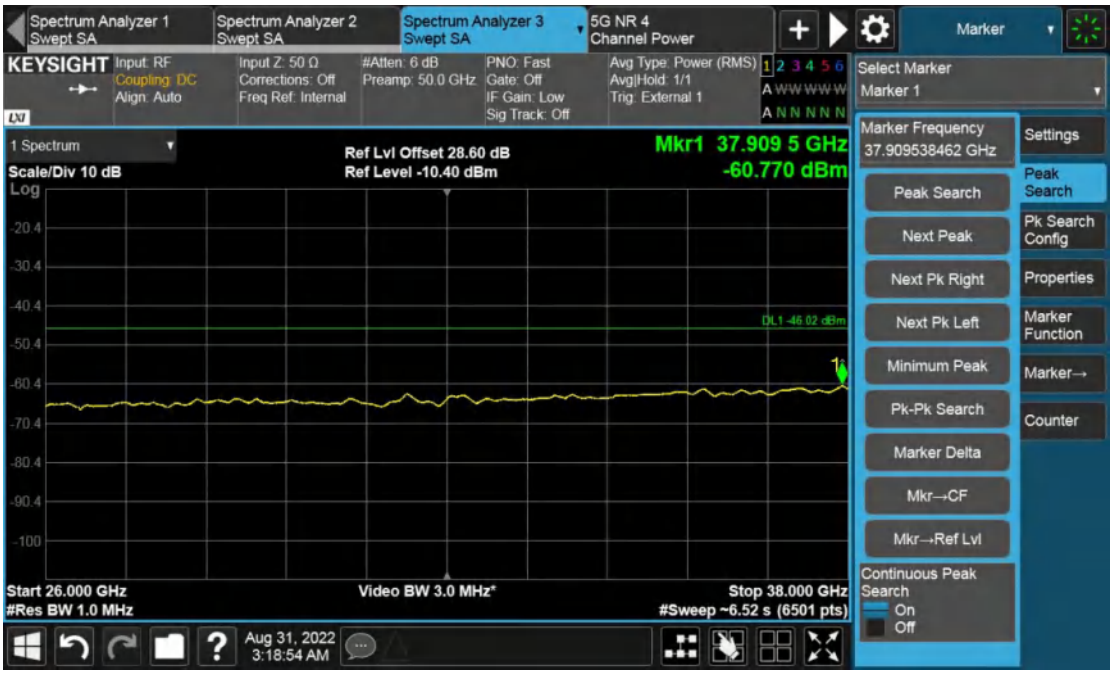
Channel Position T, 3700MHz to 6GHz



Channel Position T, 6GHz to 12.75GHz

Channel Position T, 12.75GHz to 16GHz

Channel Position T, 16GHz to 26GHz

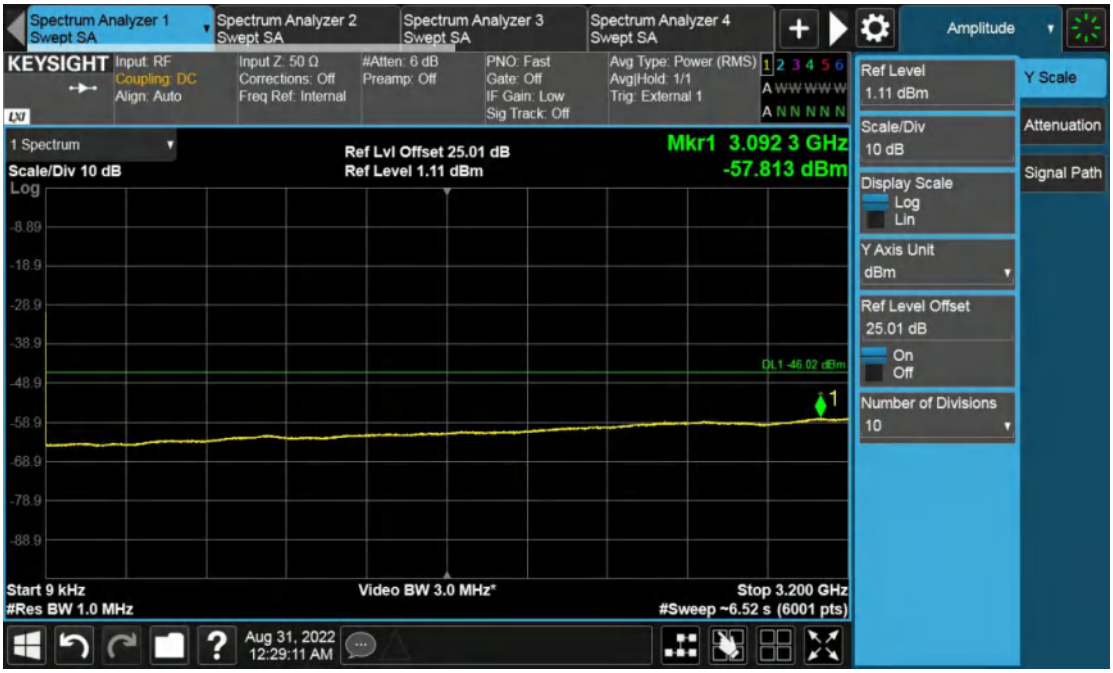


Channel Position T, 26GHz to 38GHz

Configuration NR-MIMO-1C-UE

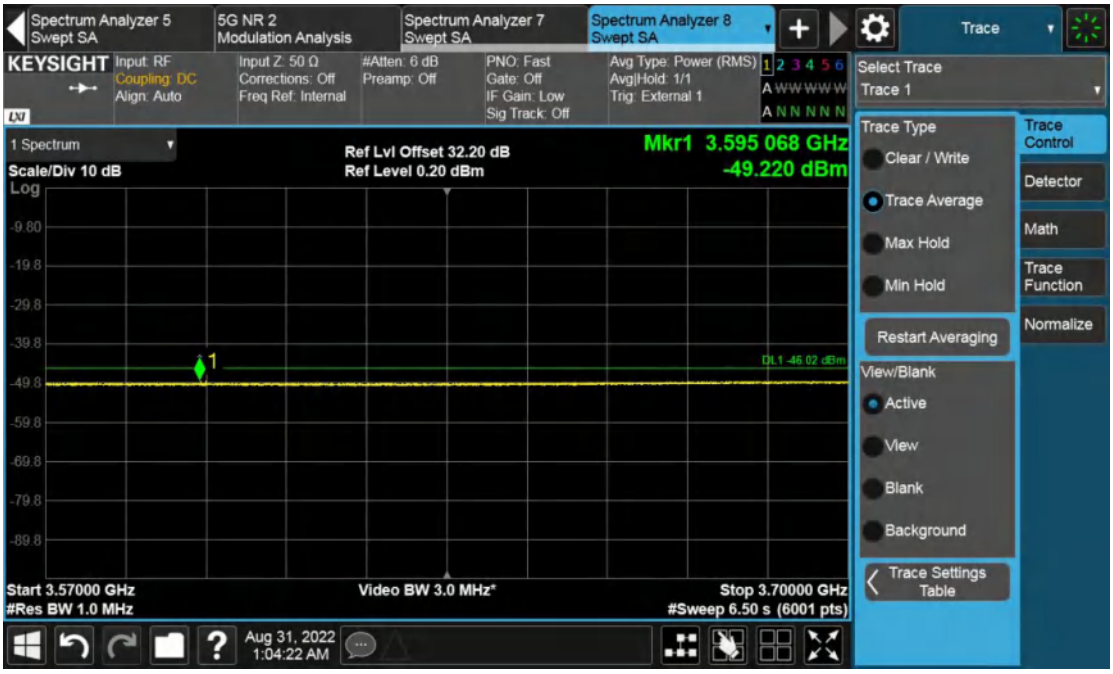
Antenna Port	Channel Position	Modulation	Carrier Bandwidth	RBW (kHz)	Limit (dBm)
C	B	QPSK	50	1000	-46.02
C	T	QPSK	50	1000	-46.02

Test figure as below:



Channel Position B, 9kHz to 3200MHz

Channel Position B, 3200MHz to 3430MHz



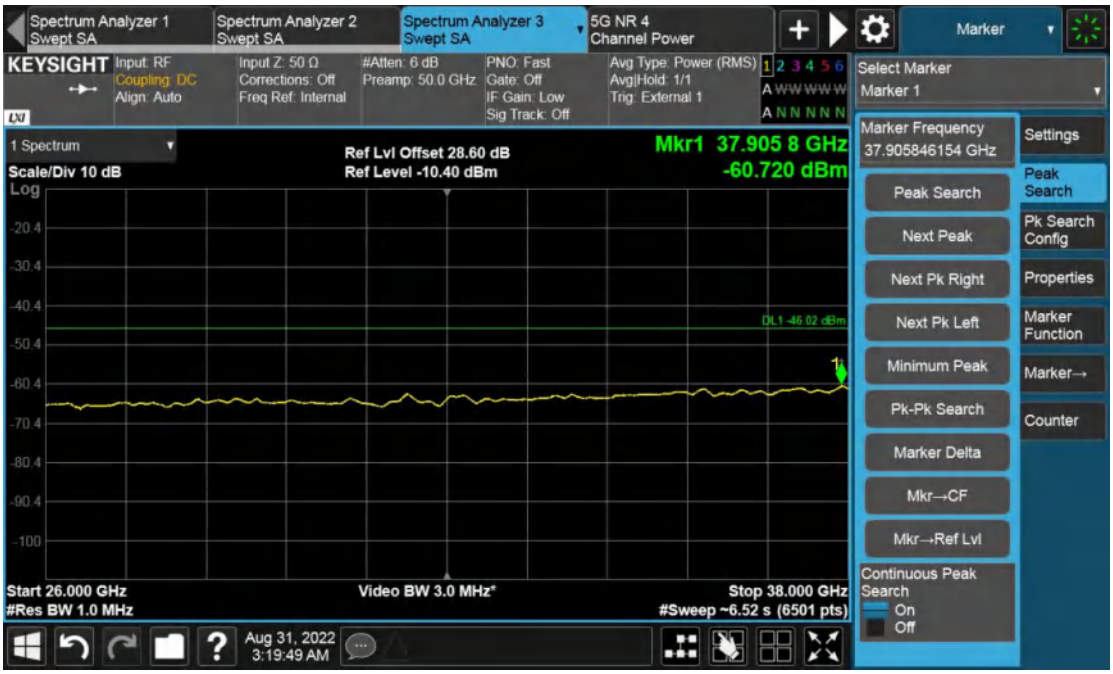
Channel Position B, 3570MHz to 3700MHz

Channel Position B, 3700MHz to 6GHz

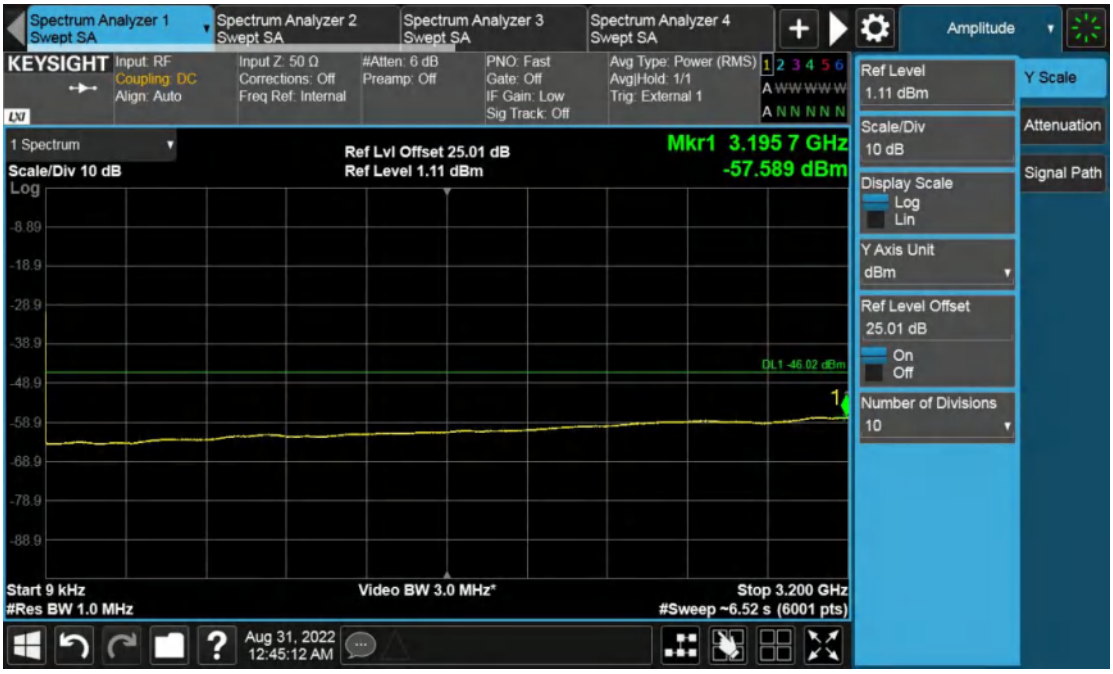
Channel Position B, 6GHz to 12.75GHz

Channel Position B, 12.75GHz to 16GHz

Channel Position B, 16GHz to 26GHz



Channel Position B, 26GHz to 38GHz

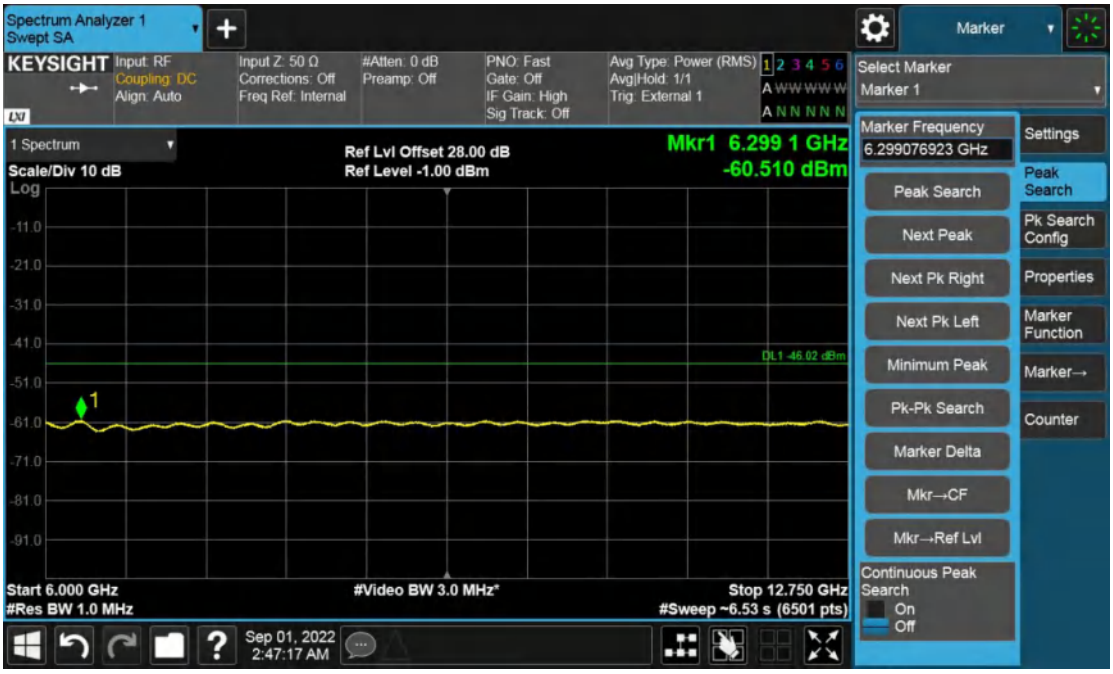


Channel Position T, 9kHz to 3200MHz

Channel Position T, 3200MHz to 3430MHz

Channel Position T, 3570MHz to 3700MHz

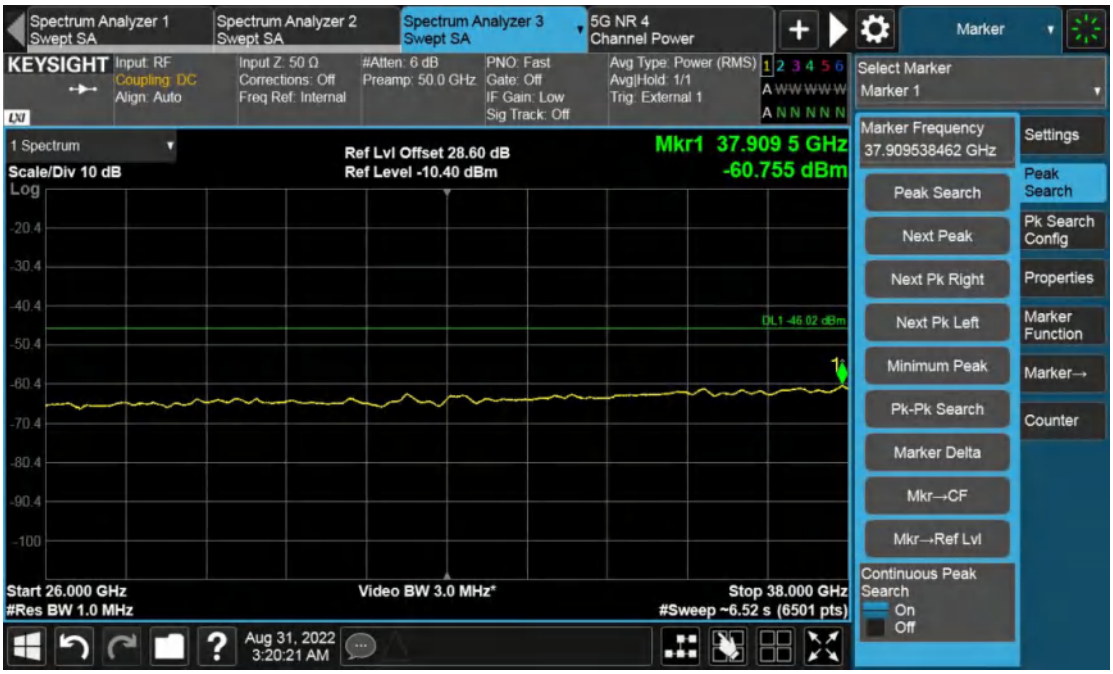
Channel Position T, 3700MHz to 6GHz



Channel Position T, 6GHz to 12.75GHz

Channel Position T, 12.75GHz to 16GHz

Channel Position T, 16GHz to 26GHz



Channel Position T, 26GHz to 38GHz