

### n77, Channel Bandwidth 70MHz

Channel 649000  
(3735.00MHz)

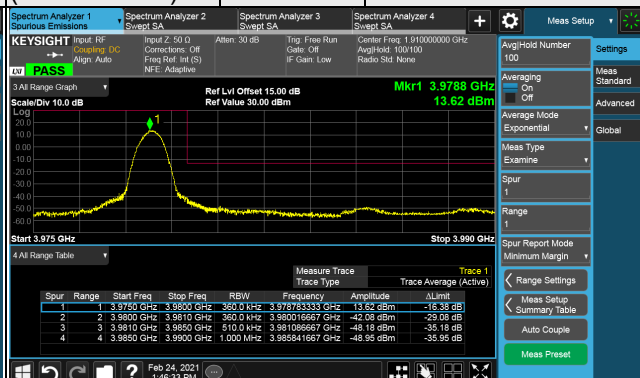
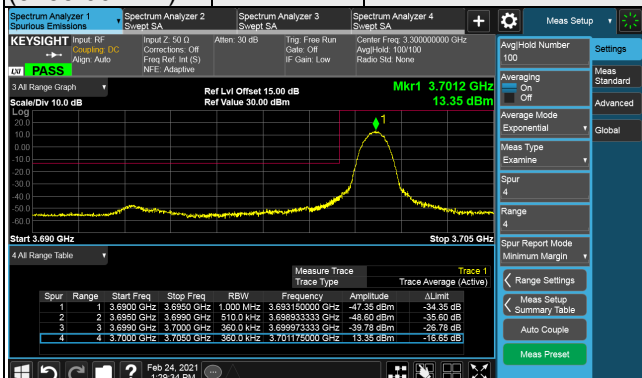
QPSK

1 RB / 0 RB Offset

Channel 663000  
(3945.00MHz)

QPSK

1 RB / 188 RB Offset



Channel 649000  
(3735.00MHz)

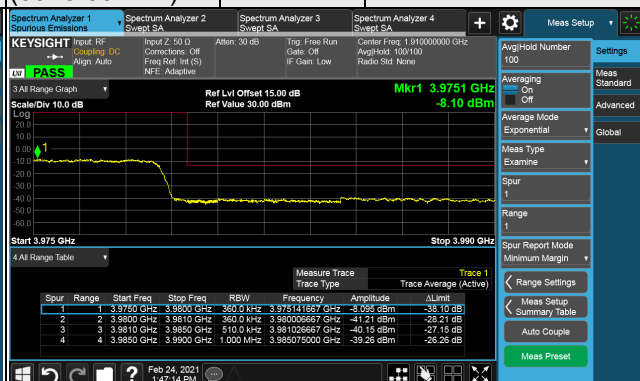
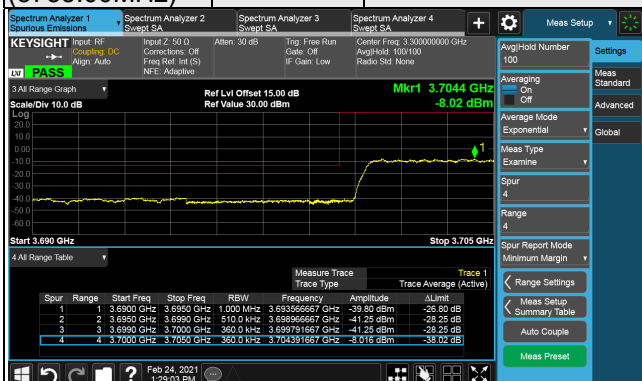
QPSK

189 RB / 0 RB Offset

Channel 663000  
(3945.00MHz)

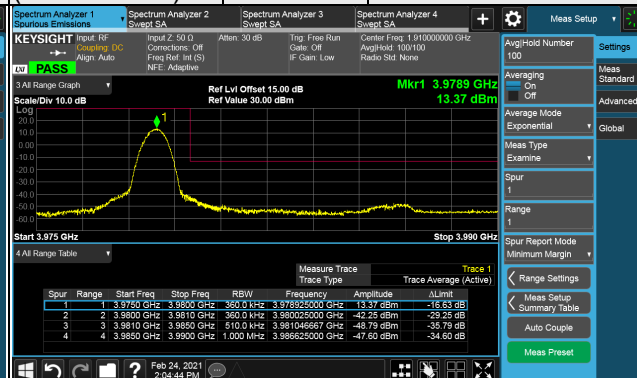
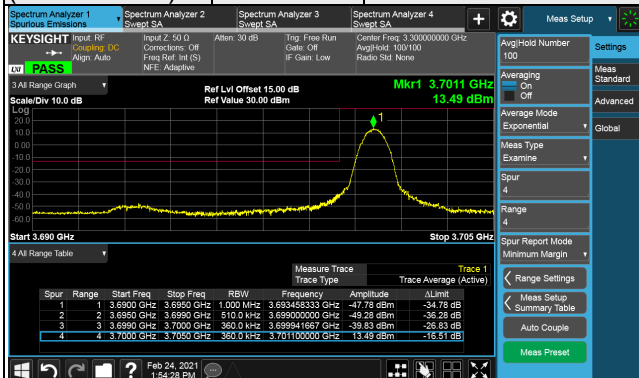
QPSK

189 RB / 0 RB Offset

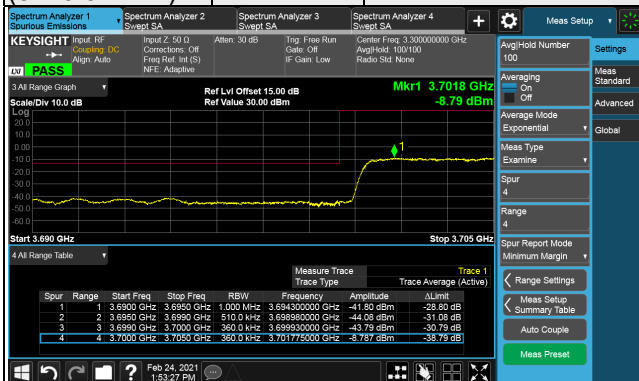


### n77, Channel Bandwidth 80MHz

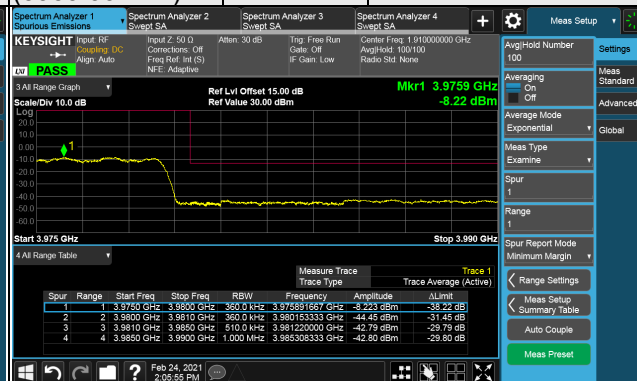
Channel 649334 (3740.01MHz) QPSK 1 RB / 0 RB Offset Channel 662666 (3939.99MHz) QPSK 1 RB / 216 RB Offset



Channel 649334 (3740.01MHz) QPSK 217 RB / 0 RB Offset



Channel 662666 (3939.99MHz) QPSK 217 RB / 0 RB Offset



### n77, Channel Bandwidth 90MHz

Channel 649668 (3745.02MHz) QPSK 1 RB / 0 RB Offset Channel 662332 (3934.98MHz) QPSK 1 RB / 244 RB Offset



Channel 649668 (3745.02MHz) QPSK 245 RB / 0 RB Offset Channel 662332 (3934.98MHz) QPSK 245 RB / 0 RB Offset



n77, Channel Bandwidth 100MHz

Channel 650000  
(3750.00MHz)

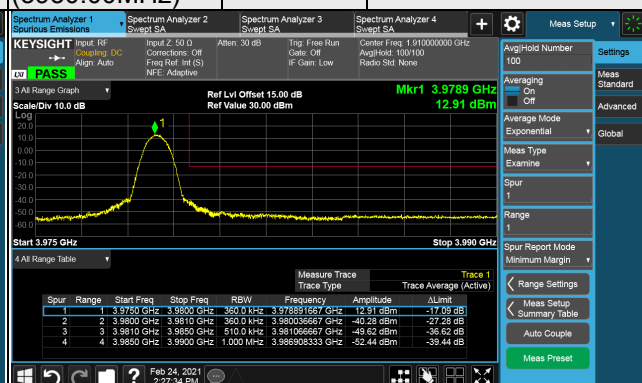
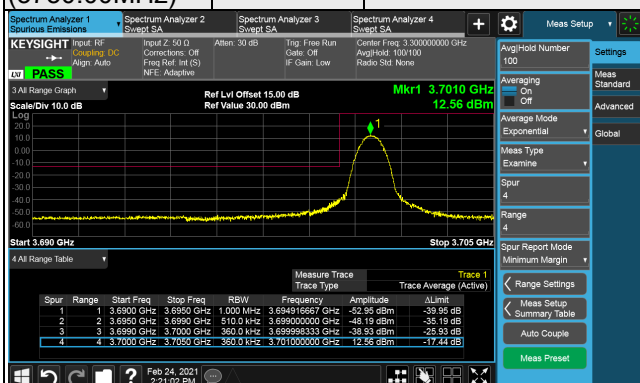
QPSK

1 RB / 0 RB Offset

Channel 662000  
(3930.00MHz)

QPSK

1 RB / 272 RB Offset



Channel 650000  
(3750.00MHz)

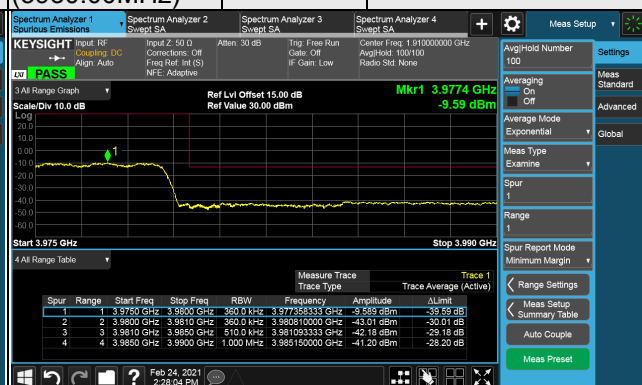
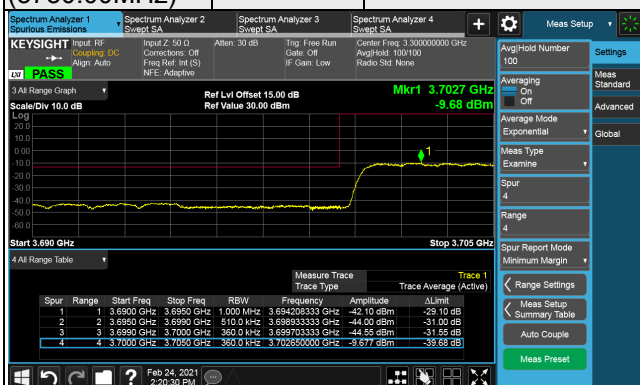
QPSK

273 RB / 0 RB Offset

Channel 662000  
(3930.00MHz)

QPSK

273 RB / 0 RB Offset

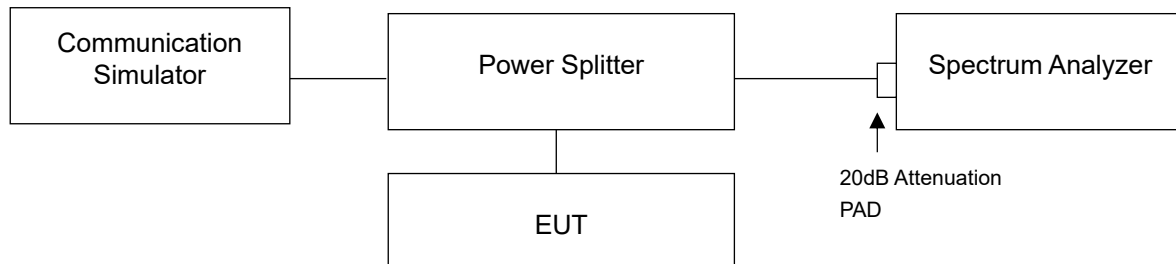


## 4.6 Peak to Average Ratio

### 4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

### 4.6.2 Test Setup



### 4.6.3 Test Procedures

- Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
- Set the number of counts to a value that stabilizes the measured CCDF curve;
- Record the maximum PAPR level associated with a probability of 0.1%.

#### 4.6.4 Test Results

n77

n77, Channel Bandwidth 20MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
647334	3710.01	4.01	6.45	6.46	6.84	8.49
656000	3840.00	4.50	8.08	8.24	8.23	8.58
664666	3969.99	4.39	7.81	7.72	8.19	8.72
n77, Channel Bandwidth 30MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
647668	3715.02	4.01	6.36	6.49	6.93	8.21
656000	3840.00	3.83	6.43	6.56	7.01	8.27
664332	3964.98	4.30	6.42	6.66	7.09	8.25
n77, Channel Bandwidth 40MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
648000	3720.00	4.03	6.60	6.59	7.01	8.68
656000	3840.00	4.39	8.11	8.15	8.16	8.57
664000	3960.00	4.28	7.83	7.81	8.29	8.52
n77, Channel Bandwidth 50MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
648334	3725.01	4.10	6.57	6.54	7.06	8.83
656000	3840.00	4.07	6.55	6.56	7.01	8.56
663666	3954.99	4.36	6.56	6.54	7.10	8.52
n77, Channel Bandwidth 60MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
648668	3730.02	4.23	7.06	7.06	7.44	8.63
656000	3840.00	4.39	6.85	6.89	7.36	8.70
663332	3949.98	4.46	8.27	7.93	7.19	8.72

n77, Channel Bandwidth 70MHz

Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
649000	3735.00	4.37	6.53	6.64	7.05	8.12
656000	3840.00	4.00	6.74	6.87	7.30	8.35
663000	3945.00	4.06	6.61	6.69	7.14	8.48

n77, Channel Bandwidth 80MHz

Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
649334	3740.01	4.59	7.32	7.28	7.77	8.60
656000	3840.00	5.15	7.02	6.98	7.54	8.64
662666	3939.99	5.16	8.39	8.33	8.53	8.59

n77, Channel Bandwidth 90MHz

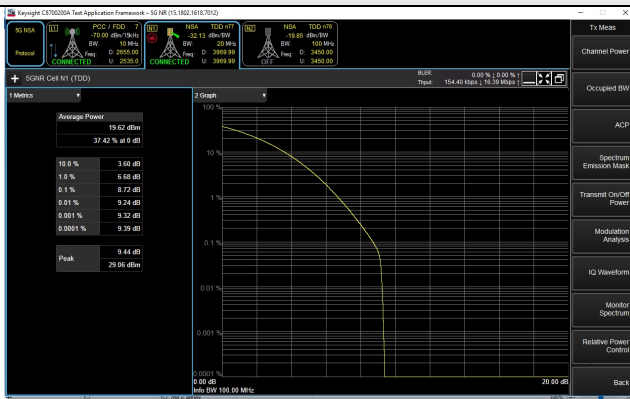
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
649558	3745.02	4.28	6.61	6.62	7.03	8.58
656000	3840.00	4.20	6.66	6.67	7.02	8.51
662332	3934.98	4.45	6.51	6.50	6.84	8.45

n77, Channel Bandwidth 100MHz

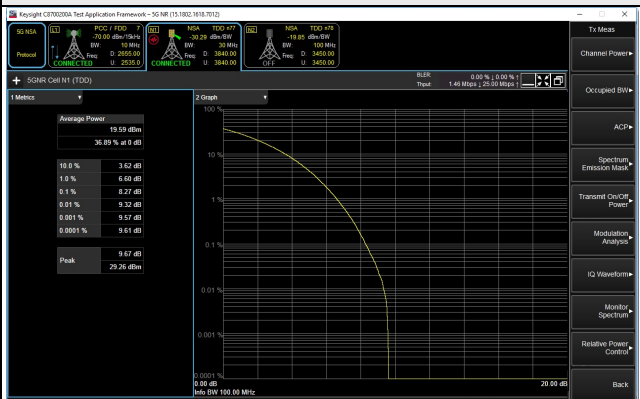
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
650000	3750.00	5.08	7.65	7.61	8.06	8.57
656000	3840.00	5.13	7.08	7.00	7.52	8.56
662000	3930.00	5.15	8.25	8.27	8.48	8.62

## Spectrum Plot of Worst Value

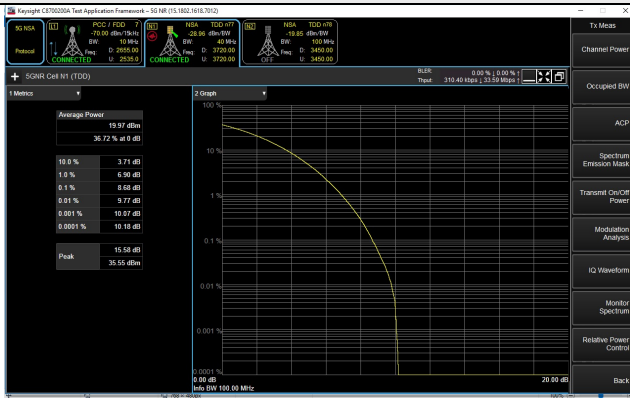
### 20MHz / 256QAM



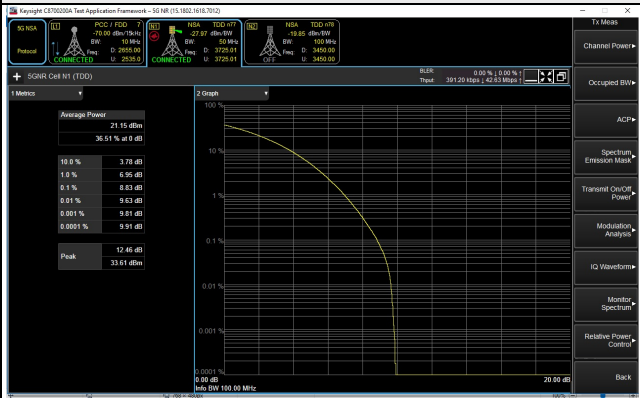
### 30MHz / 256QAM



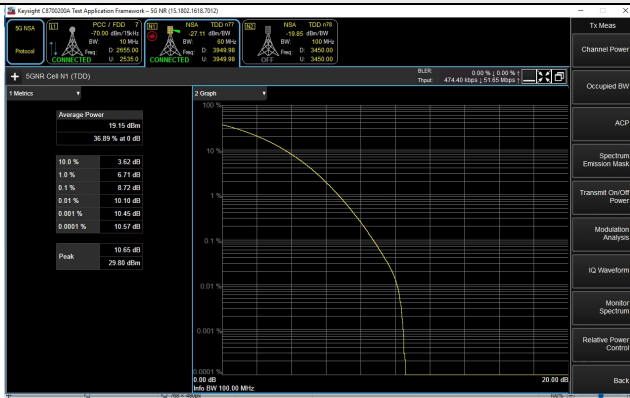
### 40MHz / 256QAM



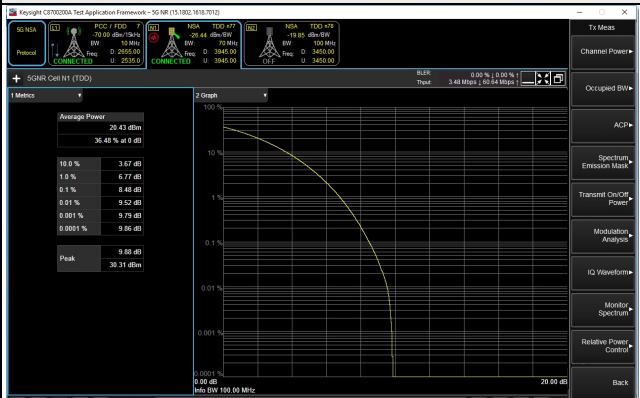
### 50MHz / 256QAM



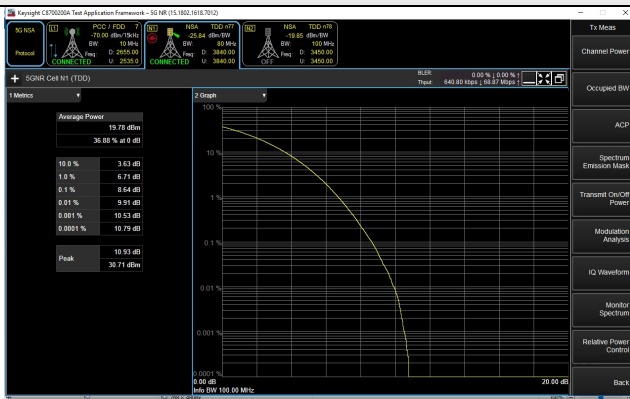
### 60MHz / 256QAM



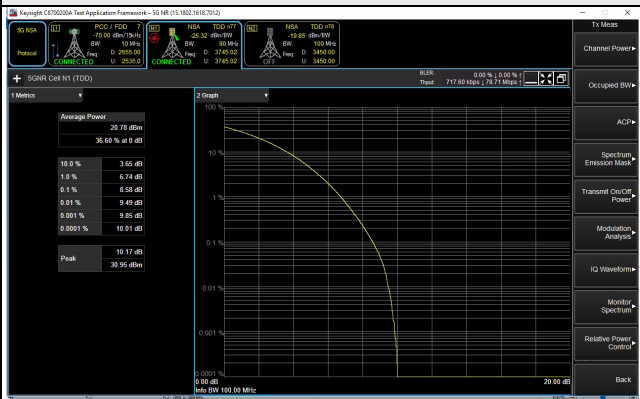
### 70MHz / 256QAM



### 80MHz / 256QAM

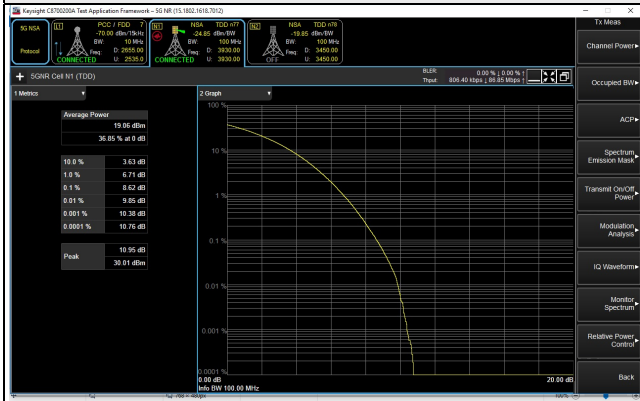


### 90MHz / 256QAM





# 100MHz / 256QAM

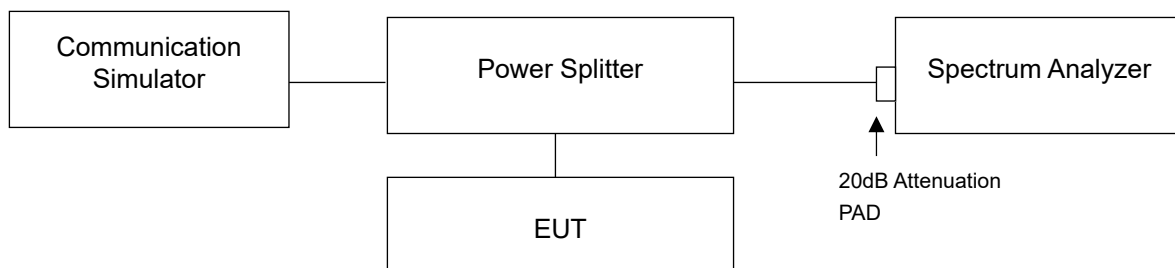


## 4.7 Conducted Spurious Emissions

### 4.7.1 Limits of Conducted Spurious Emissions Measurement

According to FCC 27.53(l) for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed  $-13$  dBm/MHz. Compliance with this paragraph (l)(2) 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, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 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.

### 4.7.2 Test Setup



### 4.7.3 Test Procedure

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9kHz to 10GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

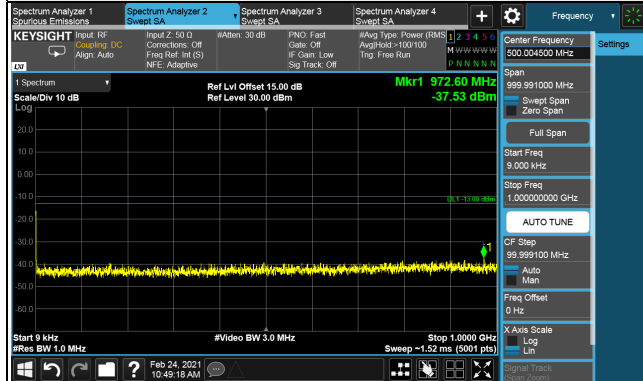
### 4.7.4 Test Results

n77

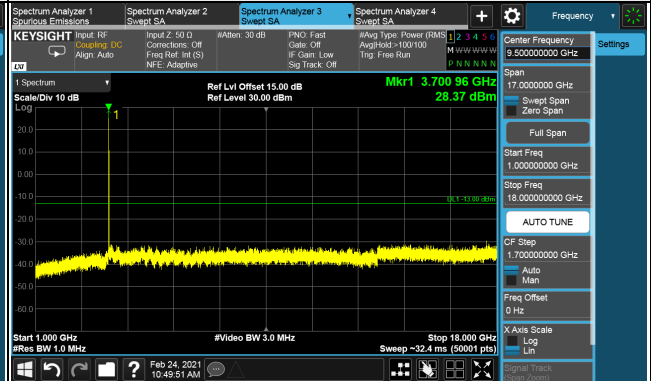
n77, Channel Bandwidth 20MHz

Channel 647334 (3710.01MHz)

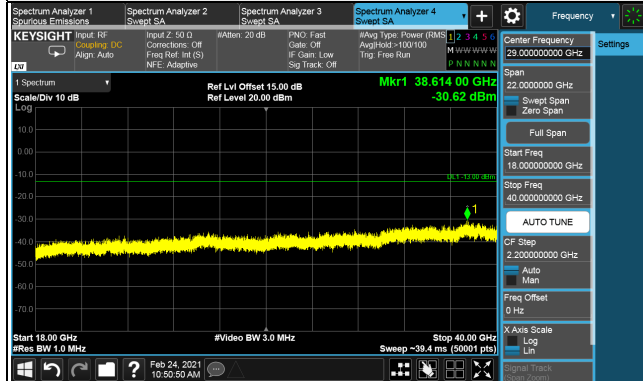
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz

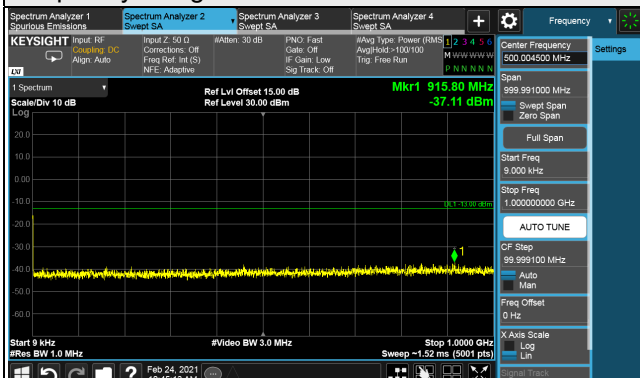


\*The 9kHz signal over the limit is from Spectrum.

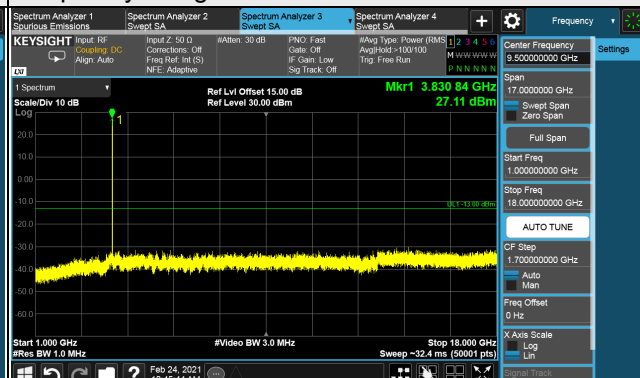
n77, Channel Bandwidth 20MHz

Channel 656000 (3840.00MHz)

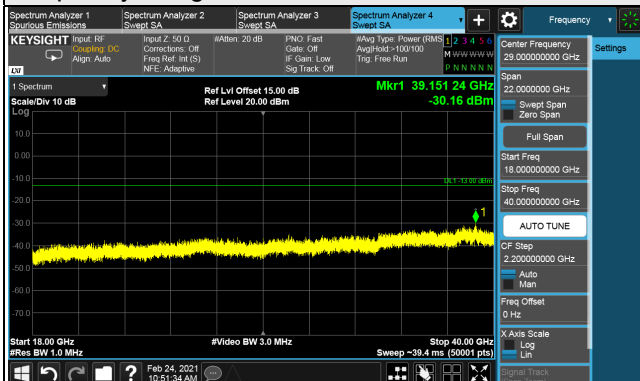
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz

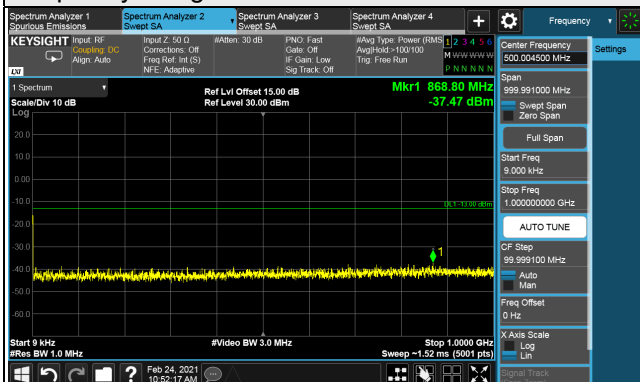


\*The 9kHz signal over the limit is from Spectrum.

n77, Channel Bandwidth 20MHz

Channel 664666 (3969.99MHz)

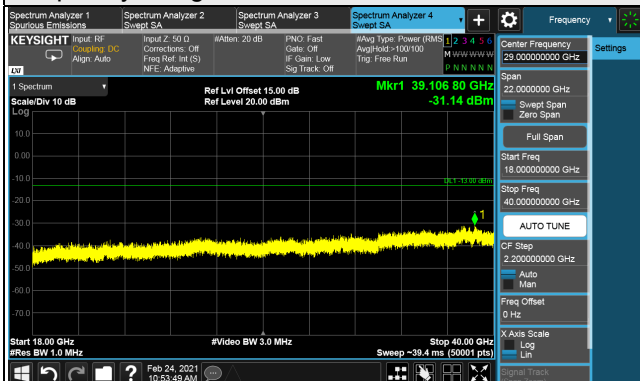
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz

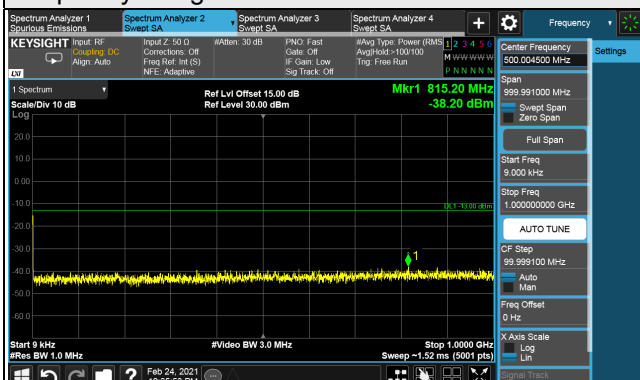


\*The 9kHz signal over the limit is from Spectrum.

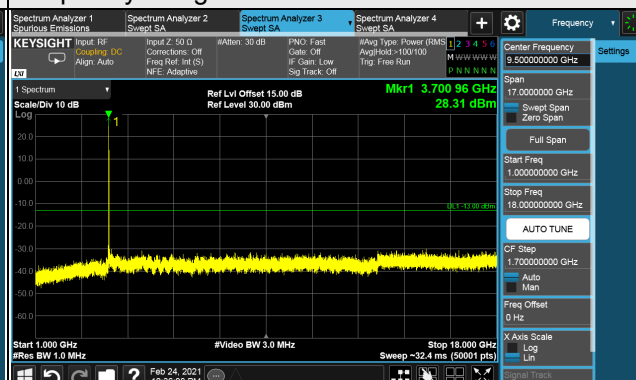
n77, Channel Bandwidth 30MHz

Channel 647668 (3715.02MHz)

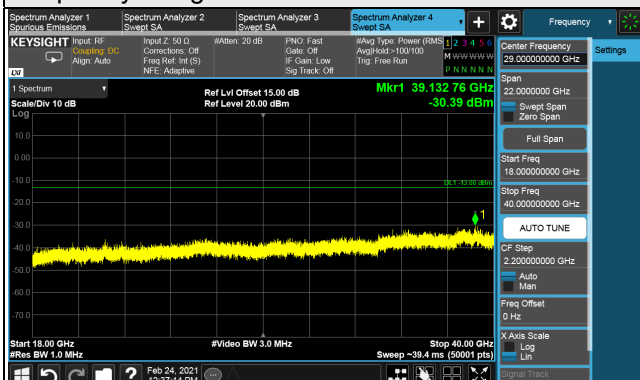
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz

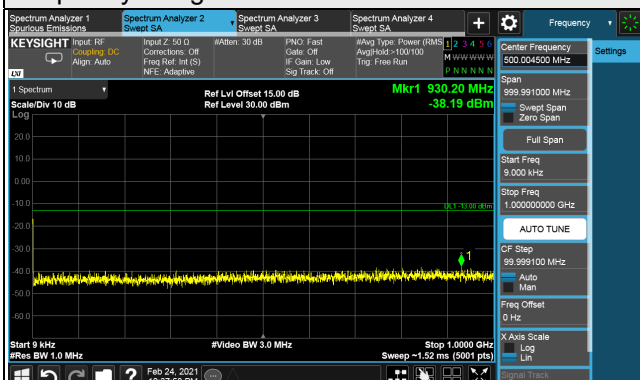


\*The 9kHz signal over the limit is from Spectrum.

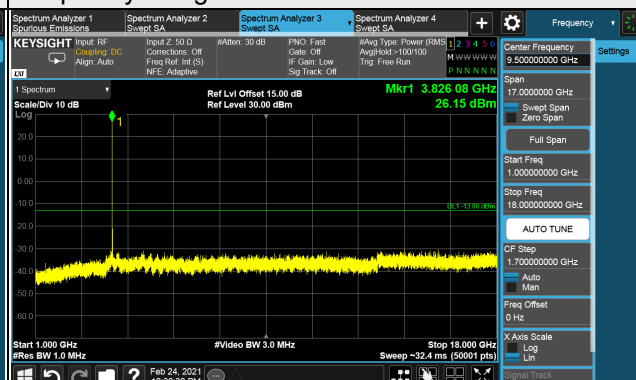
n77, Channel Bandwidth 30MHz

Channel 656000 (3840.00MHz)

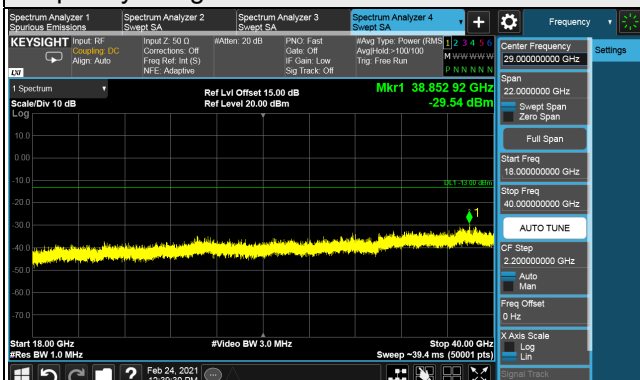
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz

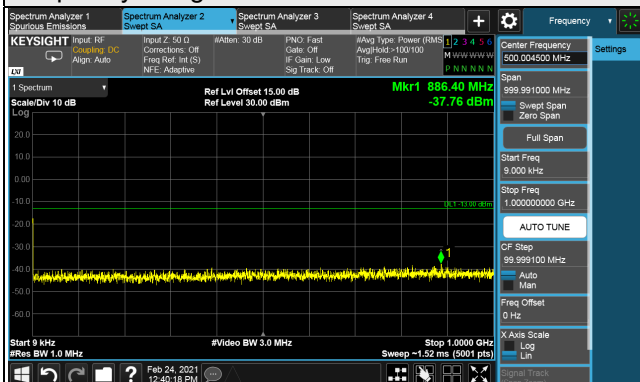


\*The 9kHz signal over the limit is from Spectrum.

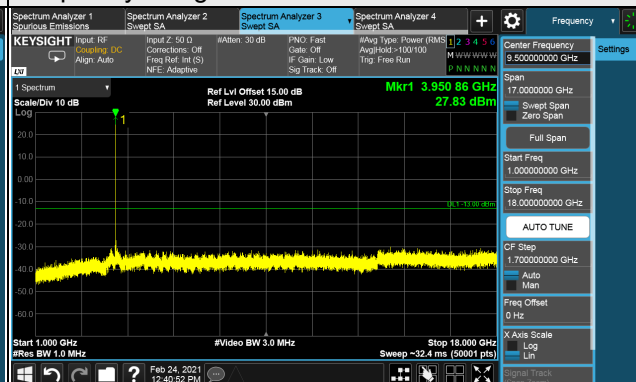
n77, Channel Bandwidth 30MHz

Channel 664332 (3964.98MHz)

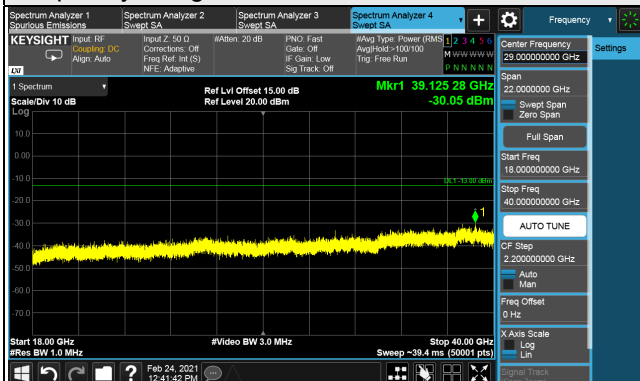
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz



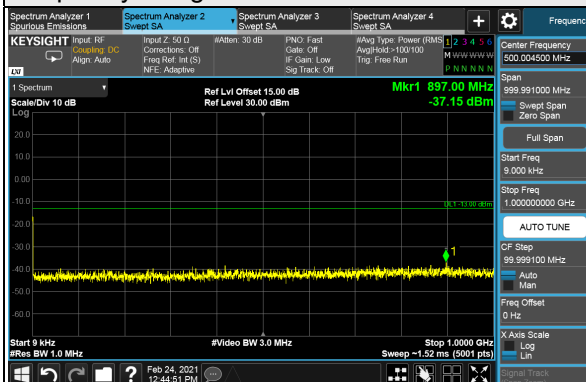
\*The 9kHz signal over the limit is from Spectrum.



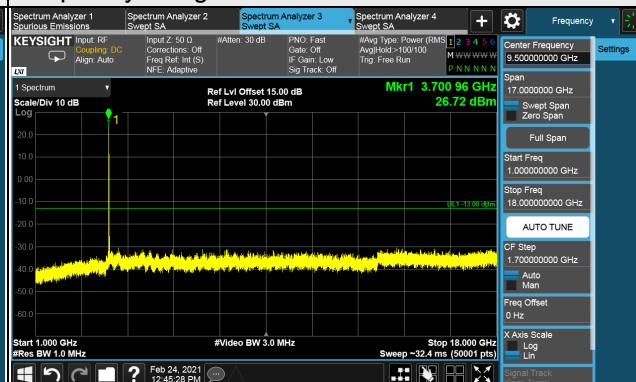
n77, Channel Bandwidth 40MHz

Channel 648000 (3720.00MHz)

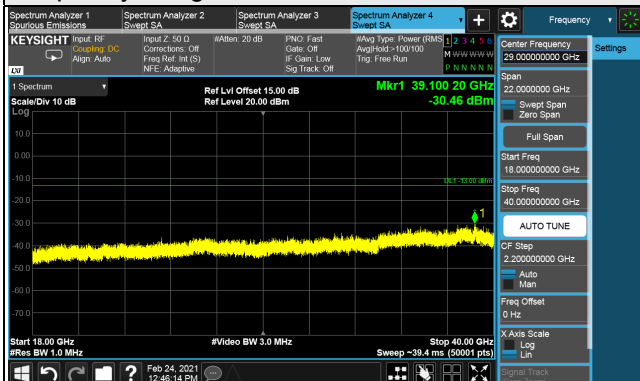
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz

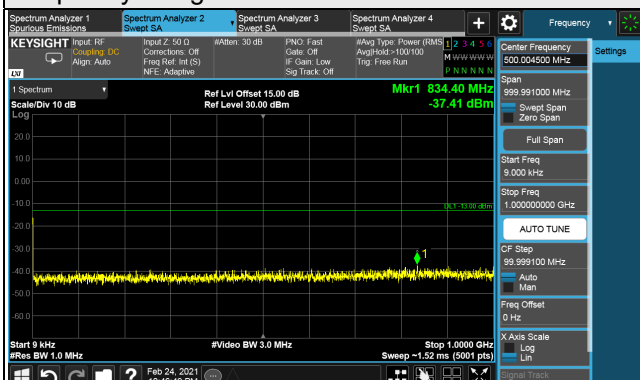


\*The 9kHz signal over the limit is from Spectrum.

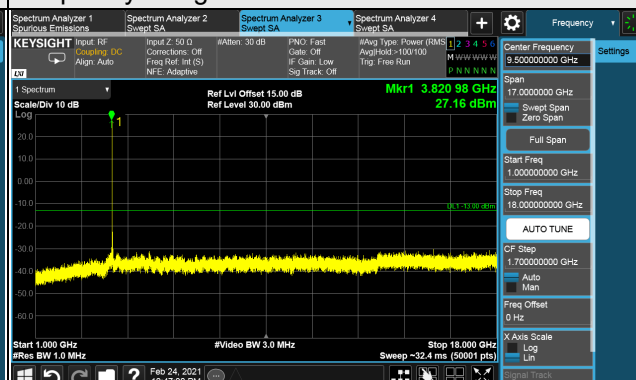
n77, Channel Bandwidth 40MHz

Channel 656000 (3840.00MHz)

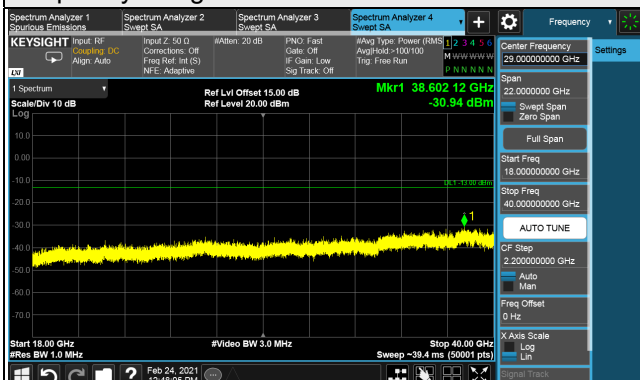
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz

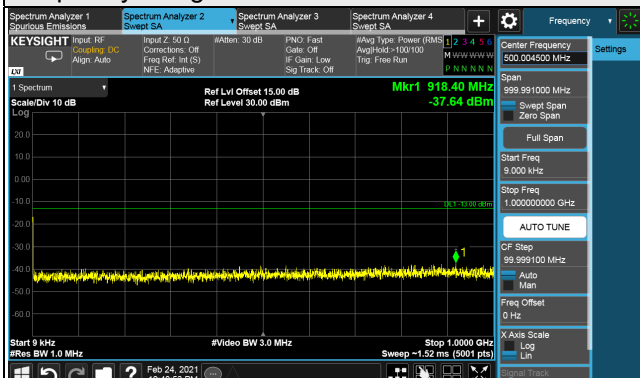


\*The 9kHz signal over the limit is from Spectrum.

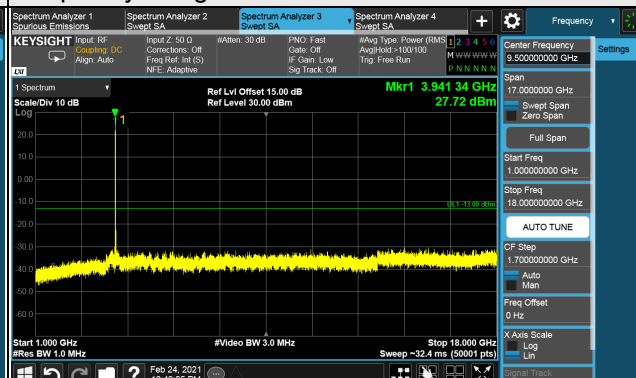
n77, Channel Bandwidth 40MHz

Channel 664000 (3960.00MHz)

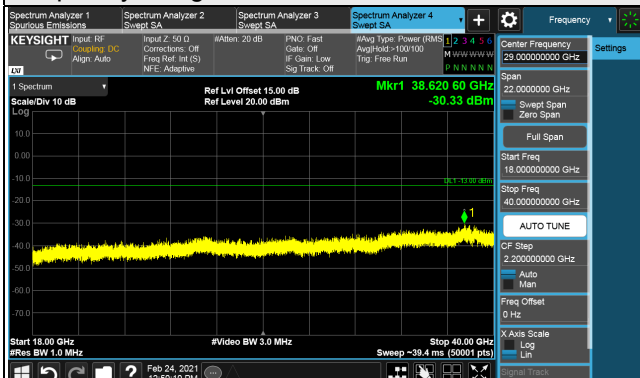
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz

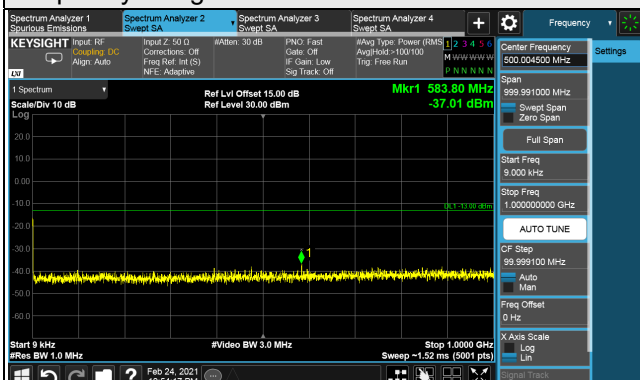


\*The 9kHz signal over the limit is from Spectrum.

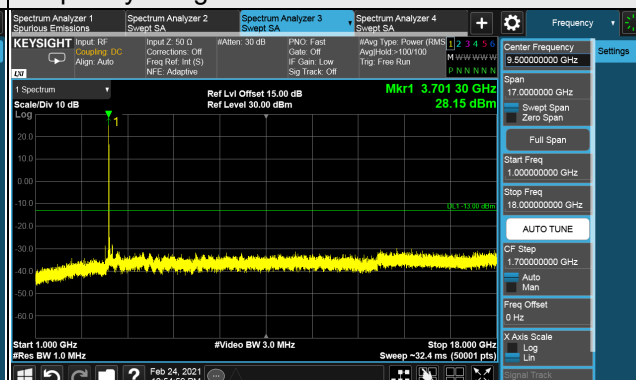
n77, Channel Bandwidth 50MHz

Channel 648334 (3725.01MHz)

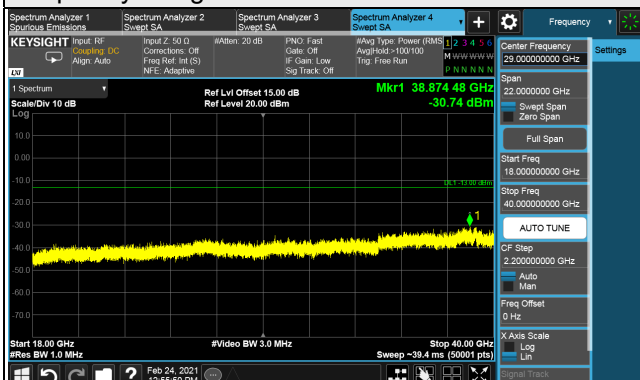
Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



Frequency Range : 18GHz ~ 40GHz



\*The 9kHz signal over the limit is from Spectrum.