

# Appendix -

## Test Data and Result for report

### GZCR260400082402 (B)

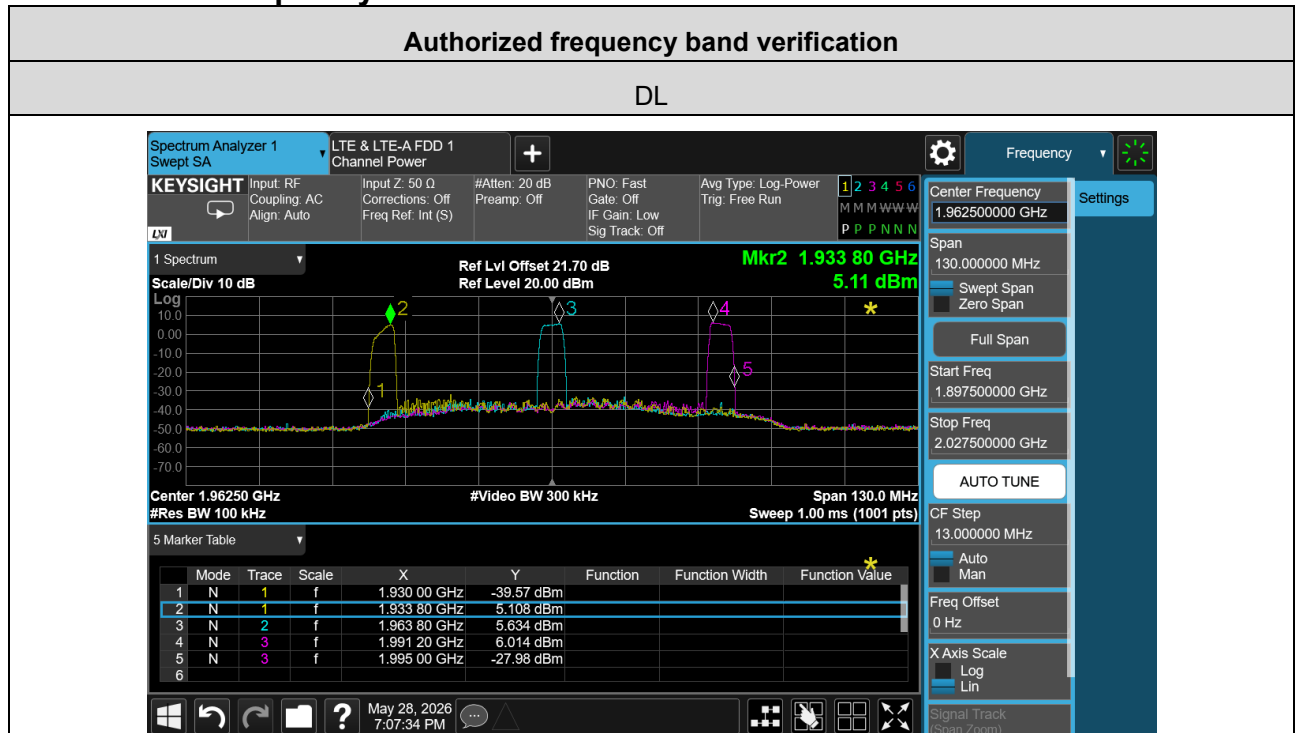
(For Broadband PCS)



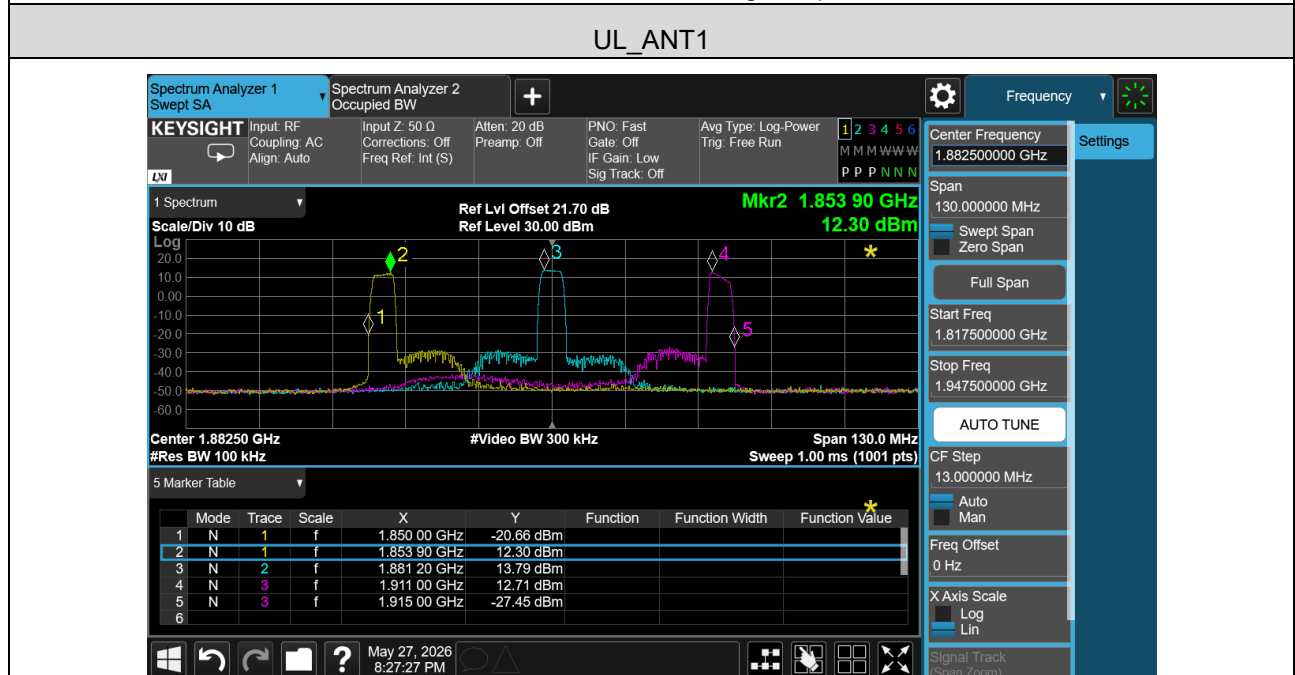
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### 1 Authorized frequency band verification



$f_0=1933.8\text{MHz}$ ,  $1963.8\text{MHz}$ ,  $1991.2\text{MHz}$  for lowest, middle, highest passband

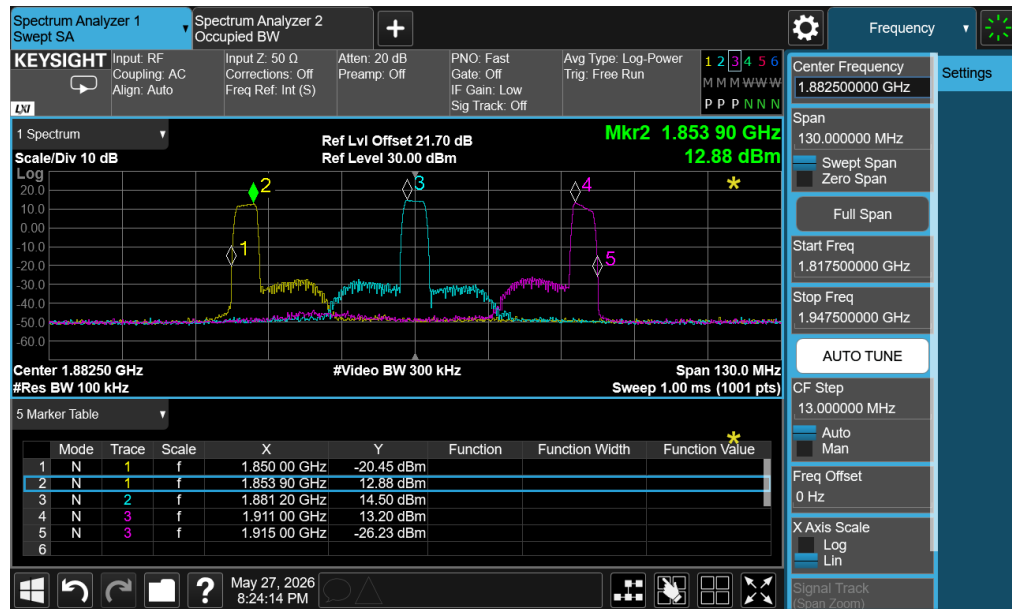


$f_0=1853.9\text{MHz}$ ,  $1881.2\text{MHz}$ ,  $1911.0\text{MHz}$  for lowest, middle, highest passband



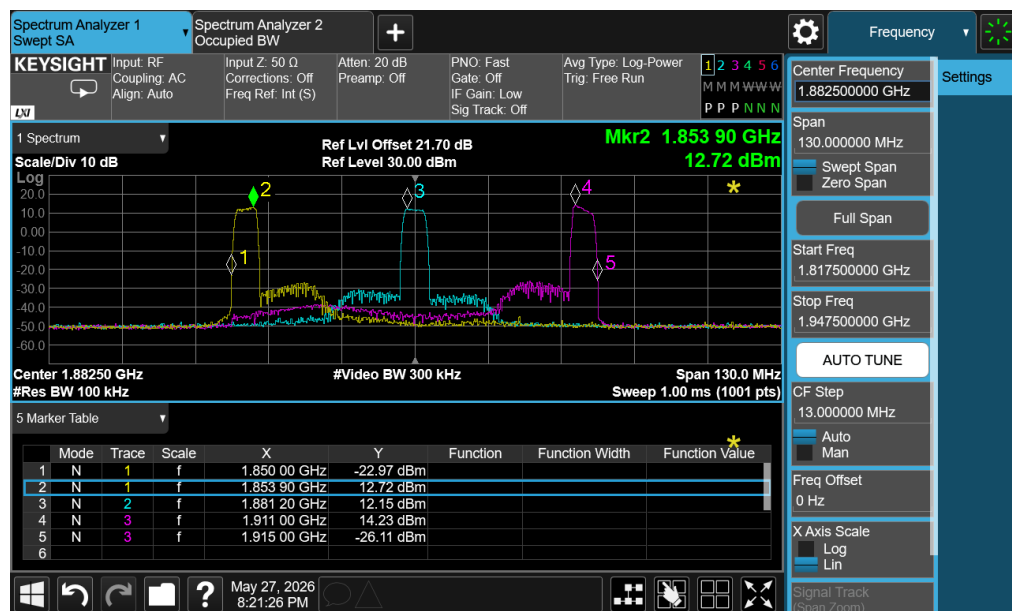
### Authorized frequency band verification

#### UL\_ANT2



$f_0=1853.9\text{MHz}$ ,  $1881.2\text{MHz}$ ,  $1911.0\text{MHz}$  for lowest, middle, highest passband

#### UL\_ANT3

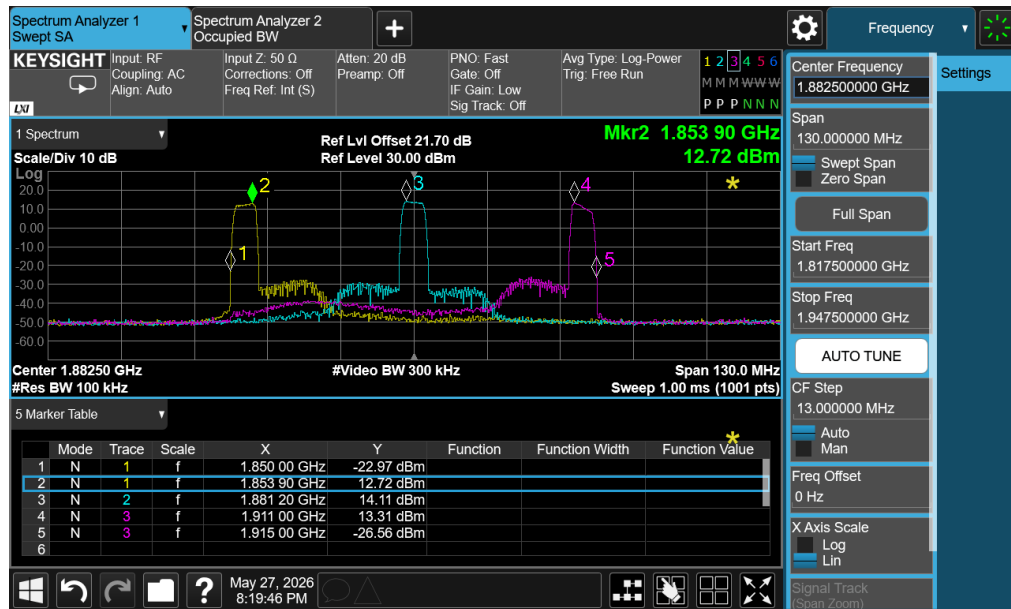


$f_0=1853.9\text{MHz}$ ,  $1881.2\text{MHz}$ ,  $1911.0\text{MHz}$  for lowest, middle, highest passband



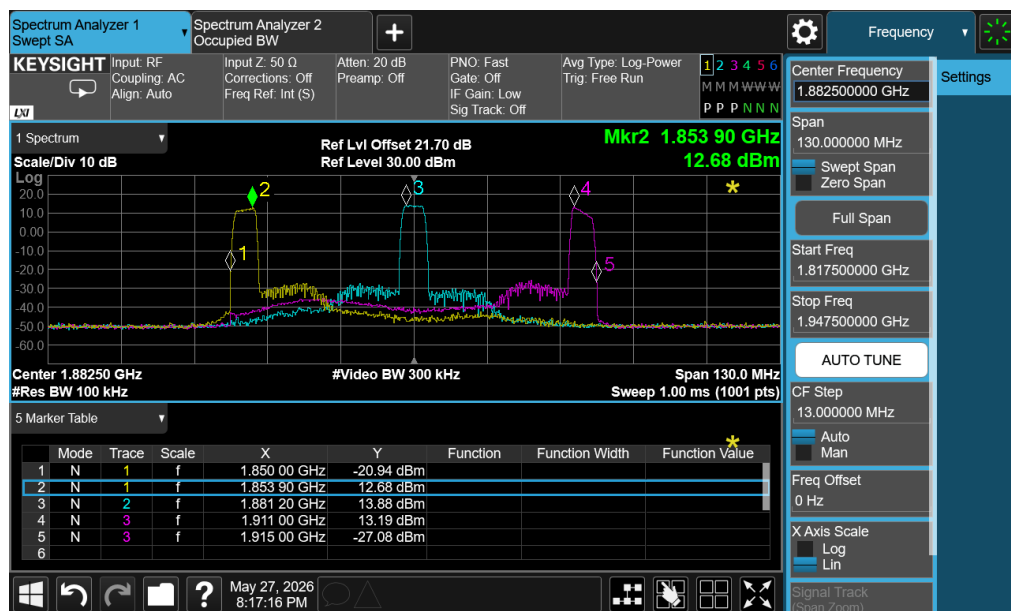
### Authorized frequency band verification

#### UL\_ANT4



$f_0=1853.9\text{MHz}$ ,  $1881.2\text{MHz}$ ,  $1911.0\text{MHz}$  for lowest, middle, highest passband

#### UL\_ANT5



$f_0=1853.9\text{MHz}$ ,  $1881.2\text{MHz}$ ,  $1911.0\text{MHz}$  for lowest, middle, highest passband



### Authorized frequency band verification

UL\_ANT6



$f_0=1853.9\text{MHz}$ ,  $1881.2\text{MHz}$ ,  $1911.0\text{MHz}$  for lowest, middle, highest passband



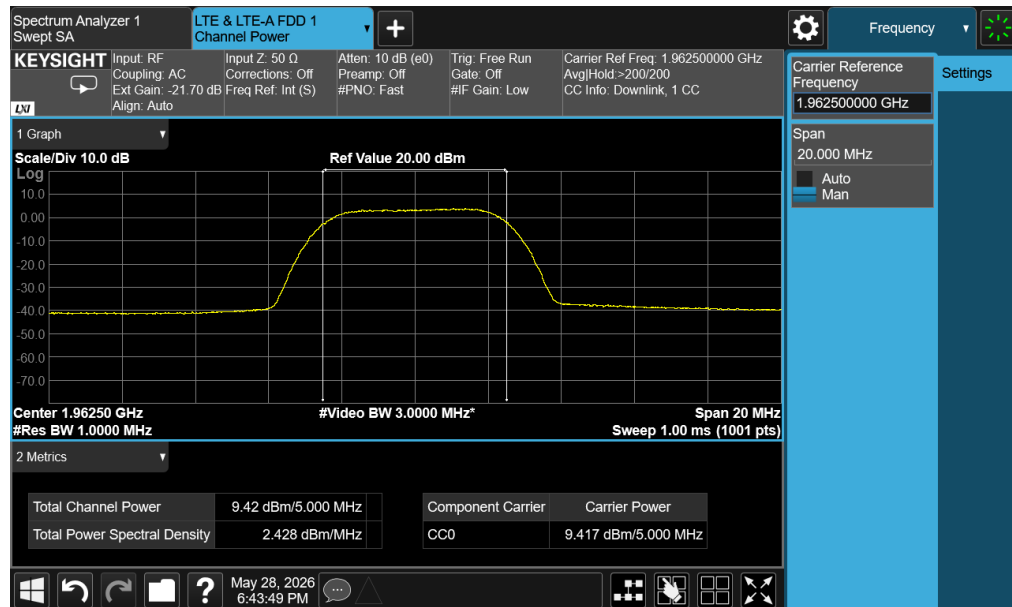
## 2 Authorized CMRS provider test

| Authorized CMRS provider test                                                                                                                                                                                                                                                                                                                                 |                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Authorized CMRS Provider ID                                                                                                                                                                                                                                                                                                                                   | Non-authorized CMRS Provider ID |
| MCC/MCN: 310410                                                                                                                                                                                                                                                                                                                                               | MCC/MCN: 310111                 |
|                                                                                                                                                                                                                                                                                                                                                               | MCC/MCN: 311222                 |
| <p>Remark:</p> <ol style="list-style-type: none"> <li>1. The EUT can be set authorized CMRS Provider IDs via local WEB. For authorized CMRS Provider test, the EUT was assigned a temporary authorized CMRS Provider ID.</li> <li>2. One authorized CMRS Provider signal and two non-authorized CMRS Provider signals were verified as this table.</li> </ol> |                                 |

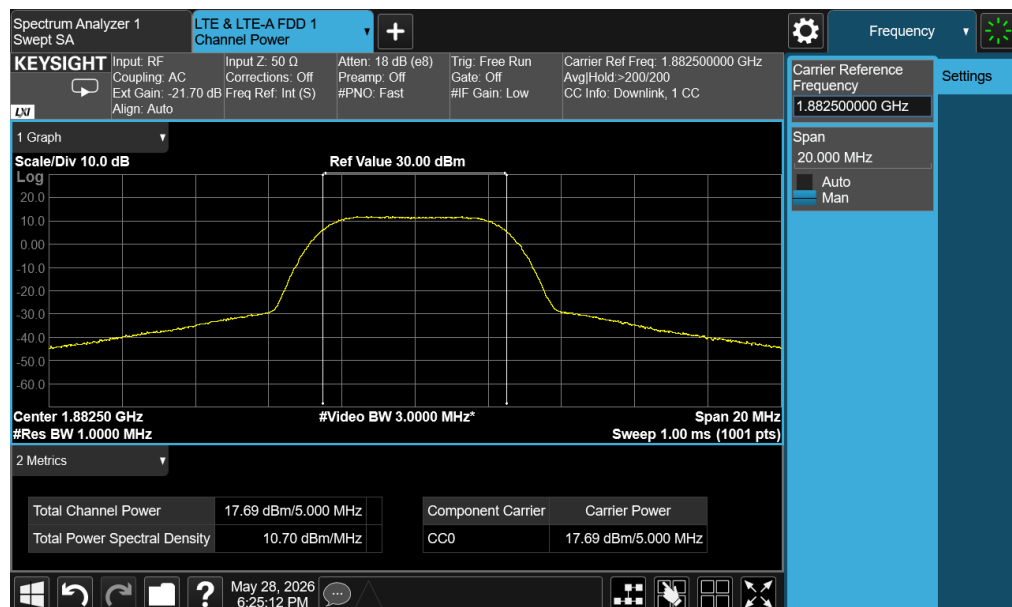


### Authorized CMRS Provider test

#### DL\_Authorized CMRS provider signal (MCC/MCN: 310410)

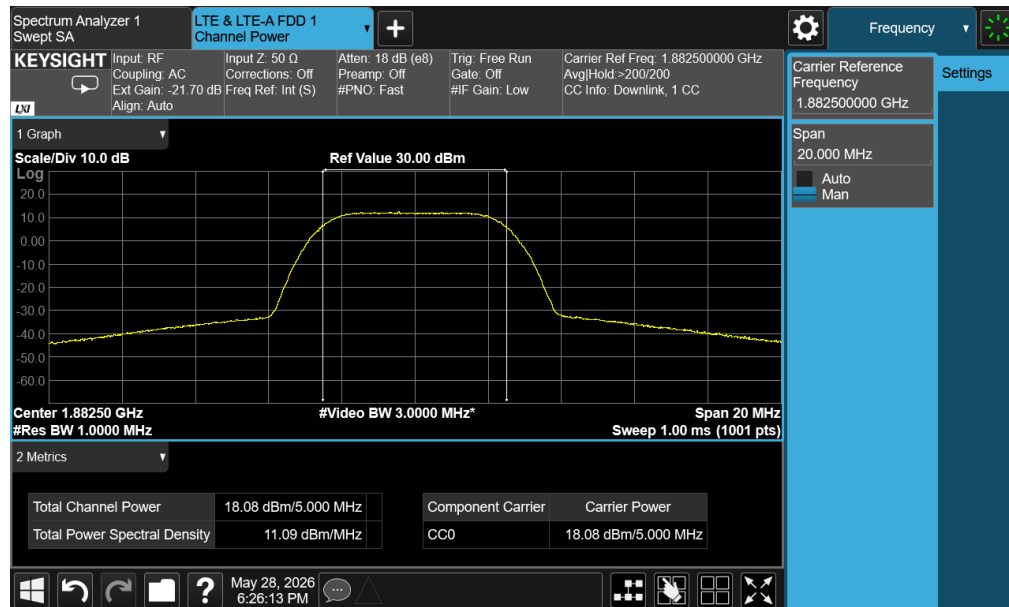


#### UL\_Authorized CMRS provider signal (MCC/MCN: 310410)\_ANT1

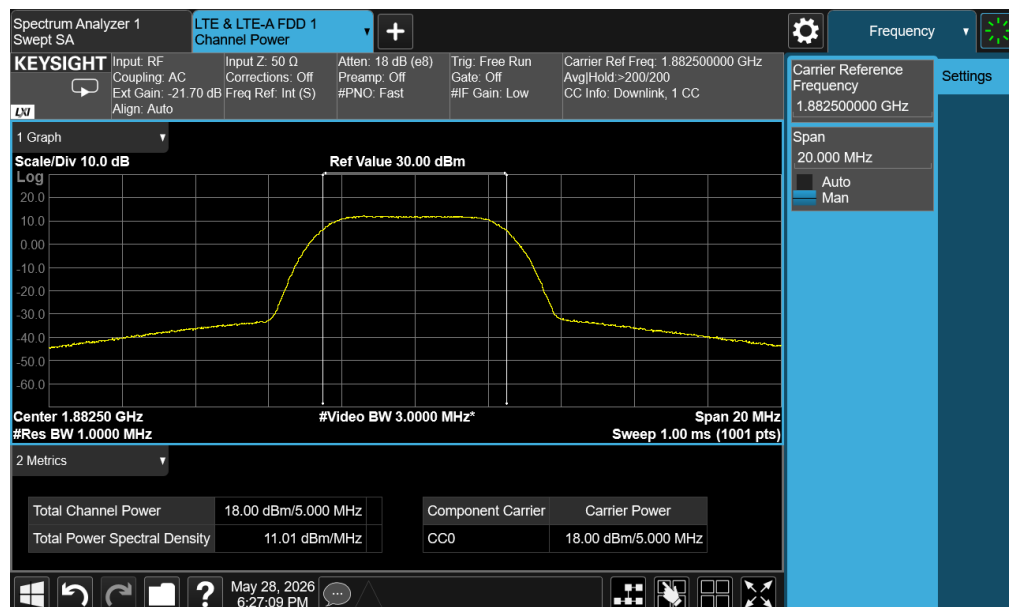


### Authorized CMRS Provider test

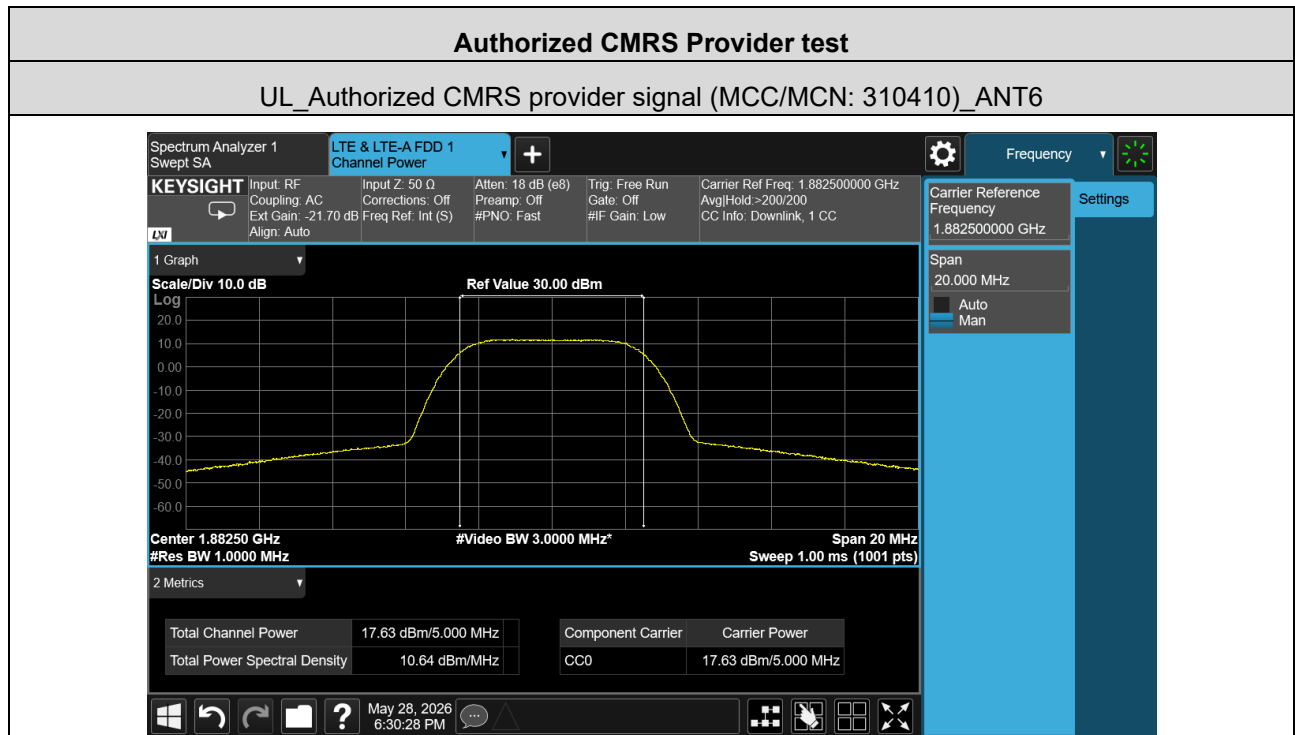
#### UL\_Authorized CMRS provider signal (MCC/MCN: 310410)\_ANT2



#### UL\_Authorized CMRS provider signal (MCC/MCN: 310410)\_ANT3

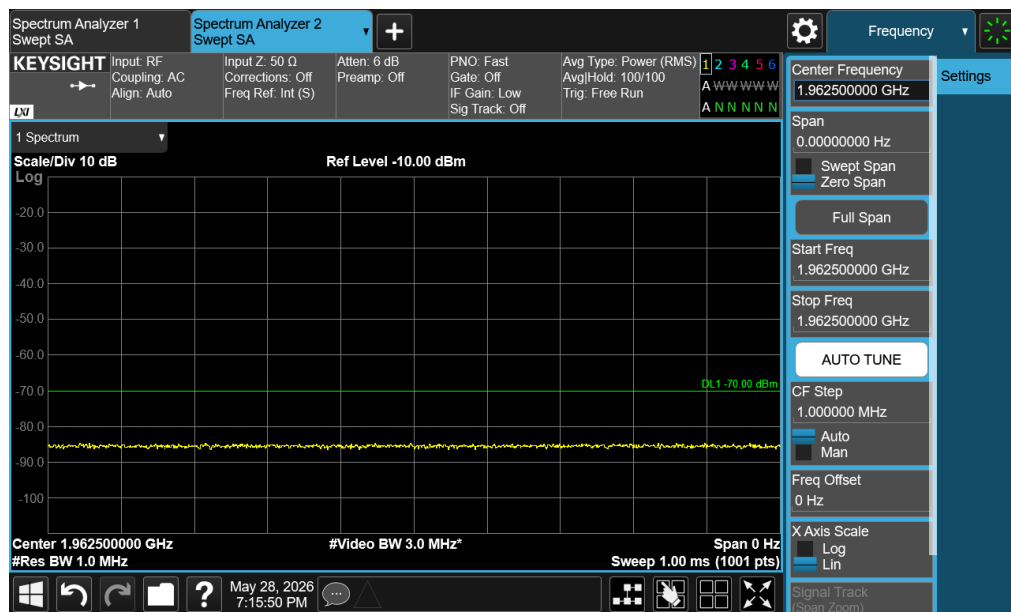
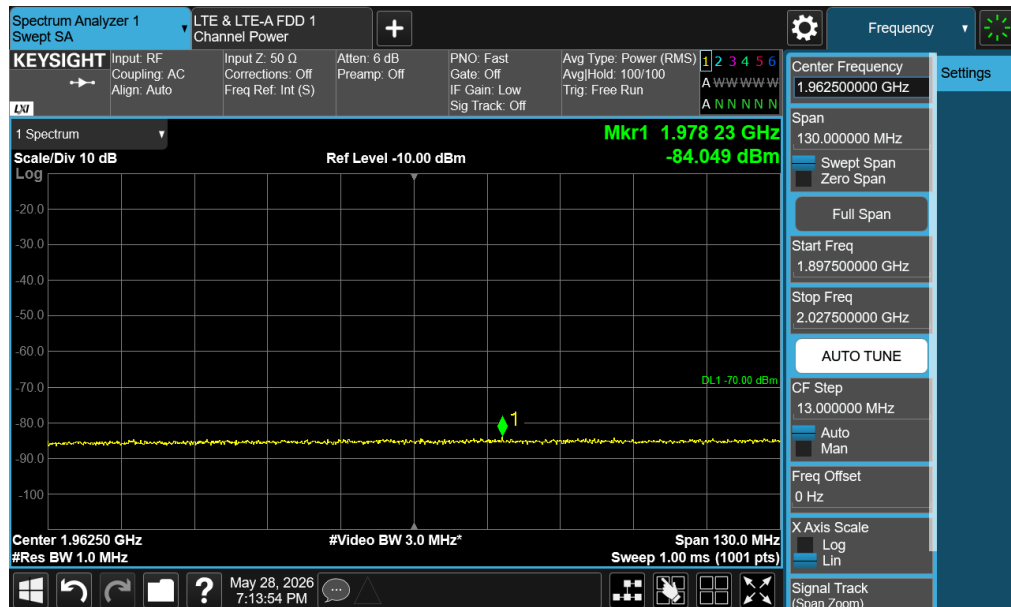






### Authorized CMRS Provider test

DL\_Non-authorized CMRS provider signal (MCC/MCN: 310111)



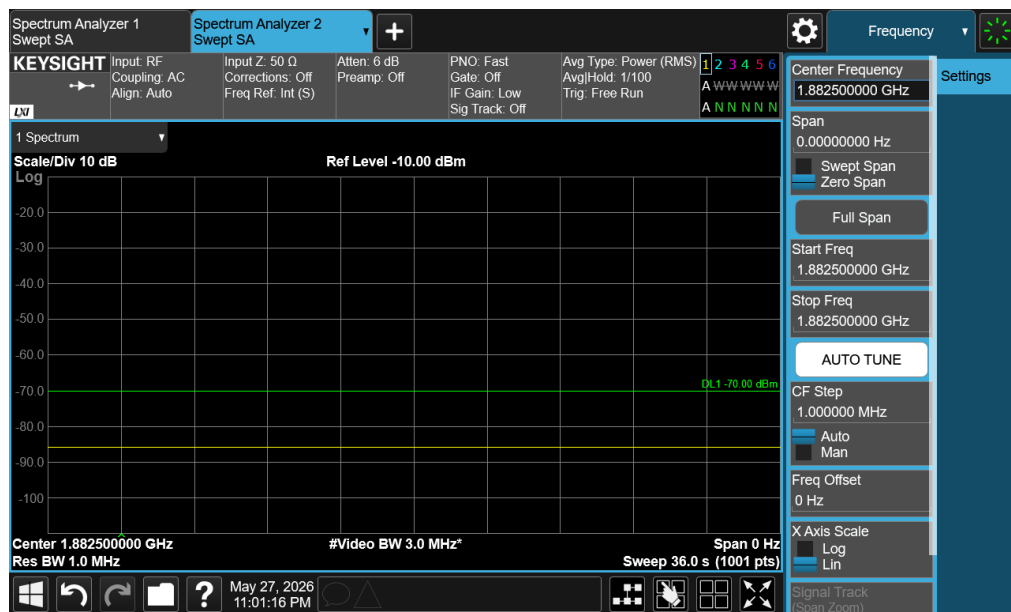
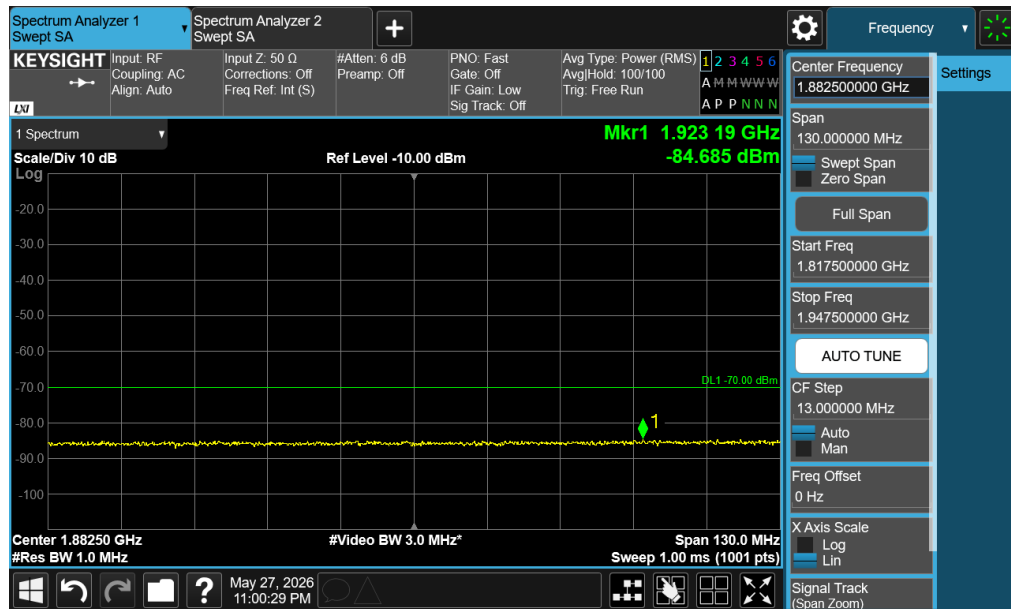
#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 310111)\_ANT1



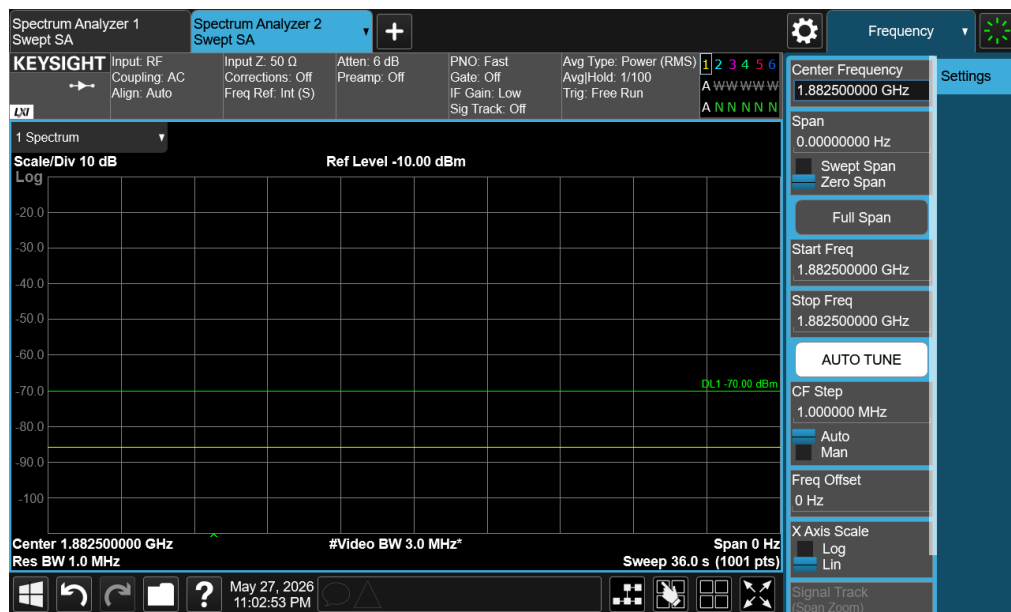
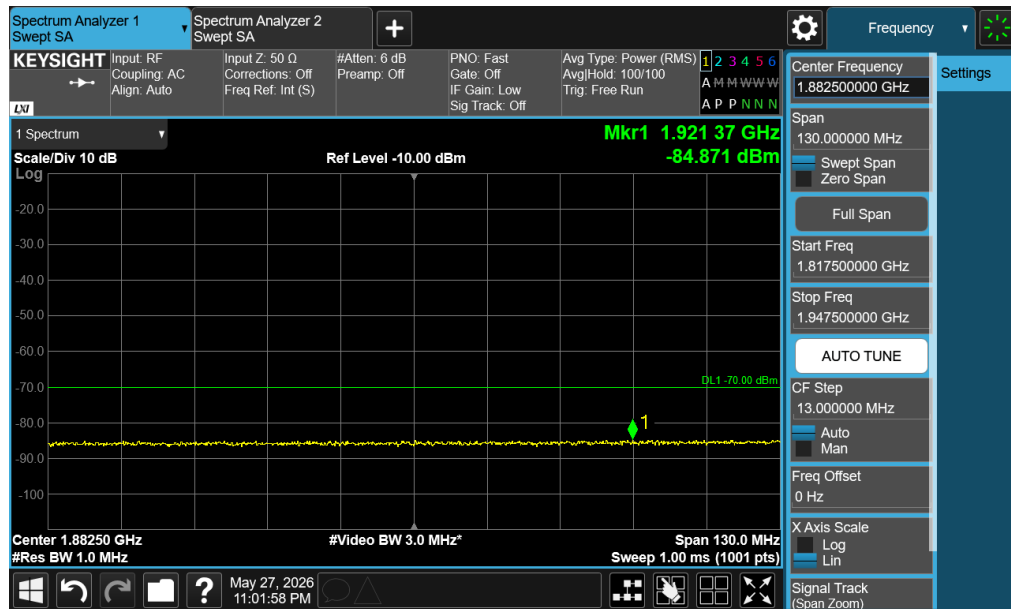
### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 310111)\_ANT2



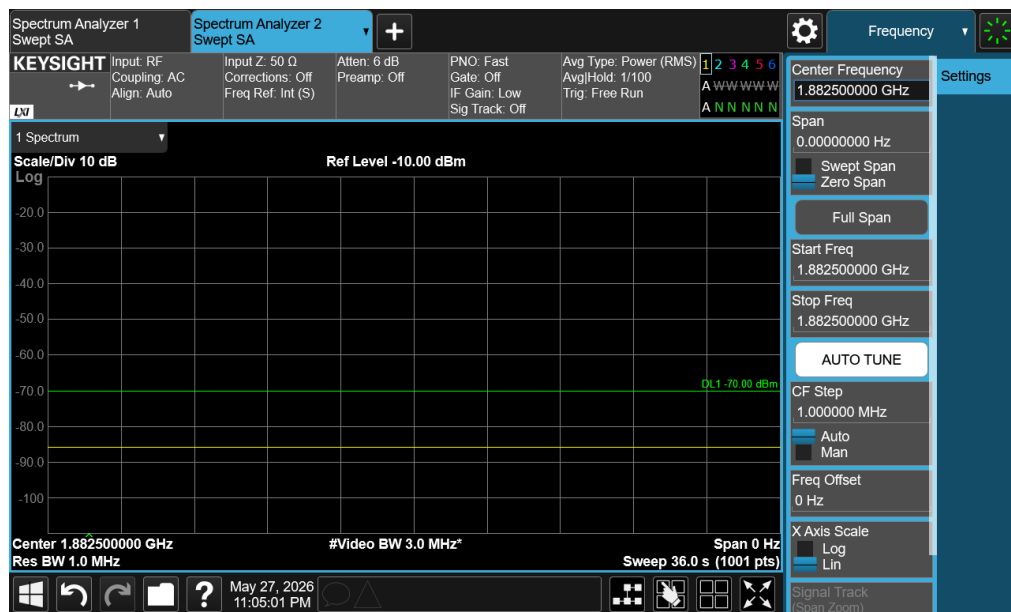
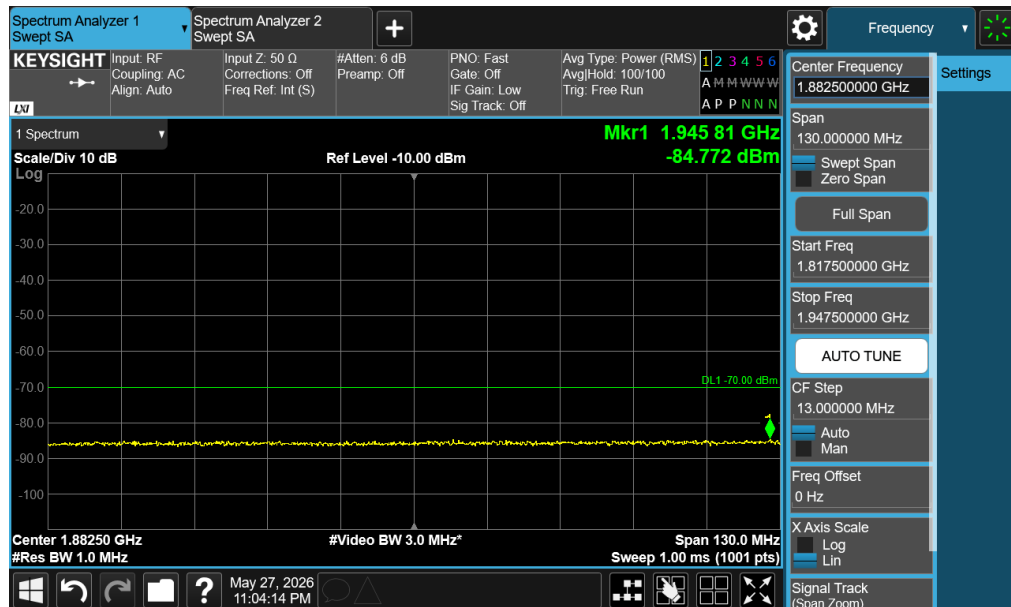
#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 310111)\_ANT3



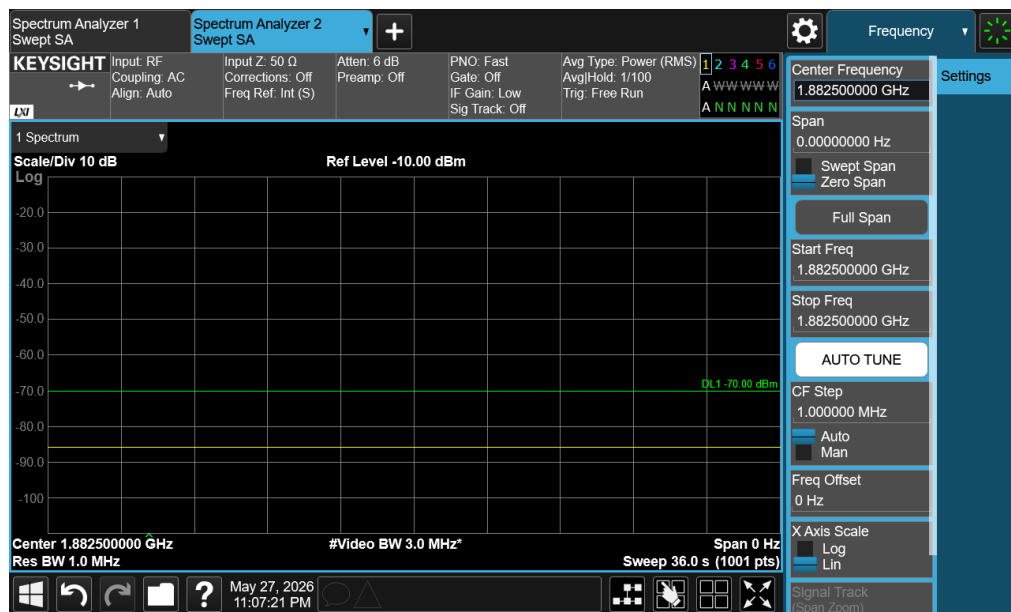
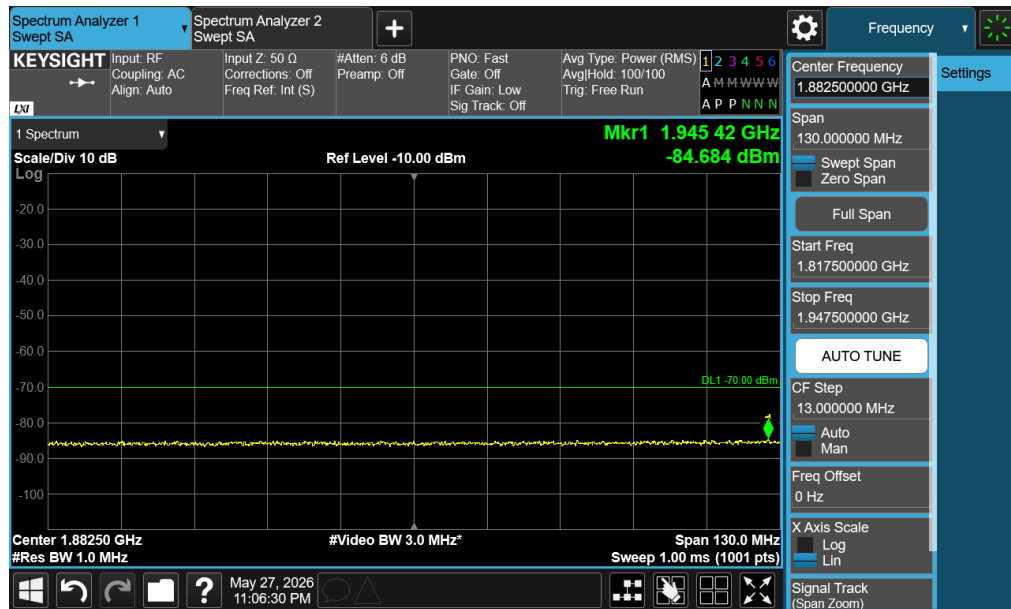
#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 310111)\_ANT4



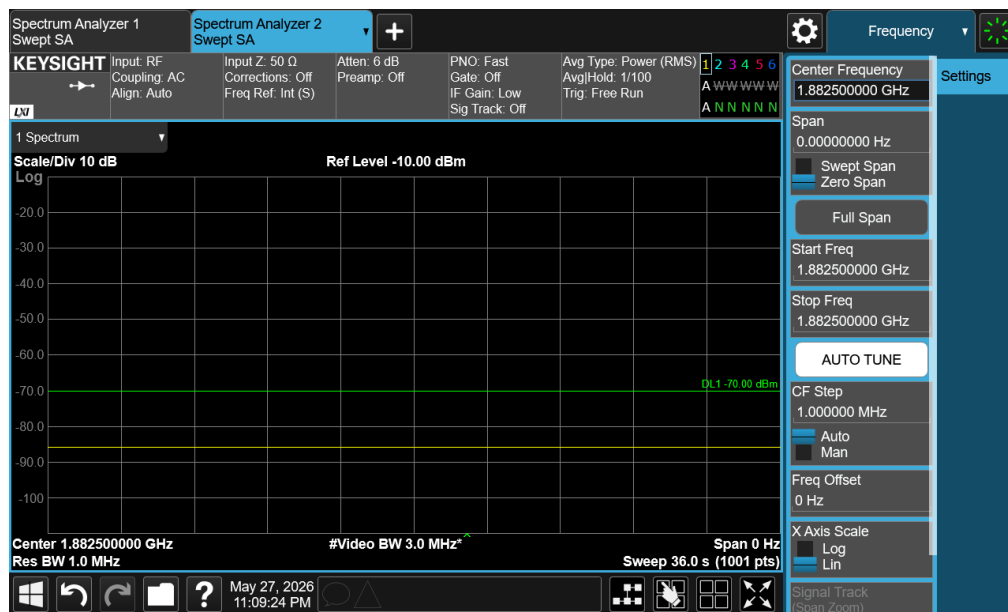
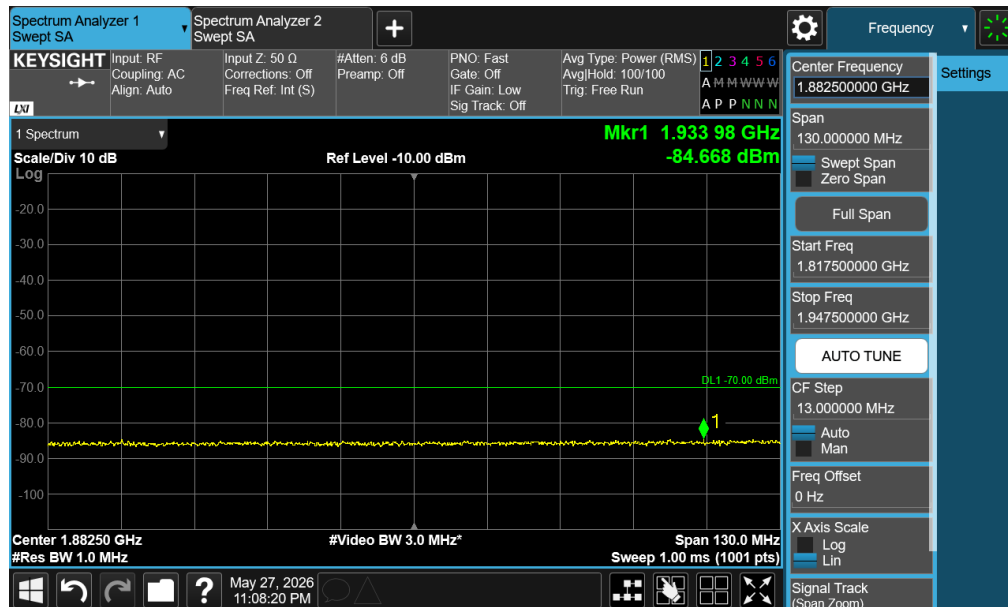
#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 310111)\_ANT5



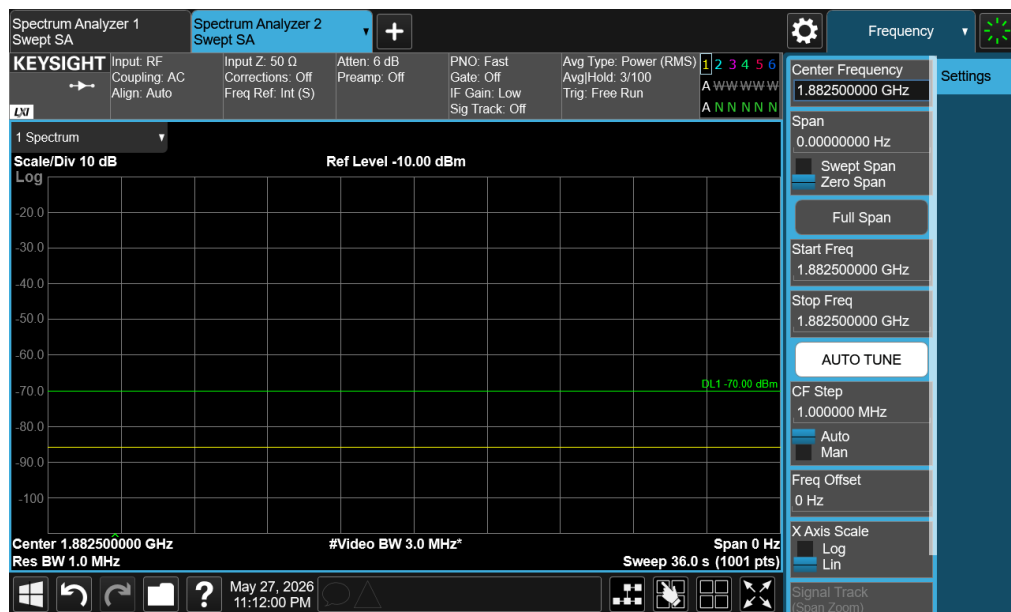
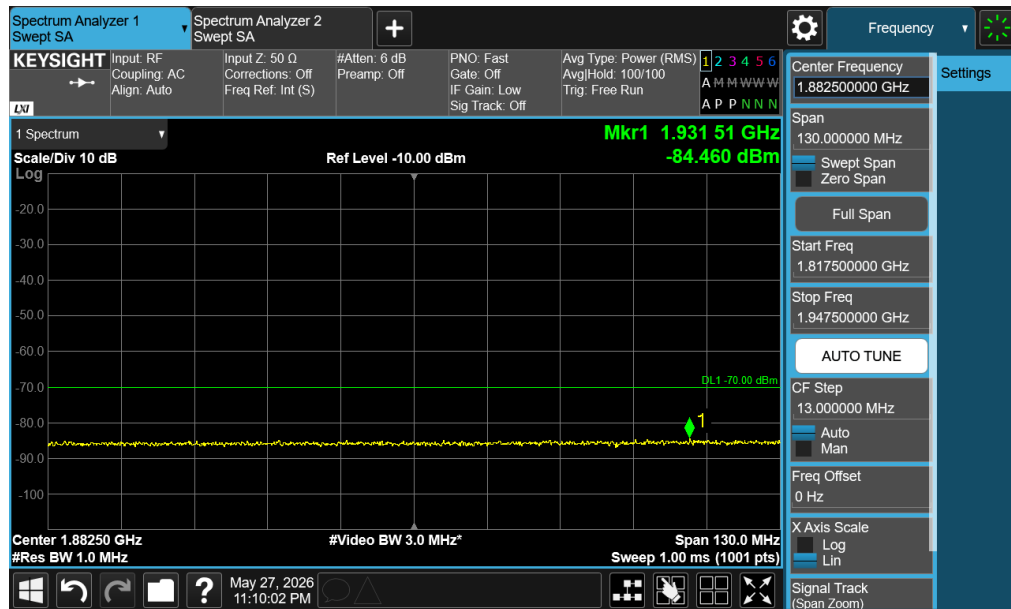
#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 310111)\_ANT6



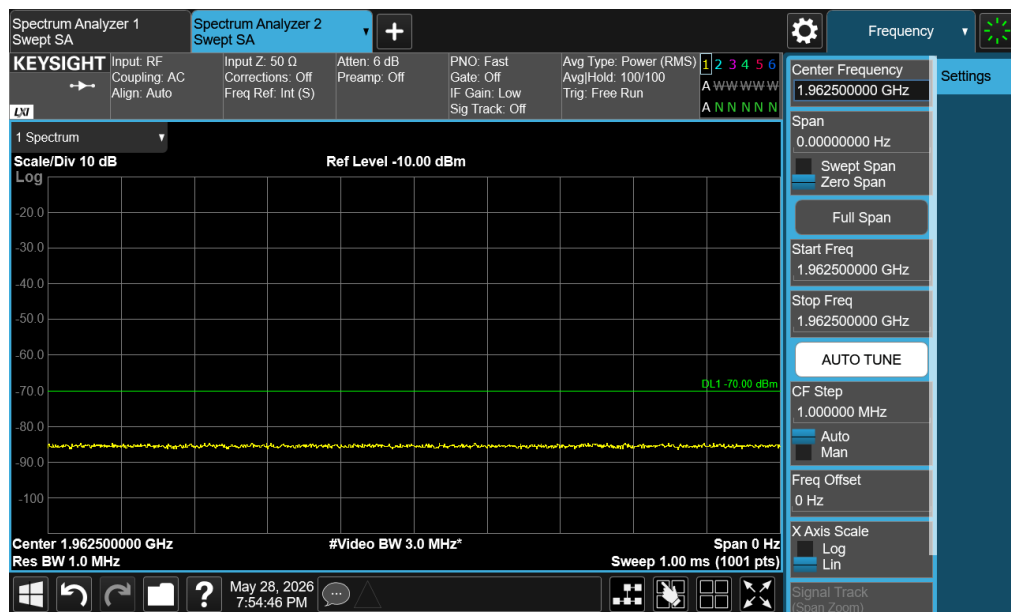
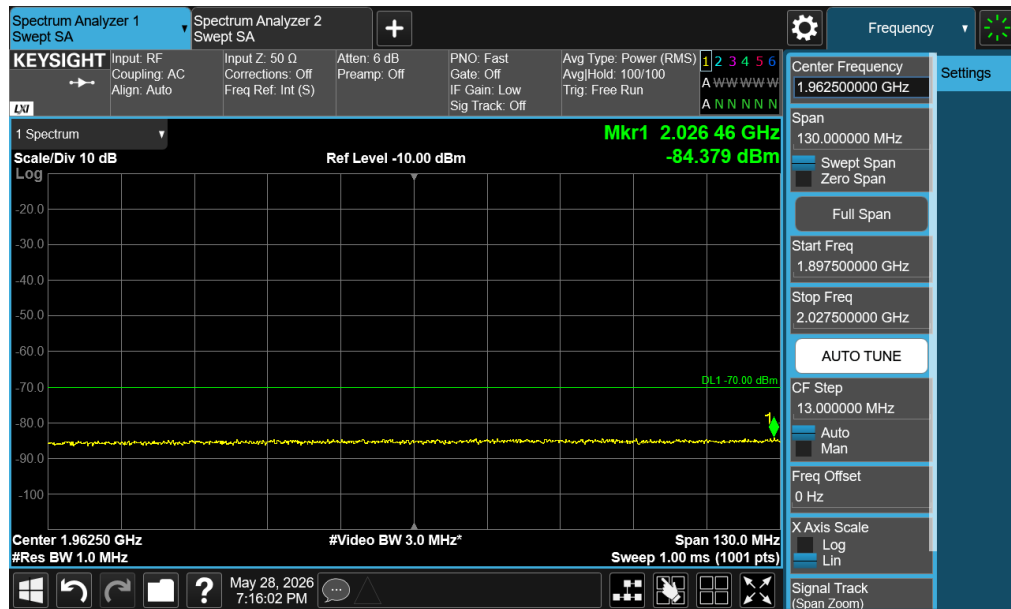
#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

DL\_Non-authorized CMRS provider signal (MCC/MCN: 311222)



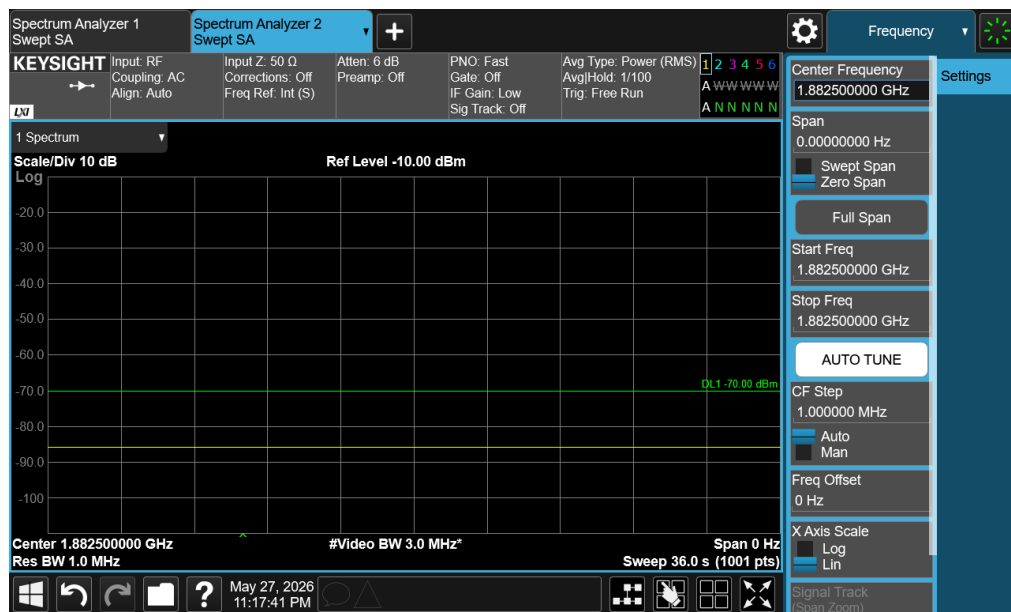
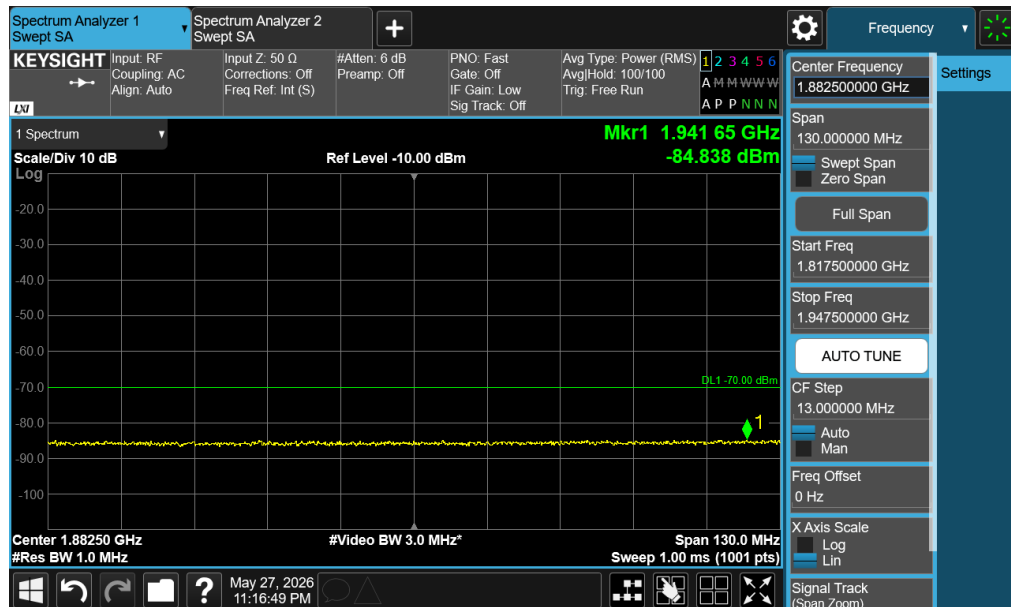
#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 311222)\_ANT1



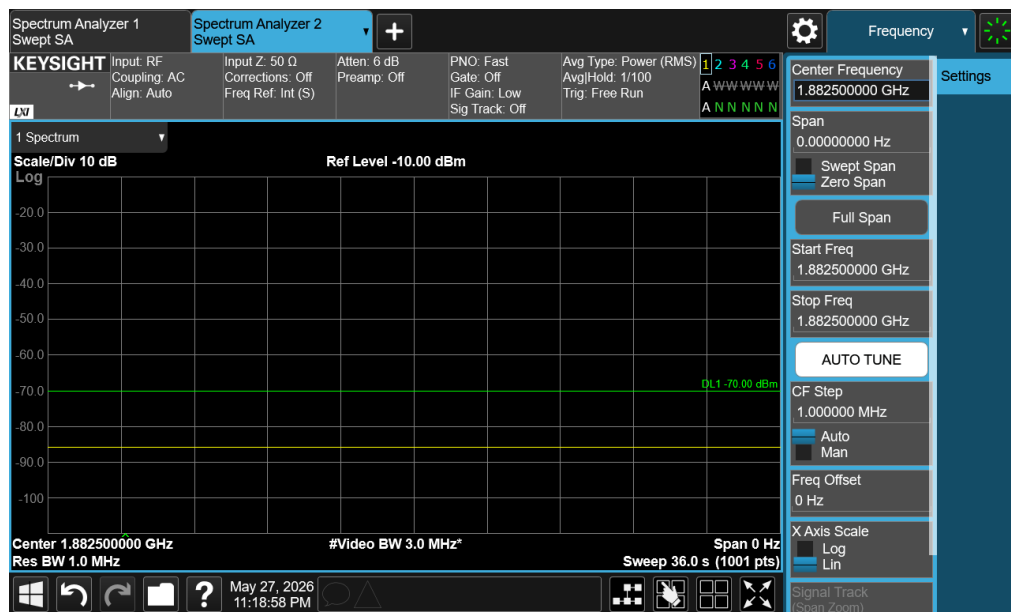
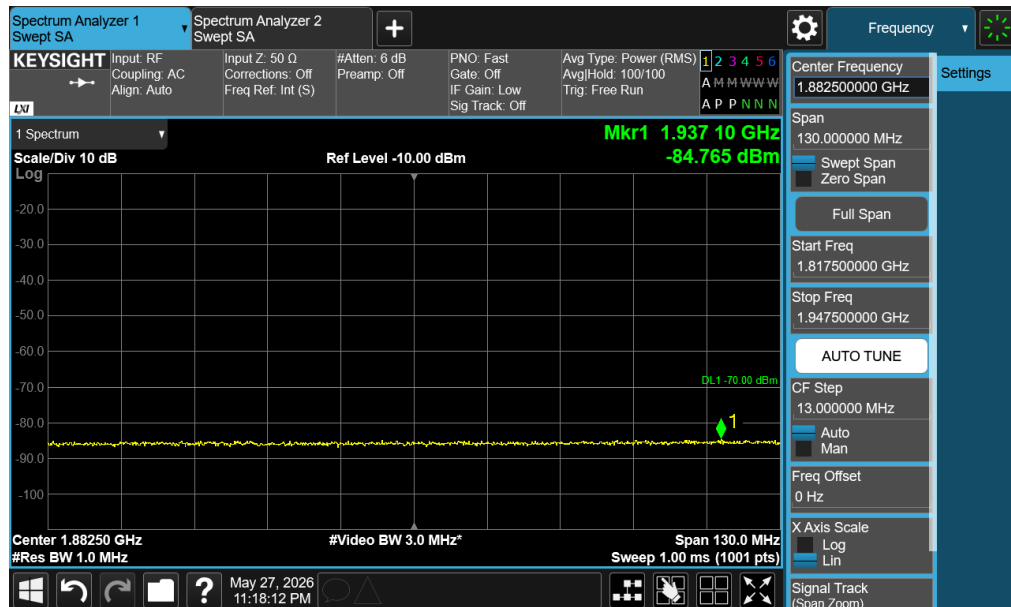
### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 311222)\_ANT2



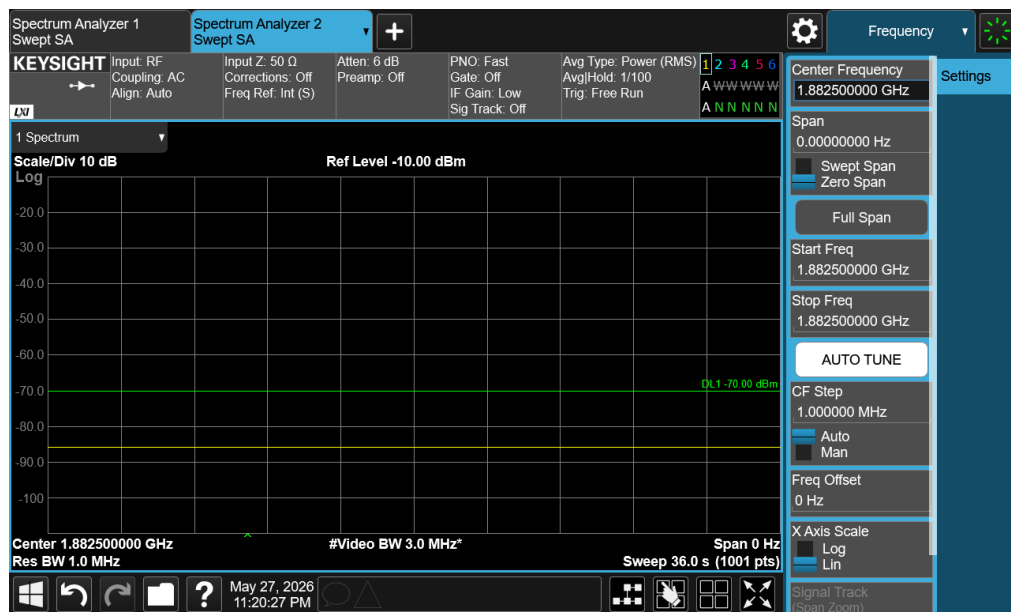
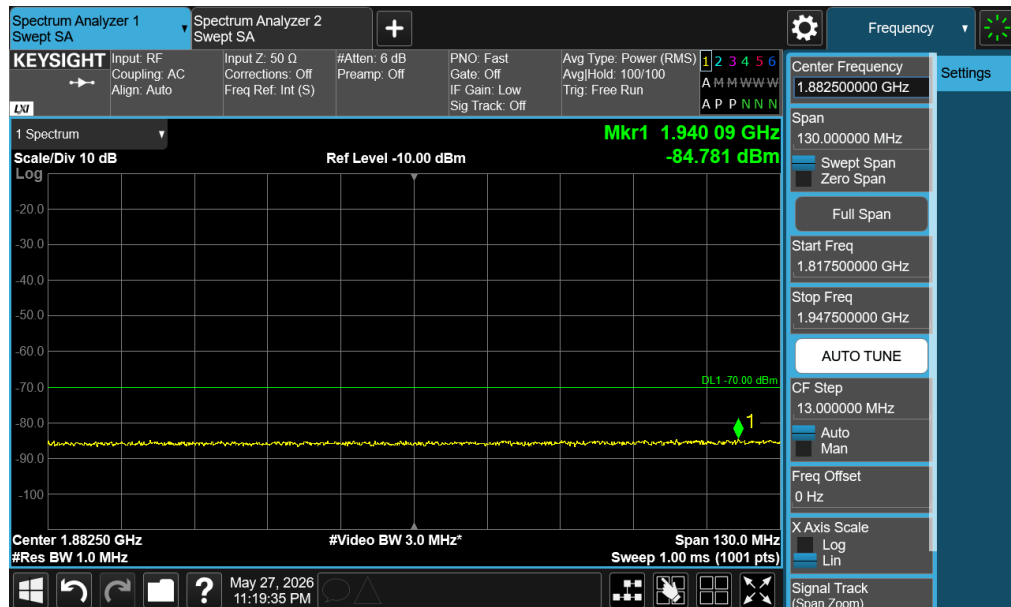
#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 311222)\_ANT3



#### Remark:

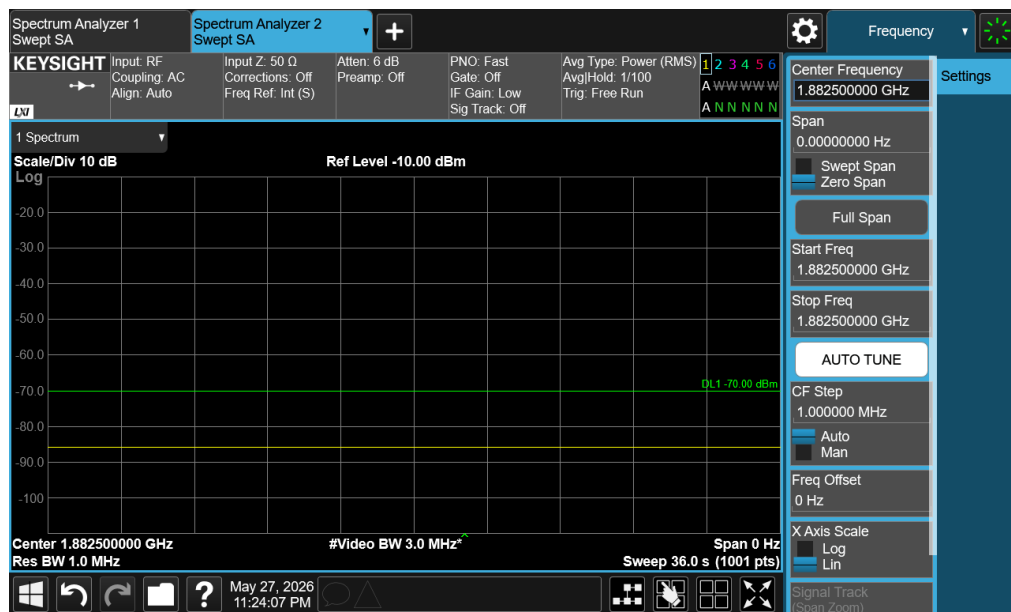
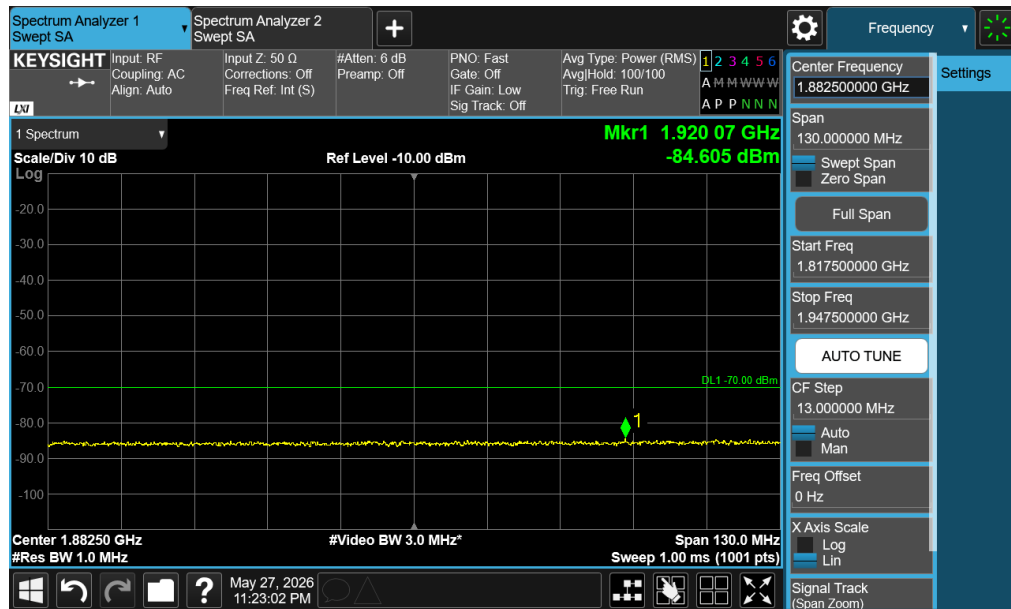
1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.





### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 311222)\_ANT5



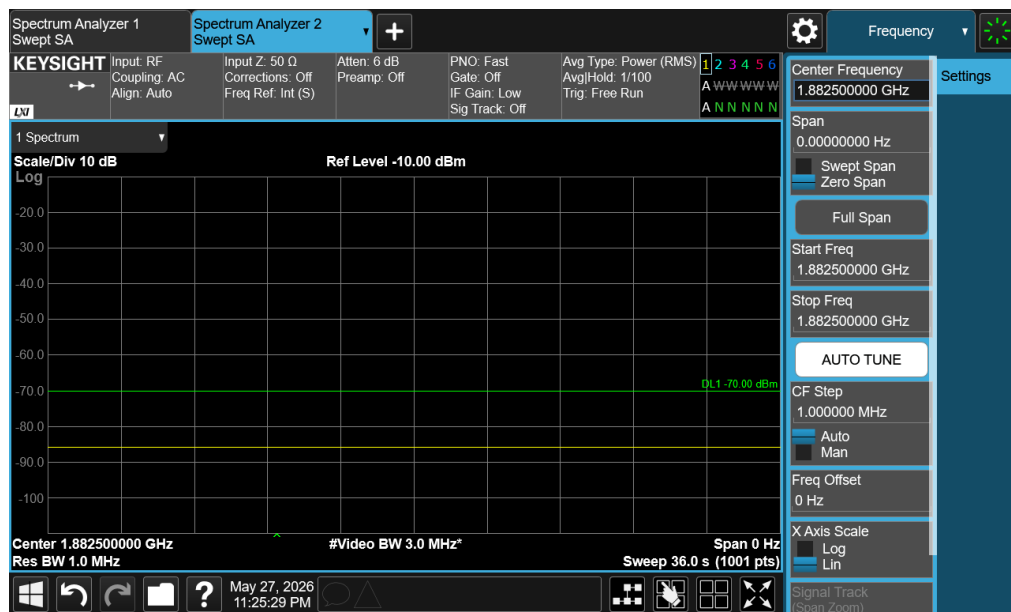
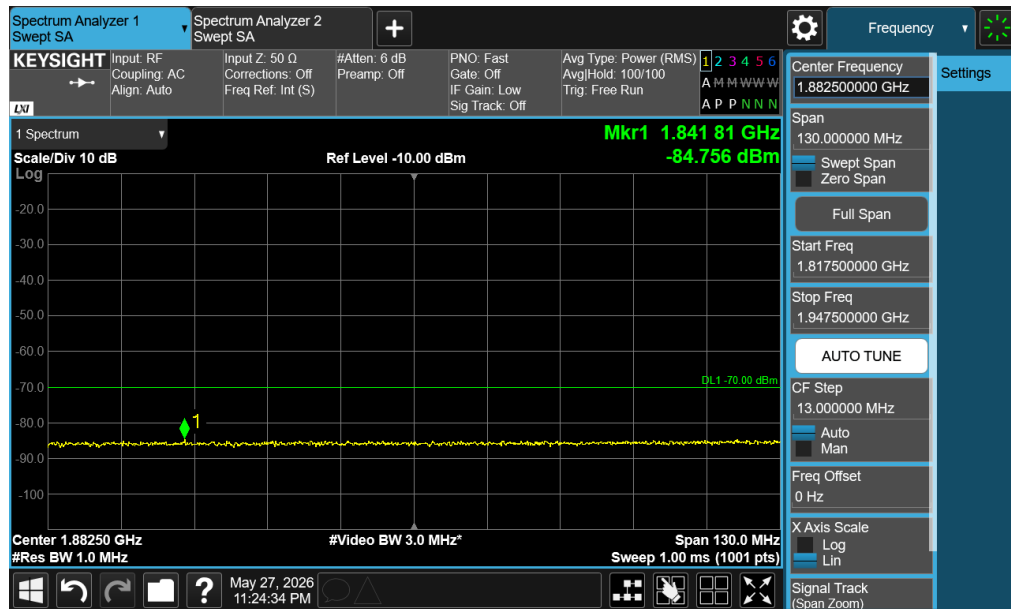
#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



### Authorized CMRS Provider test

UL\_Non-authorized CMRS provider signal (MCC/MCN: 311222)\_ANT6



#### Remark:

1. The EUT is inactive for at least 30s when change provider code set.
2. The EUT is following 20.21(e)(9)(i)(I) the noise power limit -70dBm in power off mode and the gain limit 23dB because the EUT operates in "Transmit Power OFF Mode" and loses its amplification ability.



## 3 Maximum power

| Maximum Output Power |           |             |                          |                              |            |             |       |         |
|----------------------|-----------|-------------|--------------------------|------------------------------|------------|-------------|-------|---------|
| Test Path            | Test Port | Signal Type | Input Signal Level (dBm) | Conducted Output Power (dBm) | EIRP (dBm) | Limit (dBm) |       | Verdict |
|                      |           |             |                          |                              |            | Lower       | Upper |         |
| DL                   | ANT       | AWGN        | -70.50                   | 9.44                         | 9.44       | /           | 10    | PASS    |
|                      |           | GSM         | -70.30                   | 9.58                         | 9.58       |             |       | PASS    |
| UL                   | ANT1      | AWGN        | -62.50                   | 17.85                        | 24.85      | 17          | 30    | PASS    |
|                      |           | GSM         | -62.20                   | 18.08                        | 25.08      |             |       | PASS    |
|                      | ANT2      | AWGN        | -62.50                   | 18.11                        | 25.11      |             |       | PASS    |
|                      |           | GSM         | -62.20                   | 18.36                        | 25.36      |             |       | PASS    |
|                      | ANT3      | AWGN        | -62.50                   | 18.01                        | 25.01      |             |       | PASS    |
|                      |           | GSM         | -62.20                   | 17.93                        | 24.93      |             |       | PASS    |
|                      | ANT4      | AWGN        | -62.50                   | 17.99                        | 24.99      |             |       | PASS    |
|                      |           | GSM         | -62.20                   | 18.20                        | 25.20      |             |       | PASS    |
|                      | ANT5      | AWGN        | -62.50                   | 18.13                        | 25.13      |             |       | PASS    |
|                      |           | GSM         | -62.20                   | 18.46                        | 25.46      |             |       | PASS    |
|                      | ANT6      | AWGN        | -62.50                   | 17.74                        | 24.74      |             |       | PASS    |
|                      |           | GSM         | -62.20                   | 18.05                        | 25.05      |             |       | PASS    |

### Remark:

1. The test frequency  $f_0$  was determined in Authorized frequency band verification test in this report.
2. The input signal level is pre-AGC (just below the AGC threshold).
3. EIRP = Conducted Output Power+ Antenna Gain+ Cable Loss, according to the declaration from the manufacturer, the server antenna gain with cable loss is 0dBi and the donor antenna gain with cable loss is 7dBi.
4. The frequency  $f_0$  with the highest power level in each operational band used for testing the max output power.
5. For uplink measurements, each donor port is tested individually. Summation of power readings from all donor ports is not necessary, as the EUT automatically selects only the optimal direction for directional transmission and cannot transmit signals from multiple donor ports at the same time.



| Maximum transmitter test input levels |           |             |                   |                              |         |
|---------------------------------------|-----------|-------------|-------------------|------------------------------|---------|
| Test Path                             | Test Port | Signal Type | Input Power (dBm) | Conducted output power (dBm) | Verdict |
| DL                                    | MT1       | AWGN        | -42.40            | 9.25                         | PASS    |
|                                       |           | GSM         | -42.50            | 9.39                         | PASS    |
| UL                                    | ANT1      | AWGN        | -34.10            | 17.66                        | PASS    |
|                                       |           | GSM         | -33.80            | 17.96                        | PASS    |
|                                       | ANT2      | AWGN        | -34.10            | 18.00                        | PASS    |
|                                       |           | GSM         | -33.80            | 18.21                        | PASS    |
|                                       | ANT3      | AWGN        | -34.10            | 17.67                        | PASS    |
|                                       |           | GSM         | -33.80            | 17.88                        | PASS    |
|                                       | ANT4      | AWGN        | -34.10            | 17.81                        | PASS    |
|                                       |           | GSM         | -33.80            | 18.00                        | PASS    |
|                                       | ANT5      | AWGN        | -34.10            | 17.96                        | PASS    |
|                                       |           | GSM         | -33.80            | 18.41                        | PASS    |
|                                       | ANT6      | AWGN        | -34.10            | 17.63                        | PASS    |
|                                       |           | GSM         | -33.80            | 17.83                        | PASS    |

Remark:

- For downlink, the EUT went into shutdown mode at the maximum input level (-20dBm) indicated in 5.5 of KDB 935210 D04. The test data presented on the table is at an input level 1dB less than that found to cause the shutdown, where the input power is much greater than 10dB above AGC.
- For uplink, the EUT went into shutdown mode at the maximum input level (0dBm) indicated in 5.5 of KDB 935210 D04. The test data presented on the table is at an input level 1dB less than that found to cause the shutdown, where the input power is much greater than 10dB above AGC.



## 4 Maximum booster gain computation

| Maximum Output Power |           |             |                          |                              |           |            |         |
|----------------------|-----------|-------------|--------------------------|------------------------------|-----------|------------|---------|
| Test Path            | Test Port | Signal Type | Input Signal Level (dBm) | Conducted Output Power (dBm) | Gain (dB) | Limit (dB) | Verdict |
| DL                   | ANT       | AWGN        | -70.50                   | 9.44                         | 79.94     | ≤100       | PASS    |
|                      |           | GSM         | -70.30                   | 9.58                         | 79.88     |            | PASS    |
| UL                   | ANT1      | AWGN        | -62.50                   | 17.85                        | 80.35     |            | PASS    |
|                      |           | GSM         | -62.20                   | 18.08                        | 80.28     |            | PASS    |
|                      | ANT2      | AWGN        | -62.50                   | 18.11                        | 80.61     |            | PASS    |
|                      |           | GSM         | -62.20                   | 18.36                        | 80.56     |            | PASS    |
|                      | ANT3      | AWGN        | -62.50                   | 18.01                        | 80.51     |            | PASS    |
|                      |           | GSM         | -62.20                   | 17.93                        | 80.13     |            | PASS    |
|                      | ANT4      | AWGN        | -62.50                   | 17.99                        | 80.49     |            | PASS    |
|                      |           | GSM         | -62.20                   | 18.20                        | 80.40     |            | PASS    |
|                      | ANT5      | AWGN        | -62.50                   | 18.13                        | 80.63     |            | PASS    |
|                      |           | GSM         | -62.20                   | 18.46                        | 80.66     |            | PASS    |
|                      | ANT6      | AWGN        | -62.50                   | 17.74                        | 80.24     |            | PASS    |
|                      |           | GSM         | -62.20                   | 18.05                        | 80.25     |            | PASS    |

### Remark:

1. The test frequency  $f_0$  was determined in Authorized frequency band verification test in this report.
2. The input signal level is pre-AGC (just below the AGC threshold).
3. The EUT has automatic gain adjustment based on isolation measurements between booster donor and server antennas, so the maximum gain shall not exceed 100dB.



| Equivalent Uplink and Downlink Gain |             |                  |                    |                    |            |         |
|-------------------------------------|-------------|------------------|--------------------|--------------------|------------|---------|
| Test Port (UL)                      | Signal Type | Uplink Gain (dB) | Downlink Gain (dB) | UL vs DL Gain (dB) | Limit (dB) | Verdict |
| ANT1                                | AWGN        | 79.94            | 80.35              | 0.41               | ≤9         | PASS    |
|                                     | GSM         | 79.88            | 80.28              | 0.40               |            | PASS    |
| ANT2                                | AWGN        | 79.94            | 80.61              | 0.67               |            | PASS    |
|                                     | GSM         | 79.88            | 80.56              | 0.68               |            | PASS    |
| ANT3                                | AWGN        | 79.94            | 80.51              | 0.57               |            | PASS    |
|                                     | GSM         | 79.88            | 80.13              | 0.25               |            | PASS    |
| ANT4                                | AWGN        | 79.94            | 80.49              | 0.55               |            | PASS    |
|                                     | GSM         | 79.88            | 80.4               | 0.52               |            | PASS    |
| ANT5                                | AWGN        | 79.94            | 80.63              | 0.69               |            | PASS    |
|                                     | GSM         | 79.88            | 80.66              | 0.78               |            | PASS    |
| ANT6                                | AWGN        | 79.94            | 80.24              | 0.30               |            | PASS    |
|                                     | GSM         | 79.88            | 80.25              | 0.37               |            | PASS    |



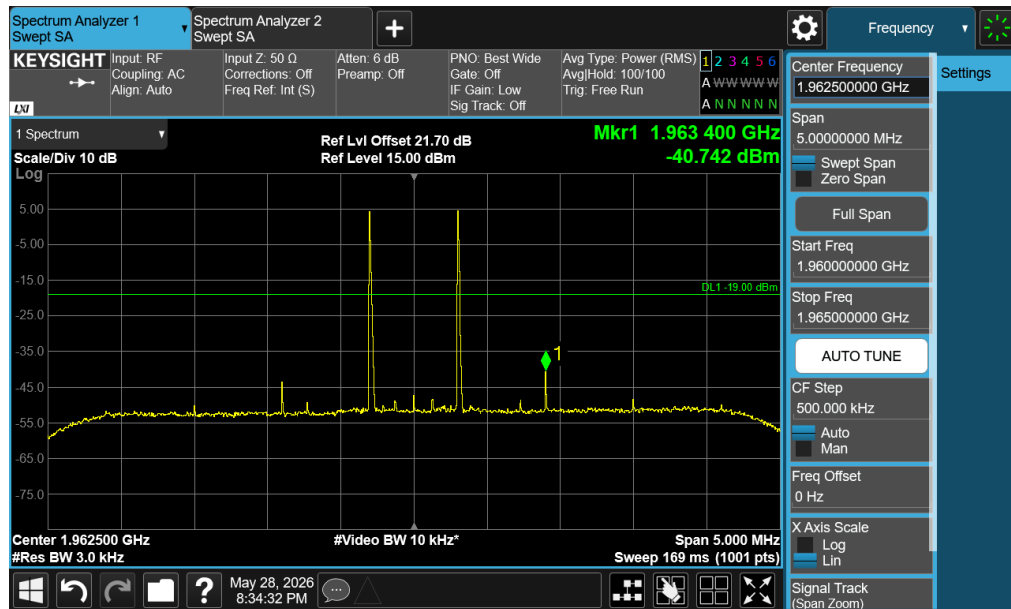
## 5 Intermodulation product

| Intermodulation product |           |              |                                         |                |                                      |                |         |
|-------------------------|-----------|--------------|-----------------------------------------|----------------|--------------------------------------|----------------|---------|
| Test Path               | Test Port | Test Channel | Test Signal/<br>Signal Spacing<br>(kHz) | Signal Level   | Worst product<br>test level<br>(dBm) | Limit<br>(dBm) | Verdict |
| DL                      | ANT       | M            | CW/600kHz                               | Pre-AGC        | -40.74                               | ≤-19           | PASS    |
|                         |           |              |                                         | 10dB above AGC | -40.31                               |                | PASS    |
| UL                      | ANT1      | M            | CW/600kHz                               | Pre-AGC        | -26.54                               | ≤-19           | PASS    |
|                         |           |              |                                         | 10dB above AGC | -26.52                               |                | PASS    |



### Intermodulation product

#### DL\_pre-AGC\_MT1



#### DL\_10dB above AGC\_MT1

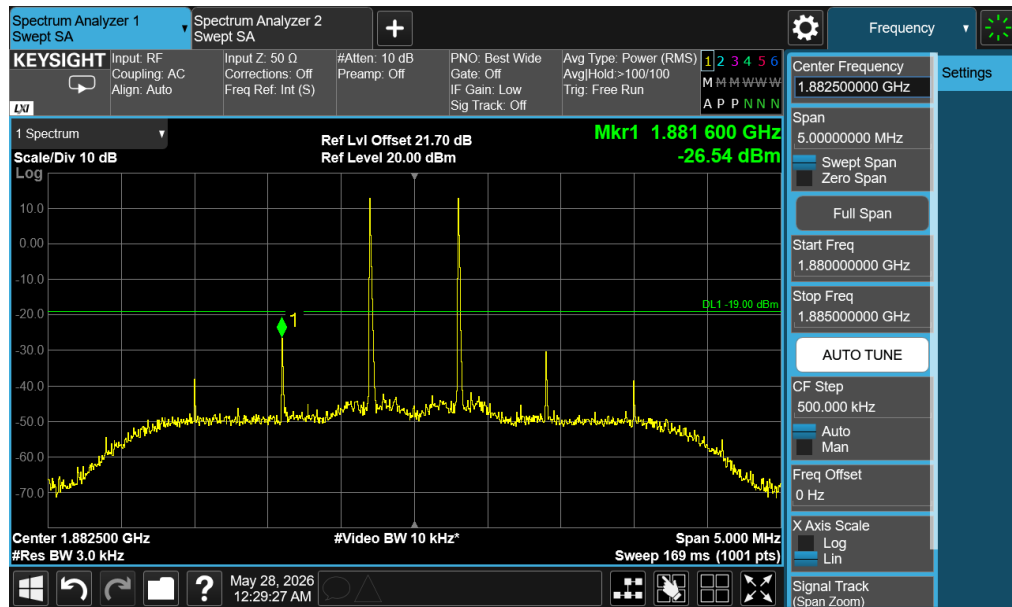


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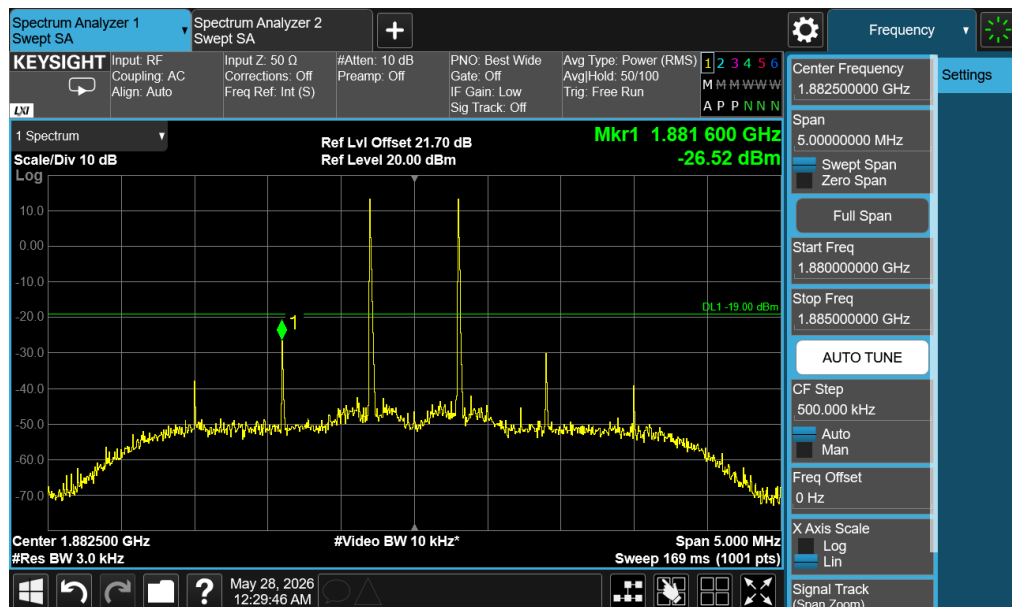
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### Intermodulation product

#### UL\_pre-AGC\_DT



#### UL\_10dB above AGC\_DT



## 6 Out-of-band emissions

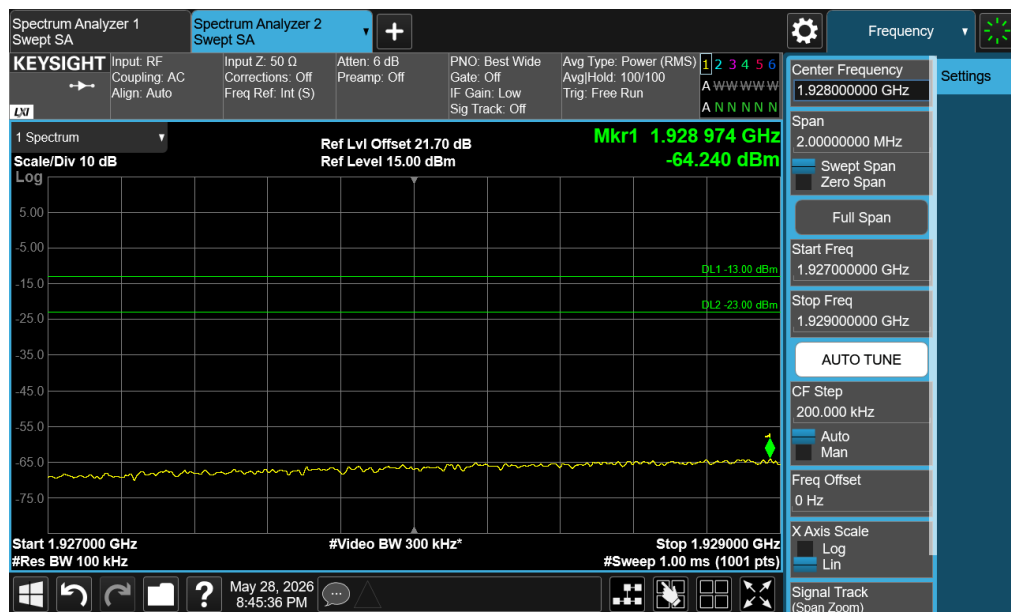
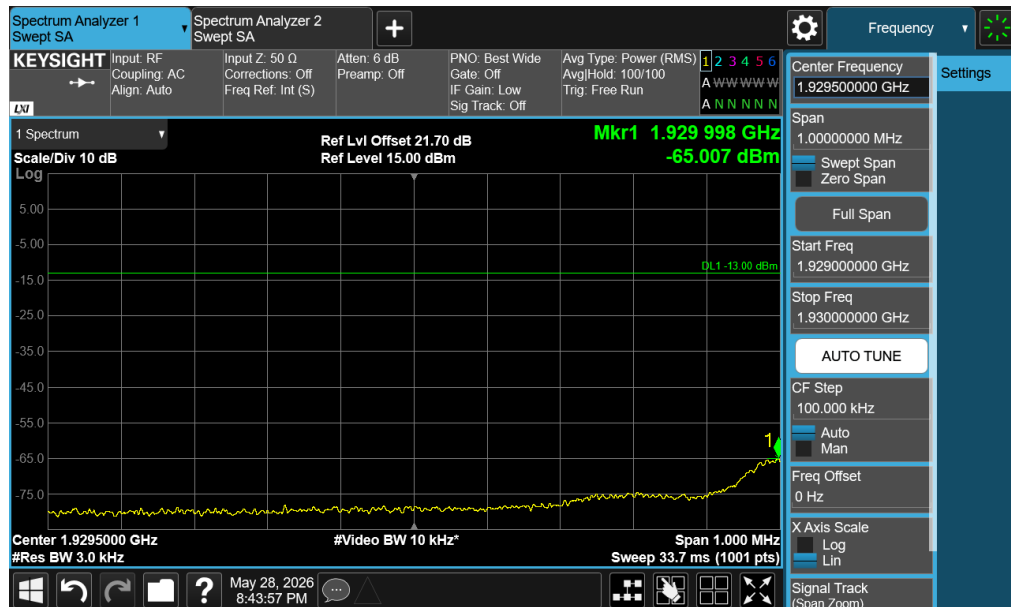
| Out-of-band emissions |           |              |           |                |                                  |             |         |
|-----------------------|-----------|--------------|-----------|----------------|----------------------------------|-------------|---------|
| Test Path             | Test Port | Test Signal  | Band Edge | Signal Level   | Worst conducted test level (dBm) | Limit (dBm) | Verdict |
| DL                    | ANT       | GSM          | Lower     | Pre-AGC        | -54.24**                         | ≤-13        | PASS    |
|                       |           |              |           | 10dB above AGC | -54.11**                         |             | PASS    |
|                       |           |              | Upper     | Pre-AGC        | -42.80**                         |             | PASS    |
|                       |           |              |           | 10dB above AGC | -42.87**                         |             | PASS    |
|                       |           | 1.25MHz AWGN | Lower     | Pre-AGC        | -44.86                           | ≤-13        | PASS    |
|                       |           |              |           | 10dB above AGC | -43.12                           |             | PASS    |
|                       |           |              | Upper     | Pre-AGC        | -37.62                           |             | PASS    |
|                       |           |              |           | 10dB above AGC | -38.31                           |             | PASS    |
|                       |           | 4.1MHz AWGN  | Lower     | Pre-AGC        | -40.23                           | ≤-13        | PASS    |
|                       |           |              |           | 10dB above AGC | -41.08                           |             | PASS    |
|                       |           |              | Upper     | Pre-AGC        | -29.54                           |             | PASS    |
|                       |           |              |           | 10dB above AGC | -29.41                           |             | PASS    |
| UL                    | ANT1      | GSM          | Lower     | Pre-AGC        | -48.44**                         | ≤-13        | PASS    |
|                       |           |              |           | 10dB above AGC | -45.31**                         |             | PASS    |
|                       |           |              | Upper     | Pre-AGC        | -56.39**                         |             | PASS    |
|                       |           |              |           | 10dB above AGC | -54.35**                         |             | PASS    |
|                       |           | 1.25MHz AWGN | Lower     | Pre-AGC        | -37.71                           | ≤-13        | PASS    |
|                       |           |              |           | 10dB above AGC | -35.91                           |             | PASS    |
|                       |           |              | Upper     | Pre-AGC        | -47.75                           |             | PASS    |
|                       |           |              |           | 10dB above AGC | -44.48                           |             | PASS    |
|                       |           | 4.1MHz AWGN  | Lower     | Pre-AGC        | -29.31                           | ≤-13        | PASS    |
|                       |           |              |           | 10dB above AGC | -26.61                           |             | PASS    |
|                       |           |              | Upper     | Pre-AGC        | -39.33                           |             | PASS    |
|                       |           |              |           | 10dB above AGC | -36.21                           |             | PASS    |

Remark:  
 \*\* To ensure measurement accuracy, alternative RBW=100kHz was utilized for out-of-band emission testing outside the 1 MHz band edge, instead of the RBW=1 MHz specified by the standard. Final results shall be calculated based on the readings shown in the test plot, with the calculation formula:  
 Final Level= Read Level+ 10\*log(1MHz/100kHz)= Read Level+ 10dB



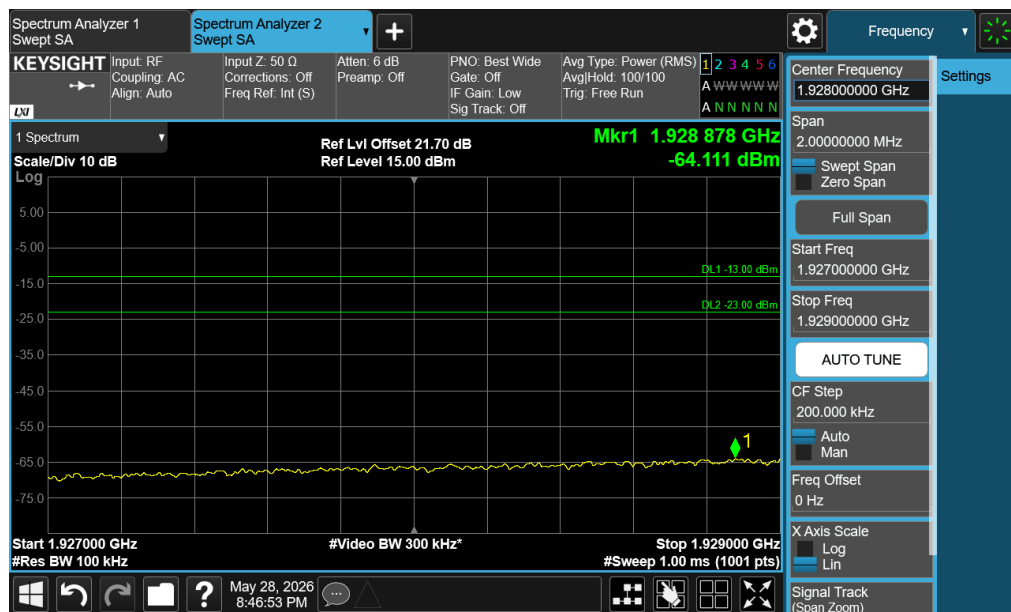
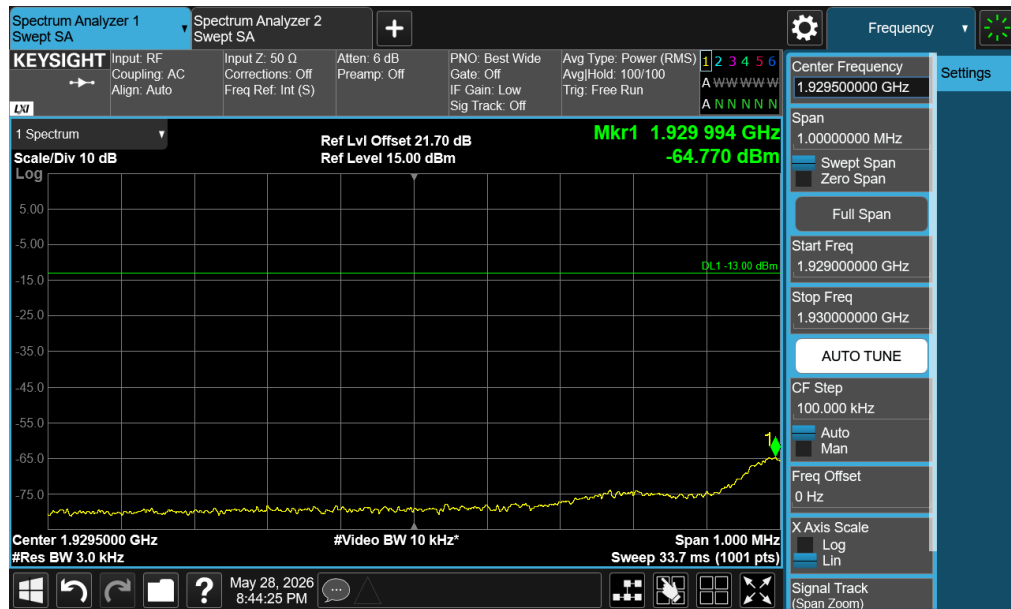
### Out-of-band emissions

#### DL\_GSM input\_Lower band edge\_pre-AGC



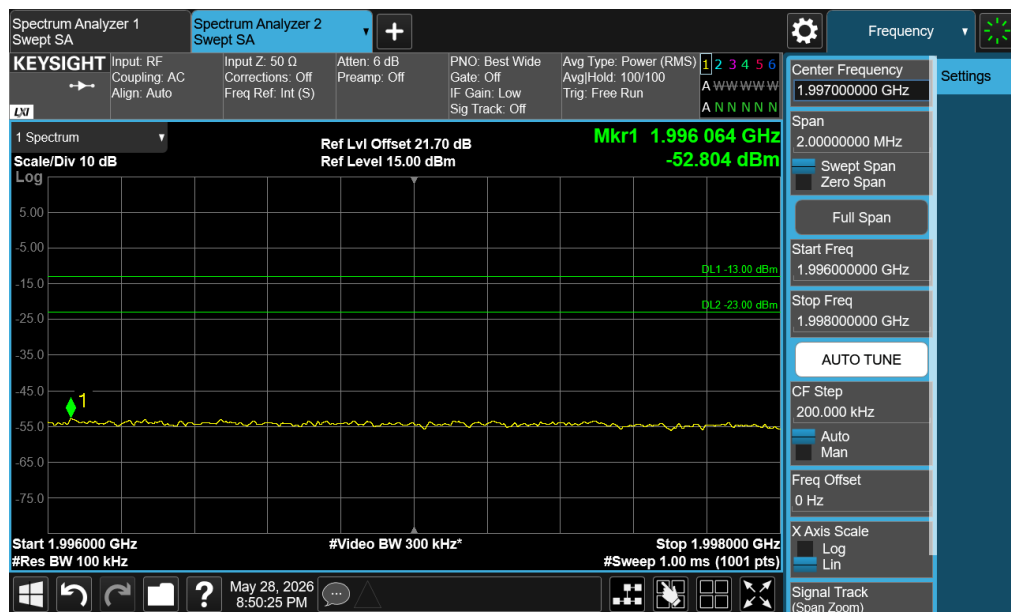
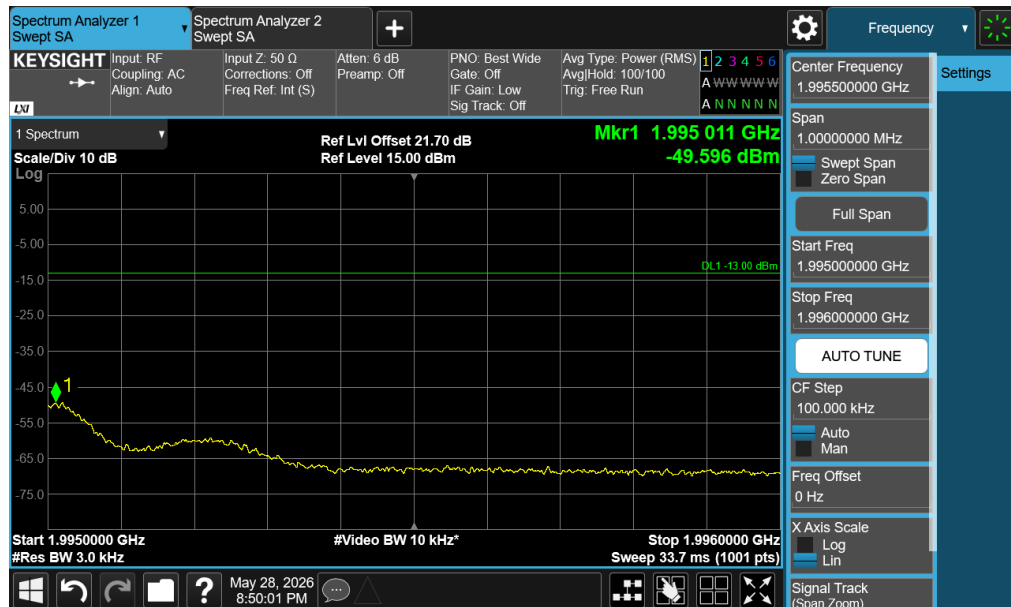
### Out-of-band emissions

DL\_GSM input\_Lower band edge\_10dB above AGC



### Out-of-band emissions

#### DL\_GSM input\_Upper band edge\_pre-AGC



### Out-of-band emissions

DL\_GSM input\_Upper band edge\_10dB above AGC

