

Appendix -

Test Data and Result for report

GZCR260400082402 (A)

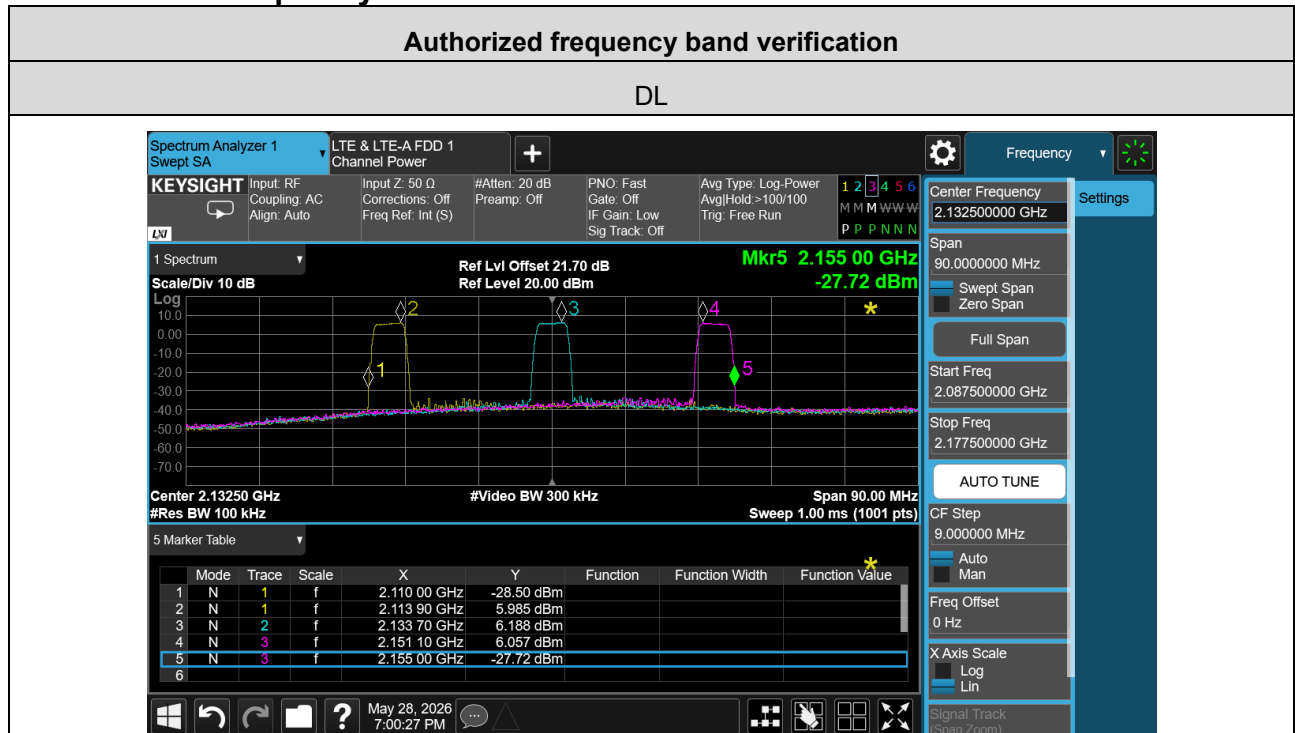
(For AWS-1)



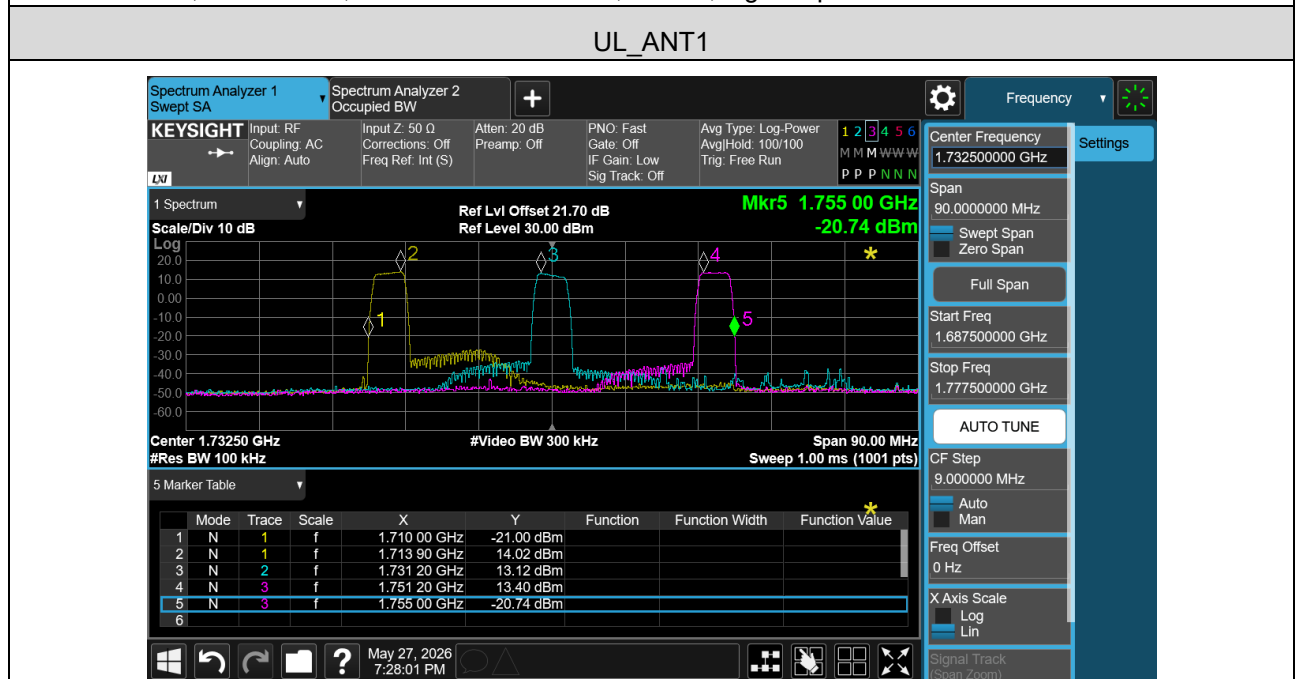
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1 Authorized frequency band verification



$f_0=2113.9\text{MHz}$, 2133.7MHz , 2151.1MHz for lowest, middle, highest passband

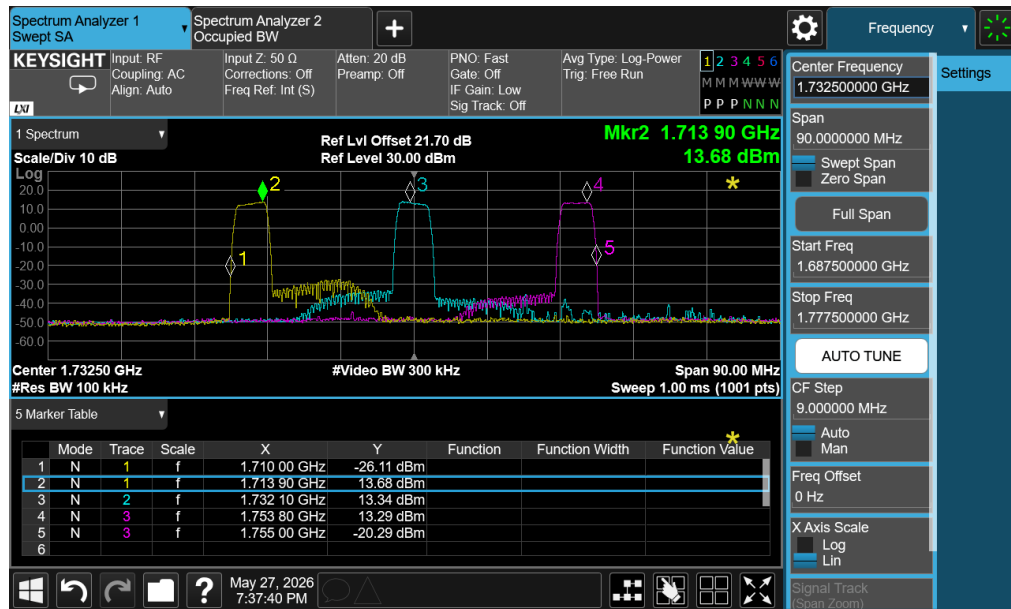


$f_0=1713.9\text{MHz}$, 1731.2MHz , 1751.2MHz for lowest, middle, highest passband



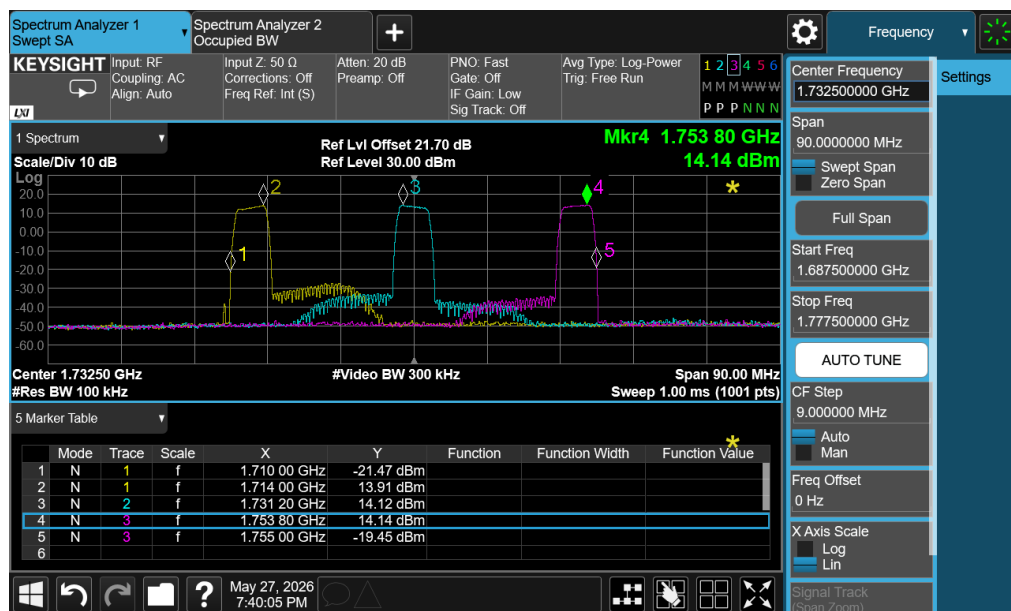
Authorized frequency band verification

UL_ANT2



$f_0=1713.9\text{MHz}$, 1732.1MHz , 1753.8MHz for lowest, middle, highest passband

UL_ANT3

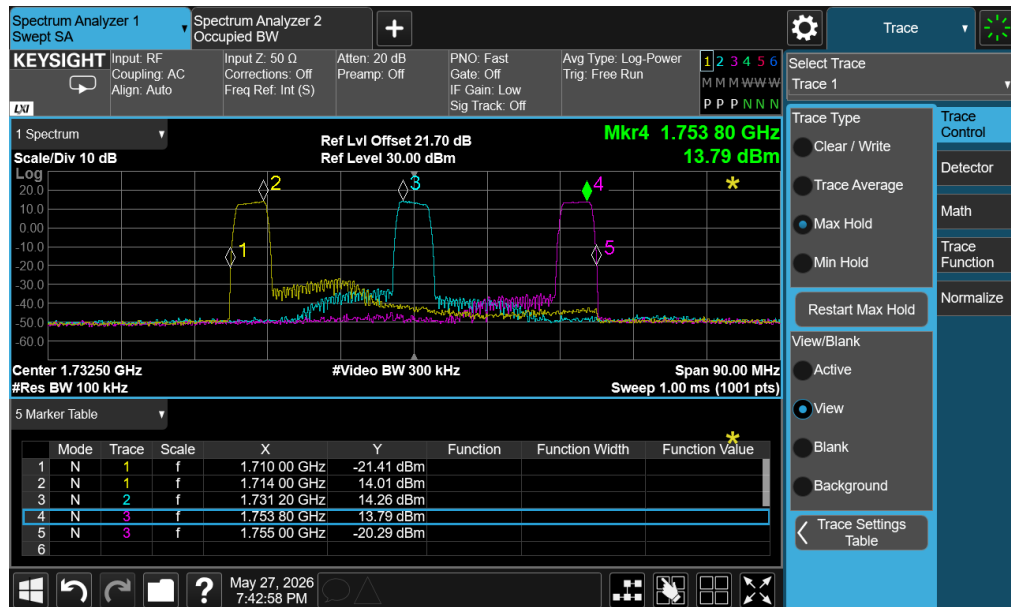


$f_0=1714.0\text{MHz}$, 1731.2MHz , 1753.8MHz for lowest, middle, highest passband



Authorized frequency band verification

UL_ANT4



$f_0=1714.0\text{MHz}$, 1731.2MHz , 1753.8MHz for lowest, middle, highest passband

UL_ANT5



$f_0=1714.0\text{MHz}$, 1731.2MHz , 1753.7MHz for lowest, middle, highest passband



Authorized frequency band verification

UL_ANT6



$f_0=1714.0\text{MHz}$, 1731.2MHz , 1753.7MHz for lowest, middle, highest passband



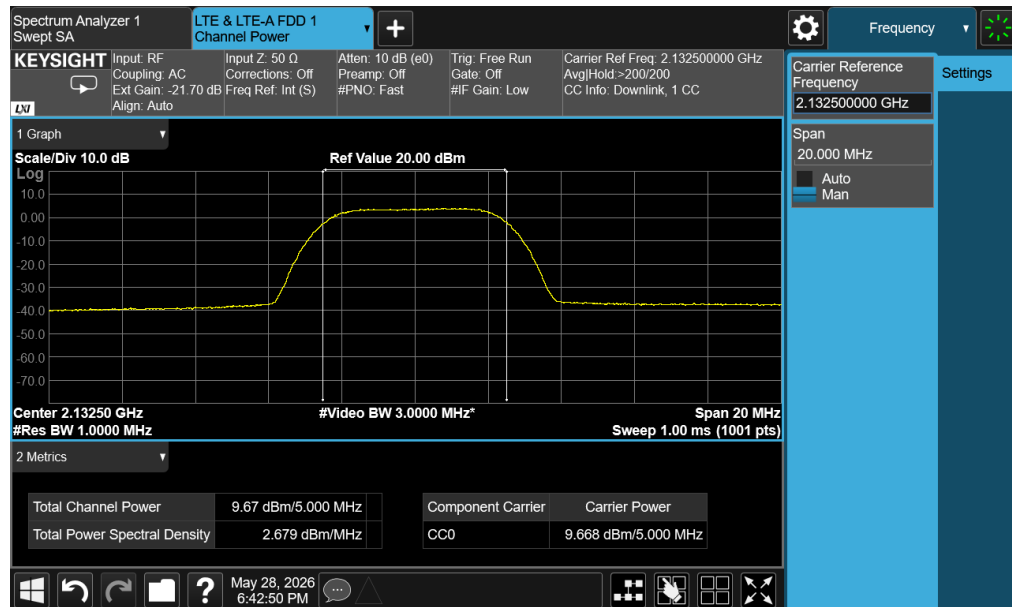
2 Authorized CMRS provider test

Authorized CMRS provider test	
Authorized CMRS Provider ID	Non-authorized CMRS Provider ID
MCC/MCN: 310410	MCC/MCN: 310111
	MCC/MCN: 311222
Remark: 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. 2. One authorized CMRS Provider signal and two non-authorized CMRS Provider signals were verified as this table.	

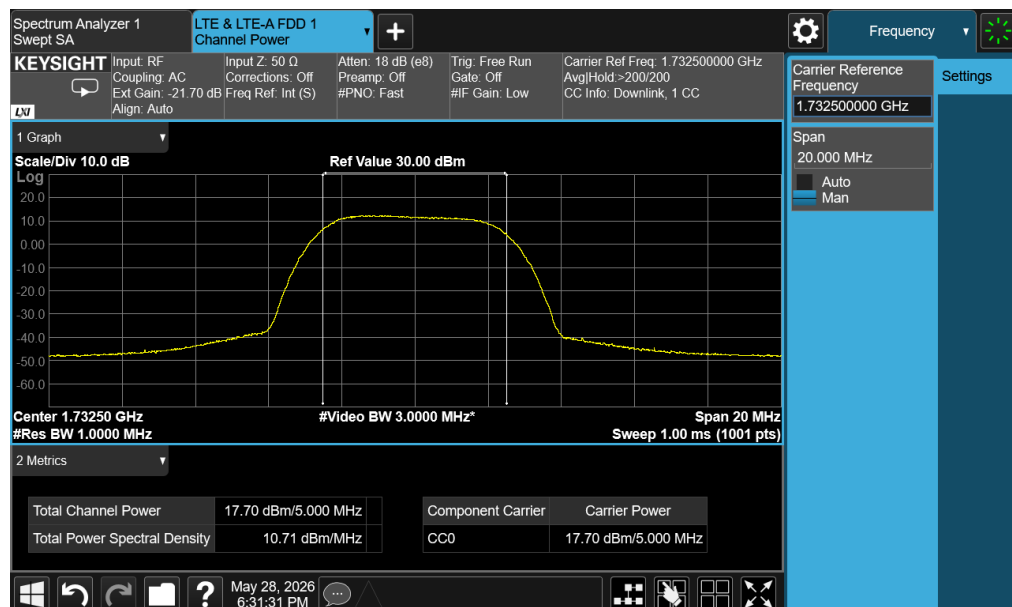


Authorized CMRS Provider test

DL_Authorized CMRS provider signal (MCC/MCN: 310410)

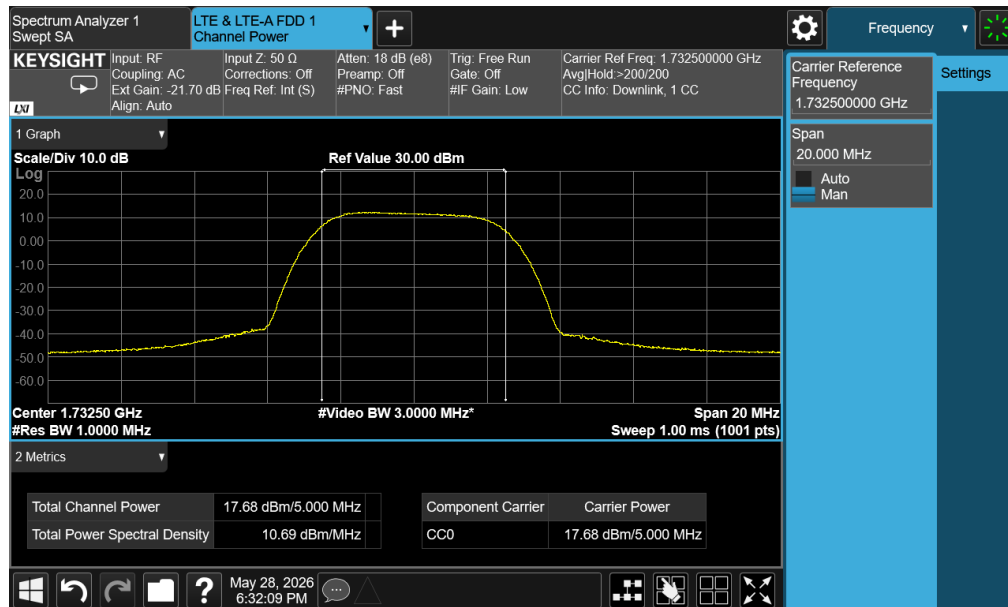


UL_Authorized CMRS provider signal (MCC/MCN: 310410)_ANT1

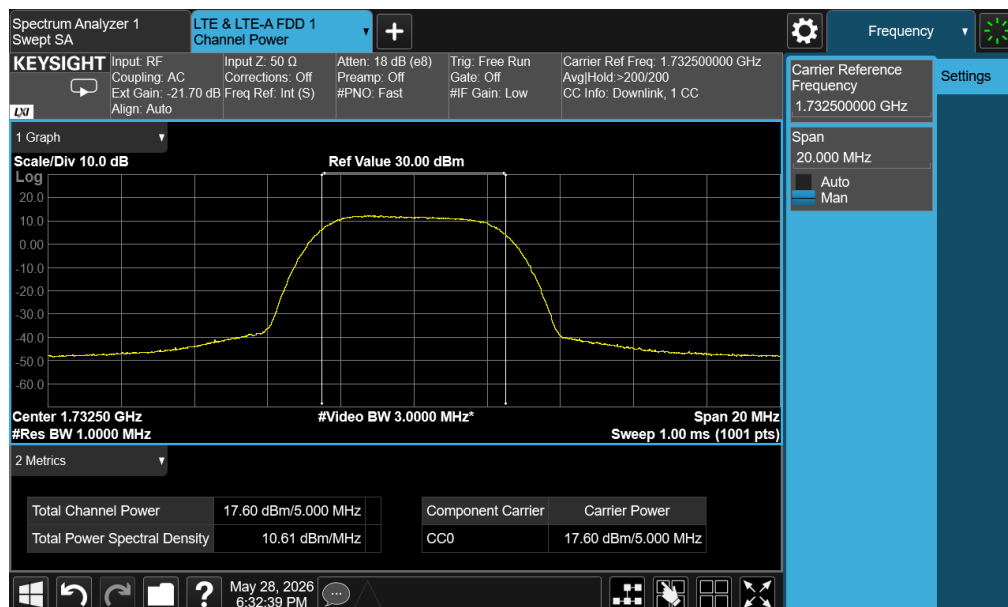


Authorized CMRS Provider test

UL_Authorized CMRS provider signal (MCC/MCN: 310410)_ANT2

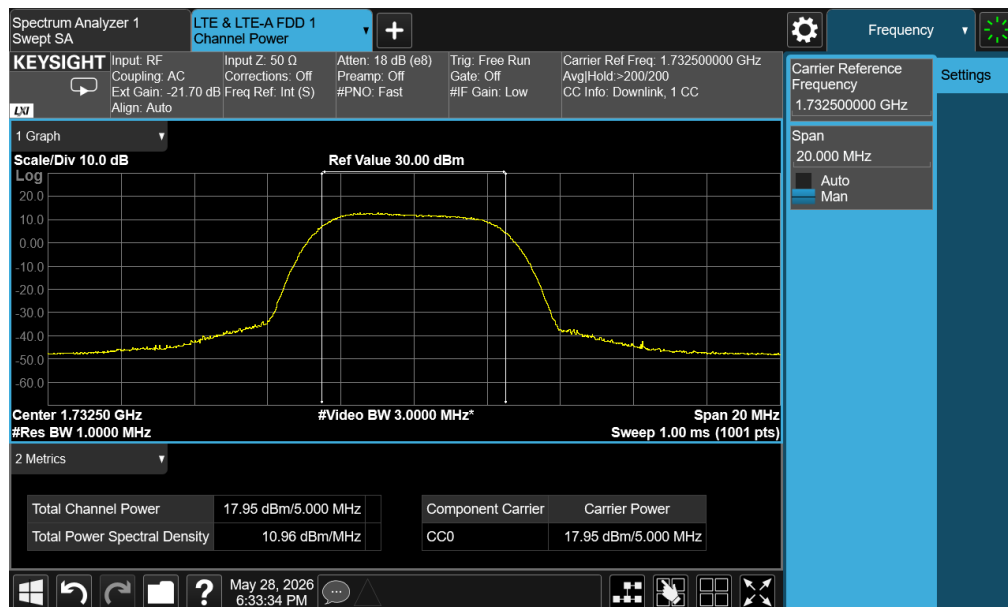


UL_Authorized CMRS provider signal (MCC/MCN: 310410)_ANT3

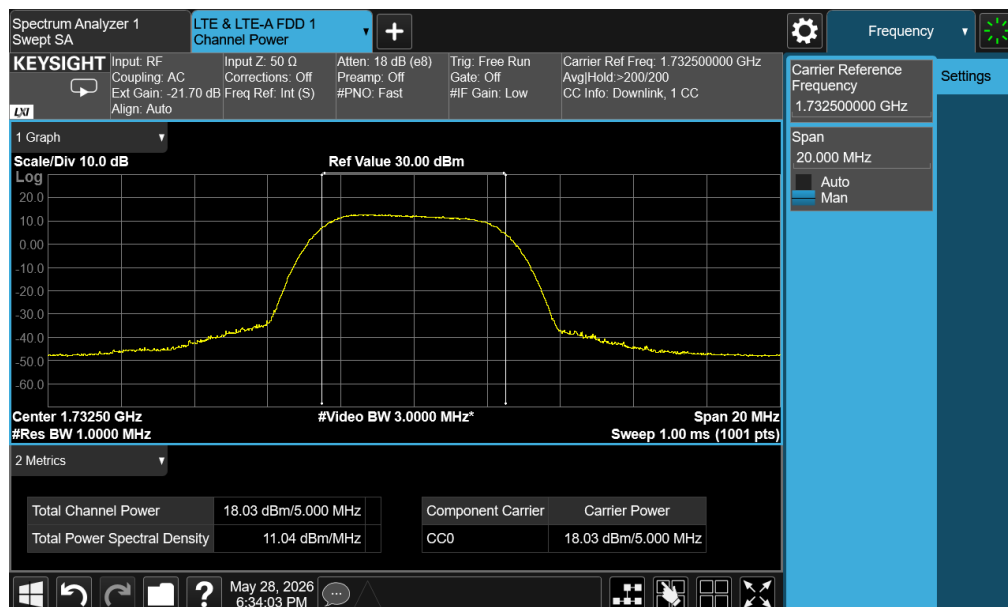


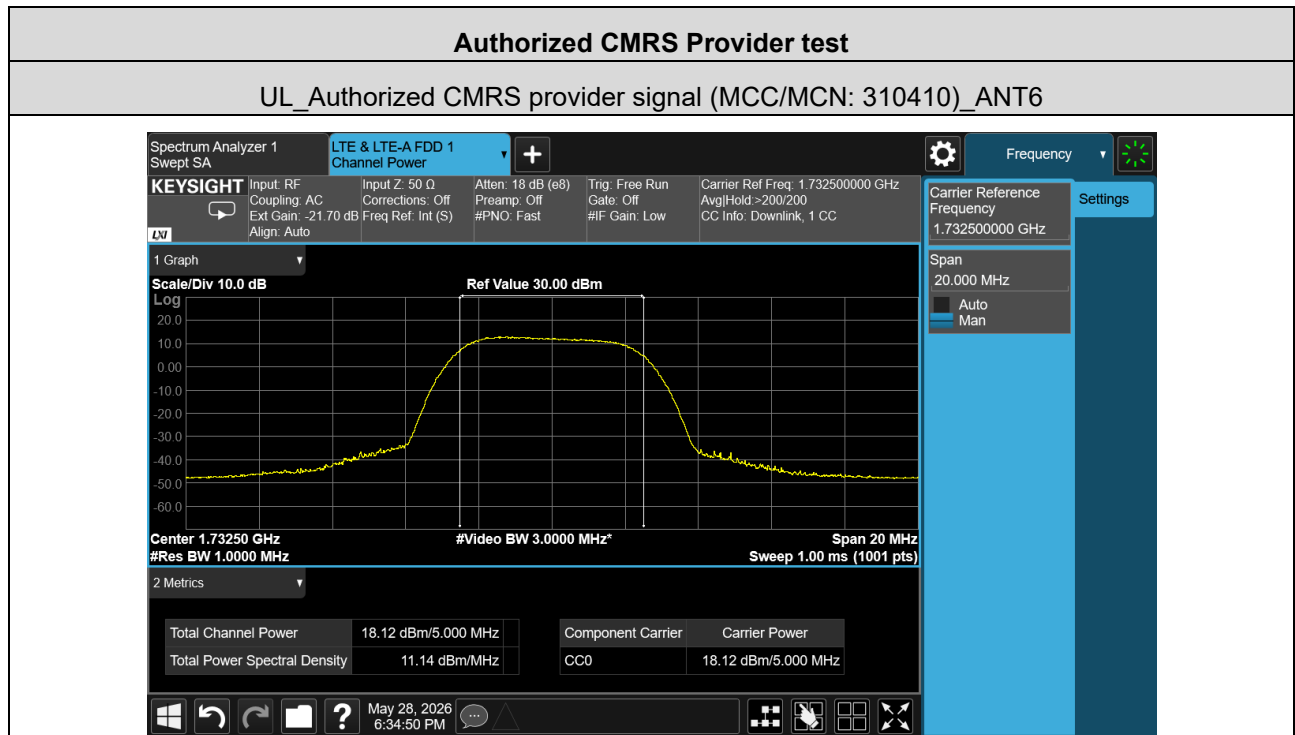
Authorized CMRS Provider test

UL_Authorized CMRS provider signal (MCC/MCN: 310410)_ANT4



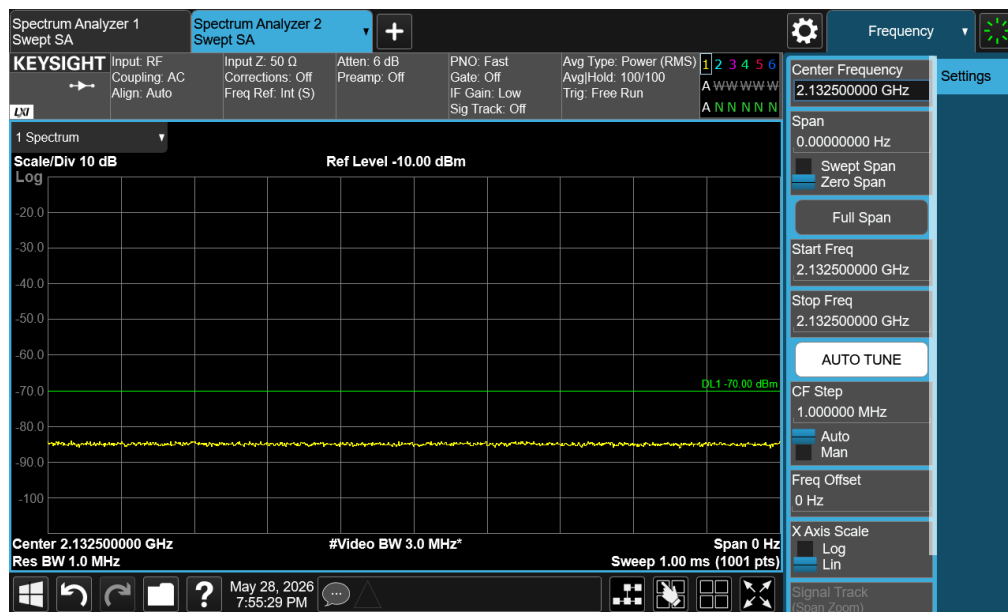
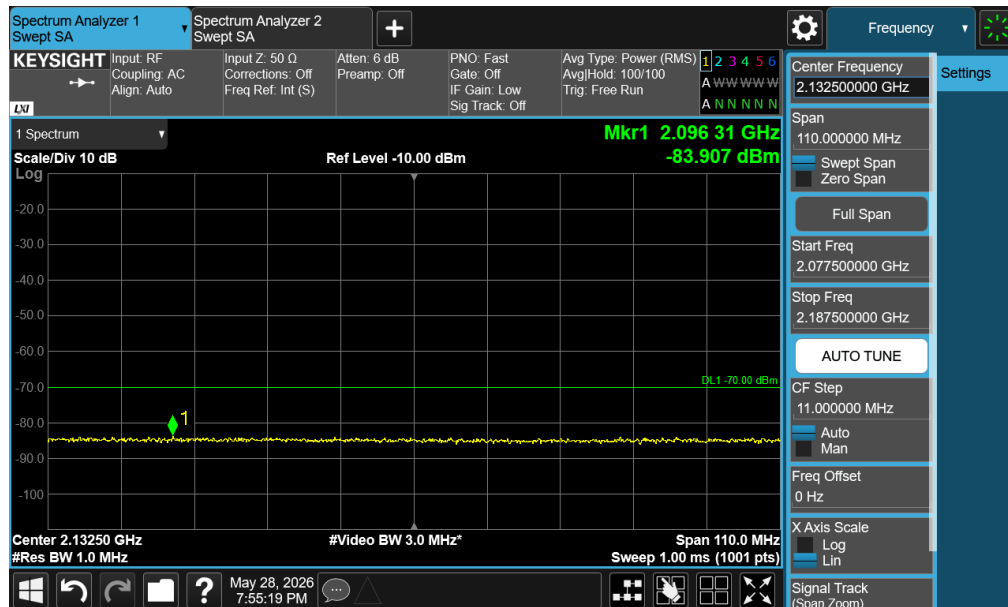
UL_Authorized CMRS provider signal (MCC/MCN: 310410)_ANT5





Authorized CMRS Provider test

DL_Non-authorized CMRS provider signal (MCC/MCN: 310111)



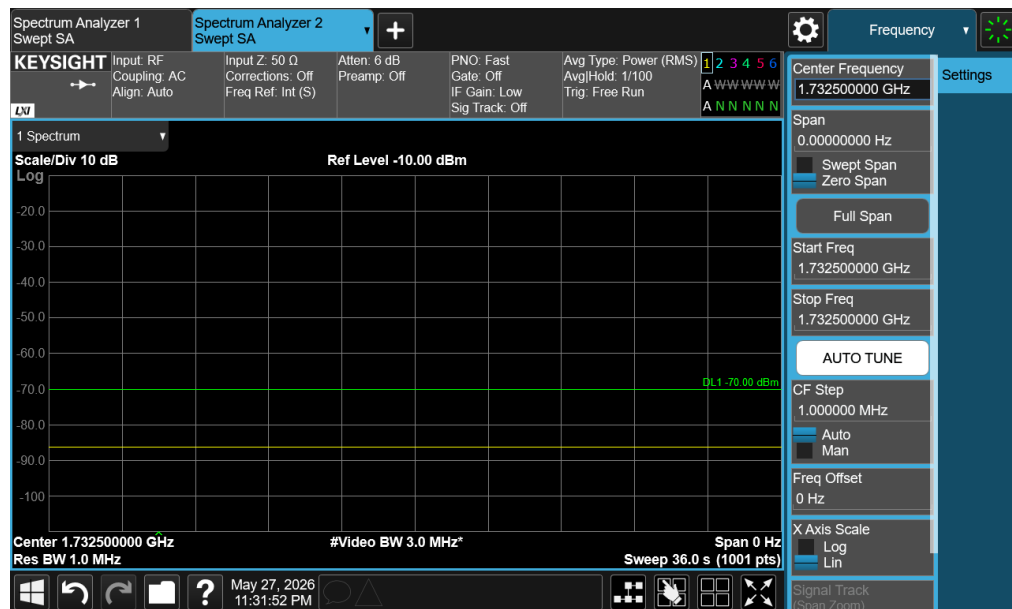
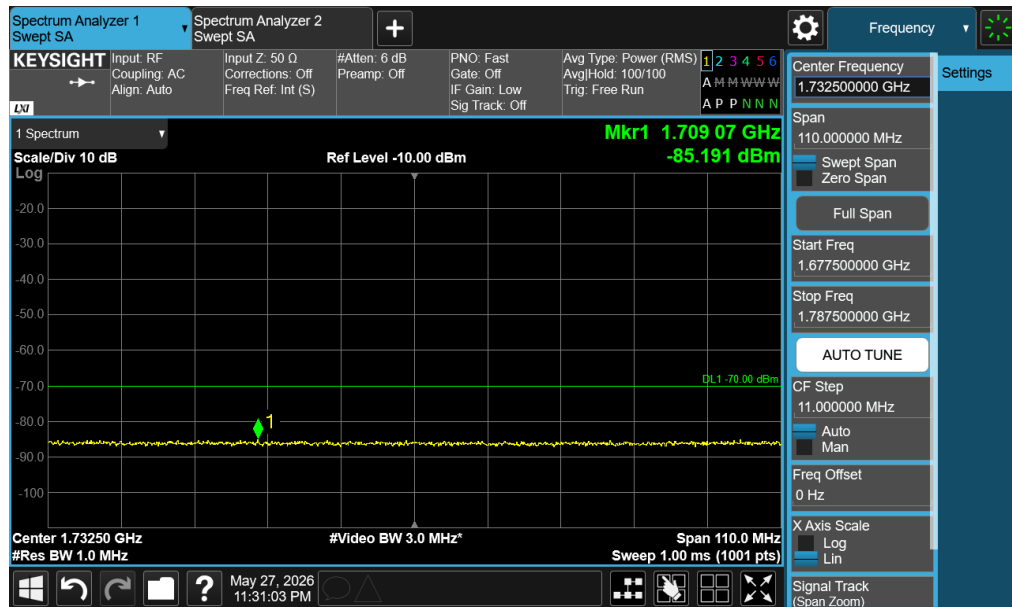
Remark:

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



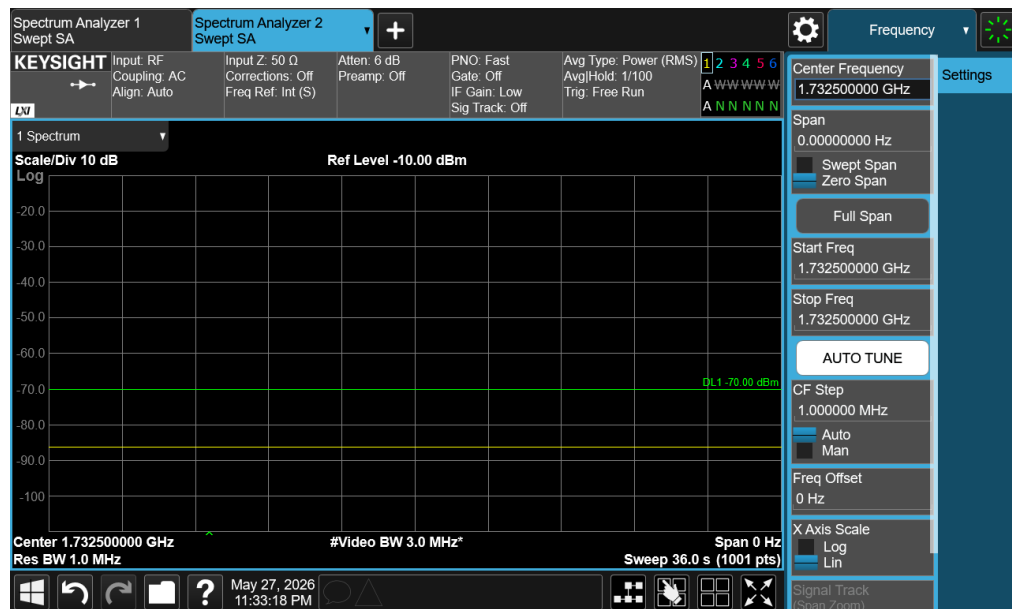
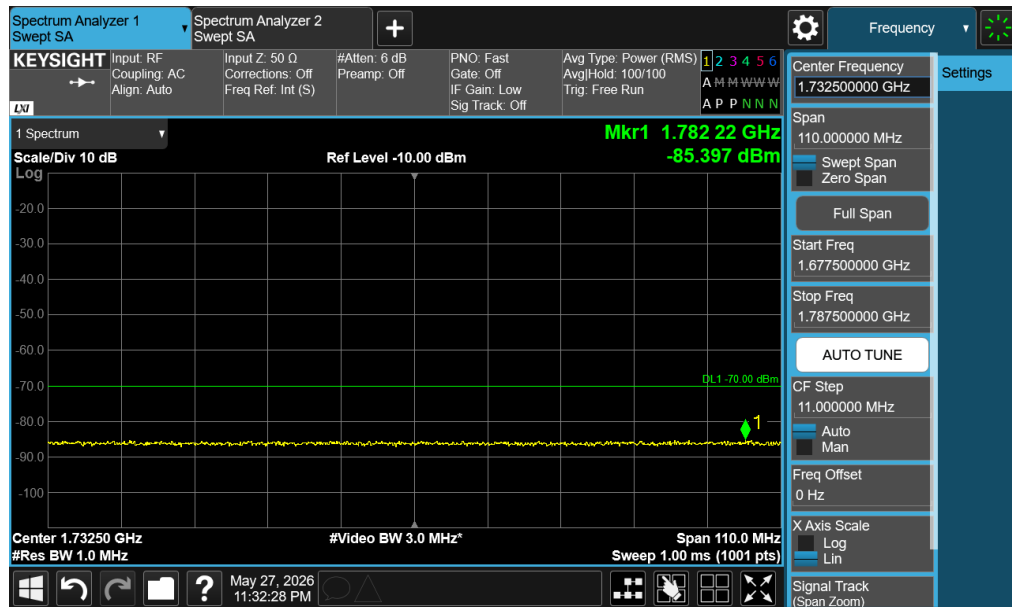
Remark:

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



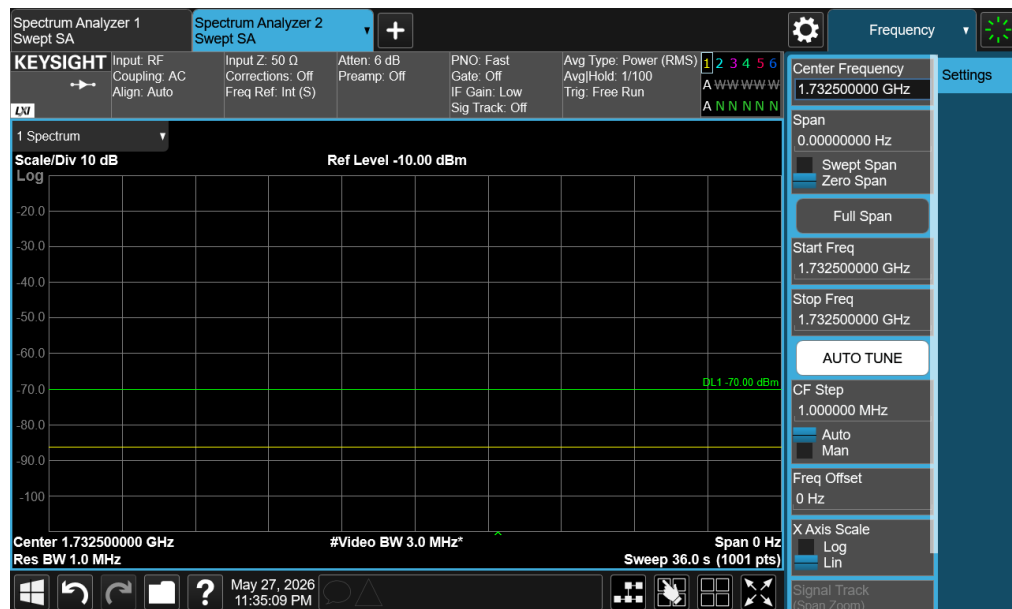
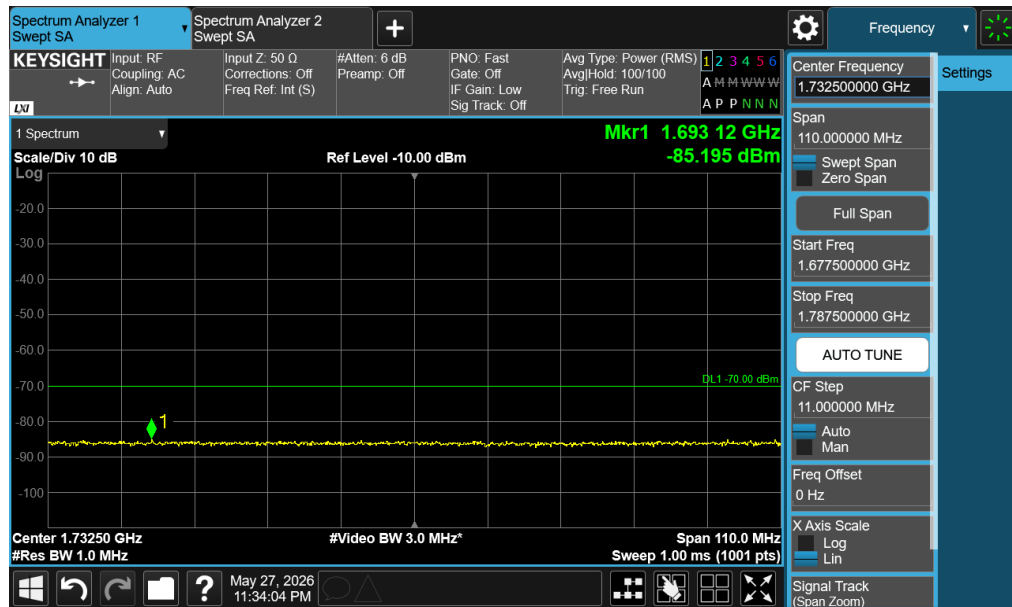
Remark:

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



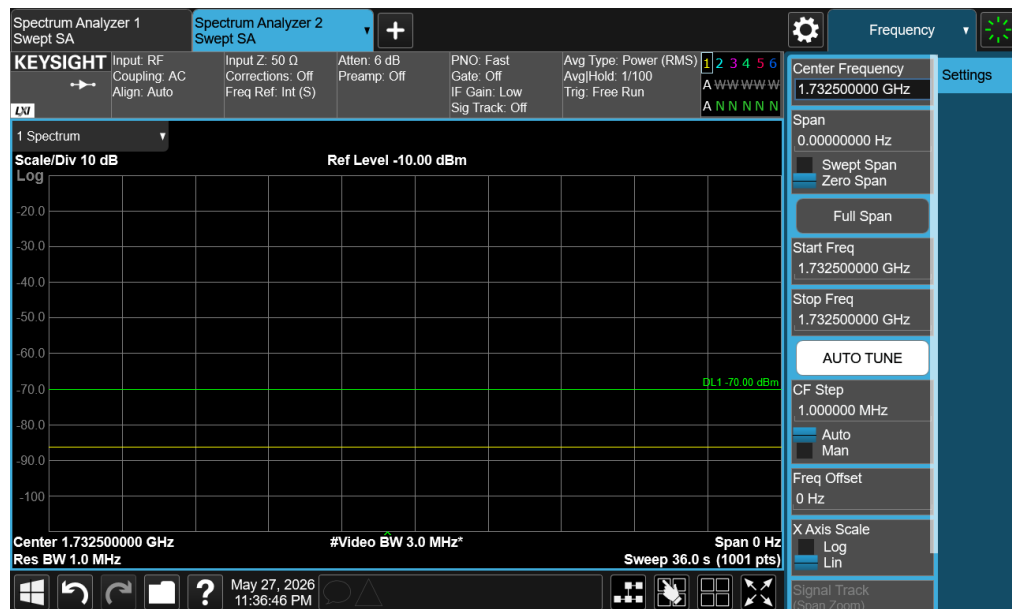
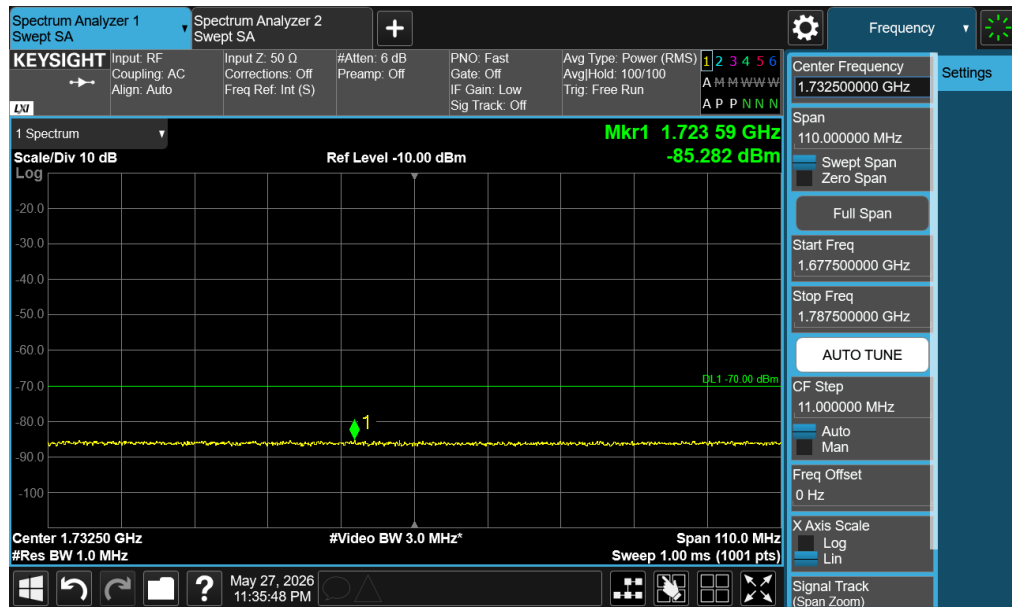
Remark:

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



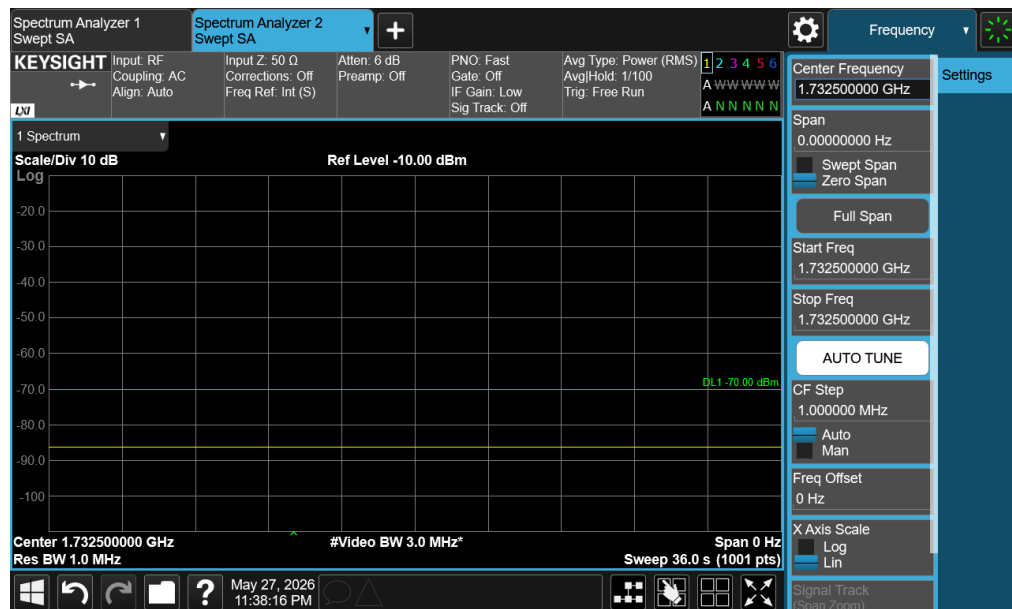
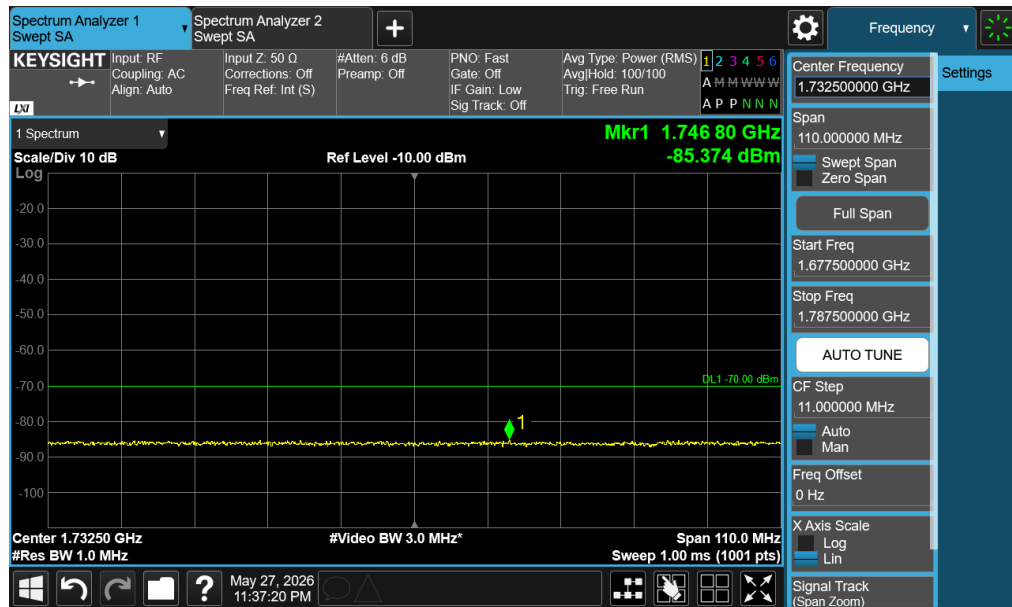
Remark:

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



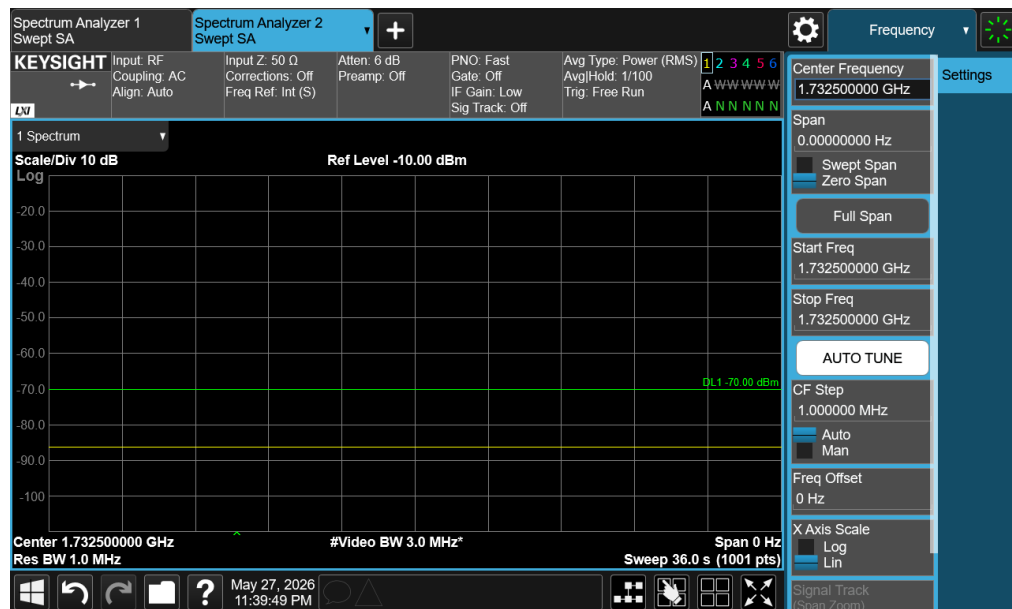
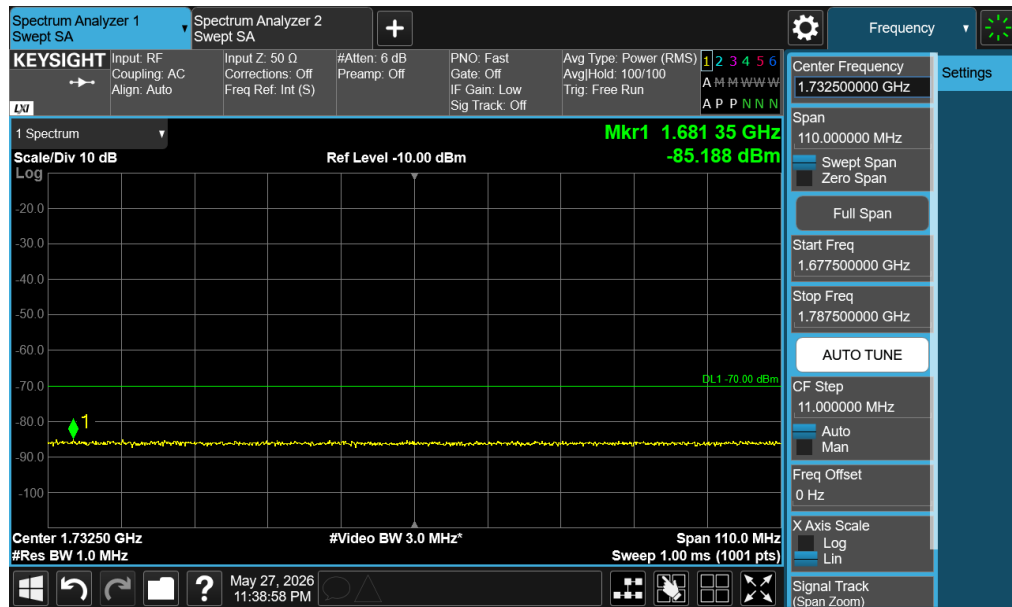
Remark:

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



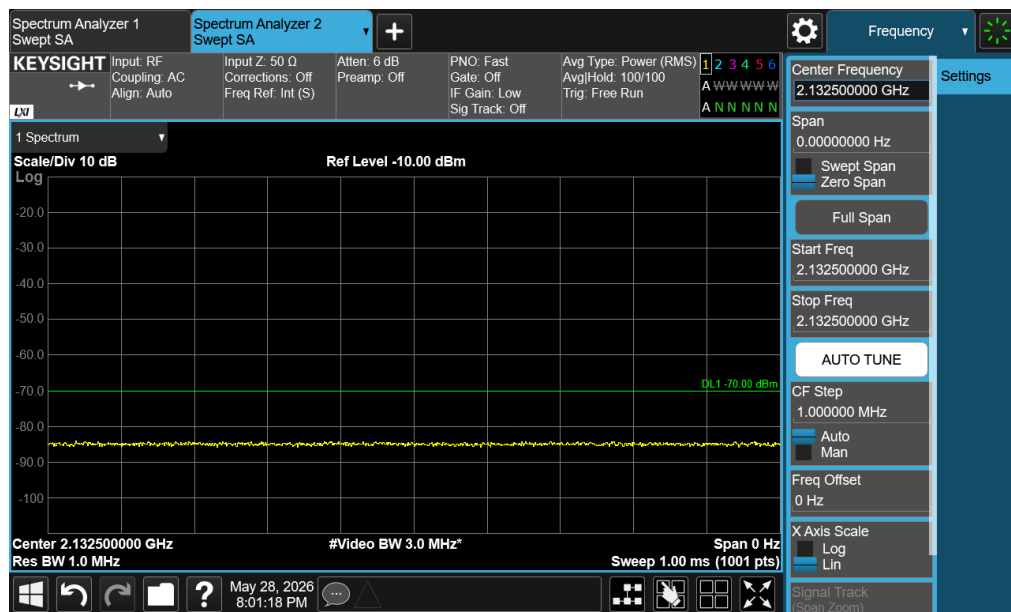
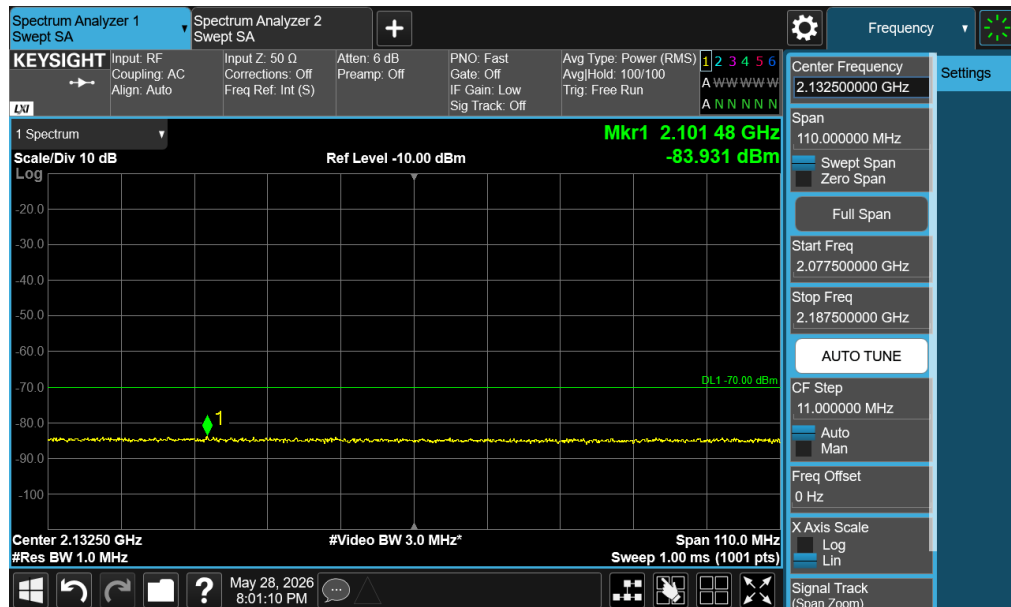
Remark:

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)



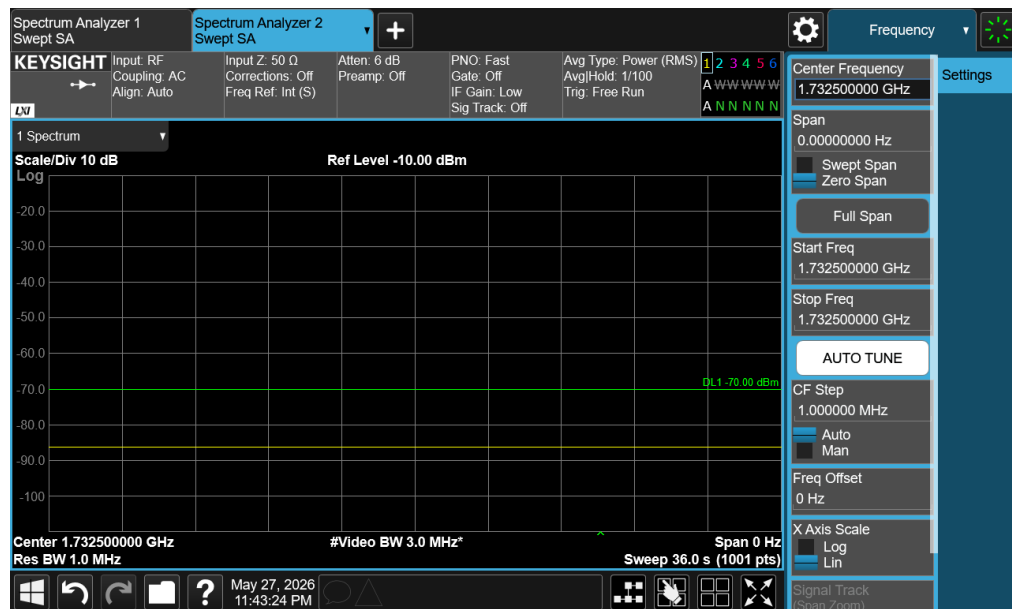
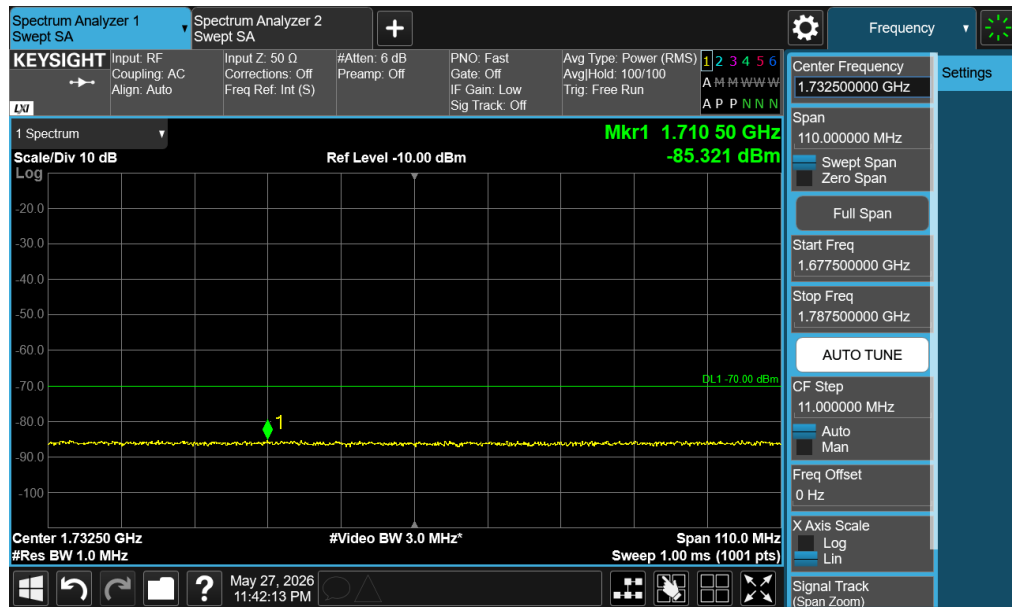
Remark:

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.



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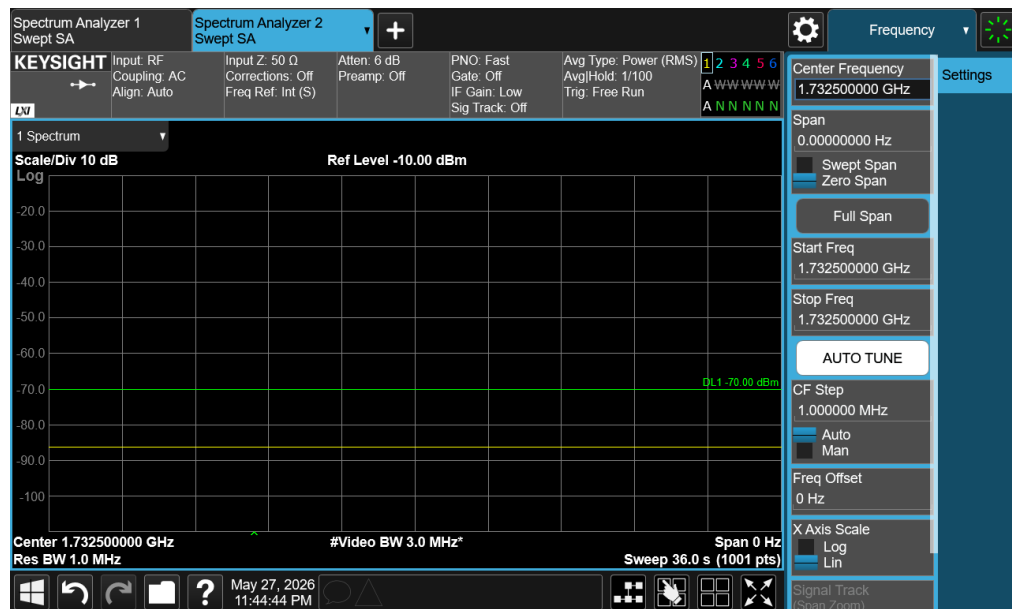
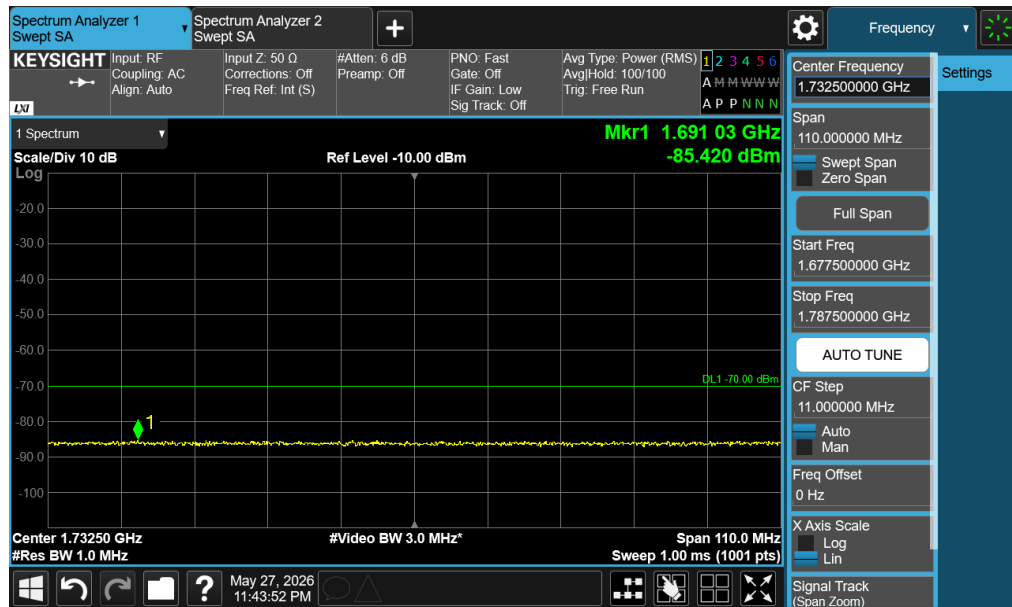
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Authorized CMRS Provider test

UL_Non-authorized CMRS provider signal (MCC/MCN: 311222)_ANT2



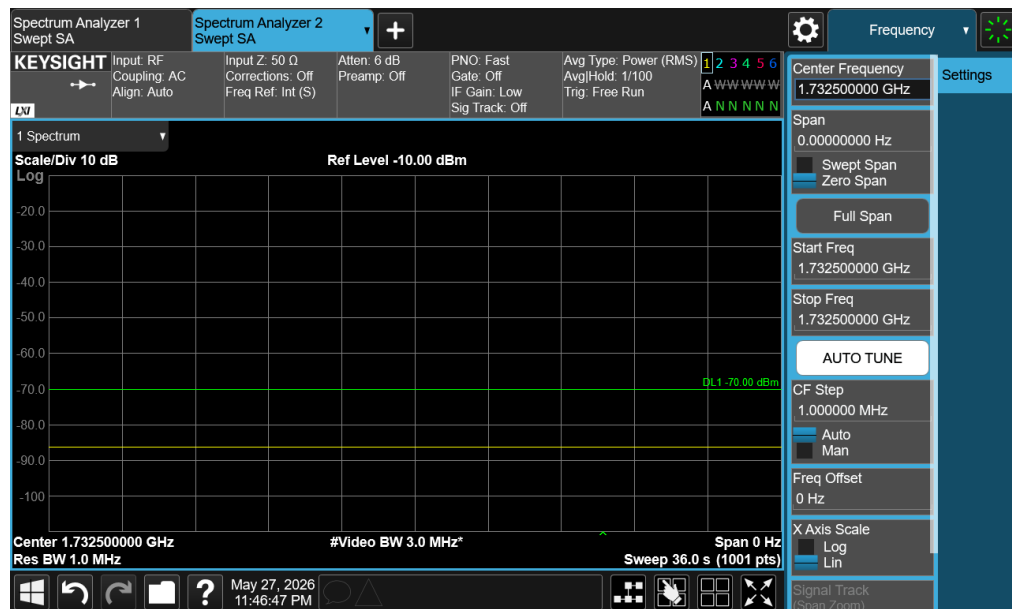
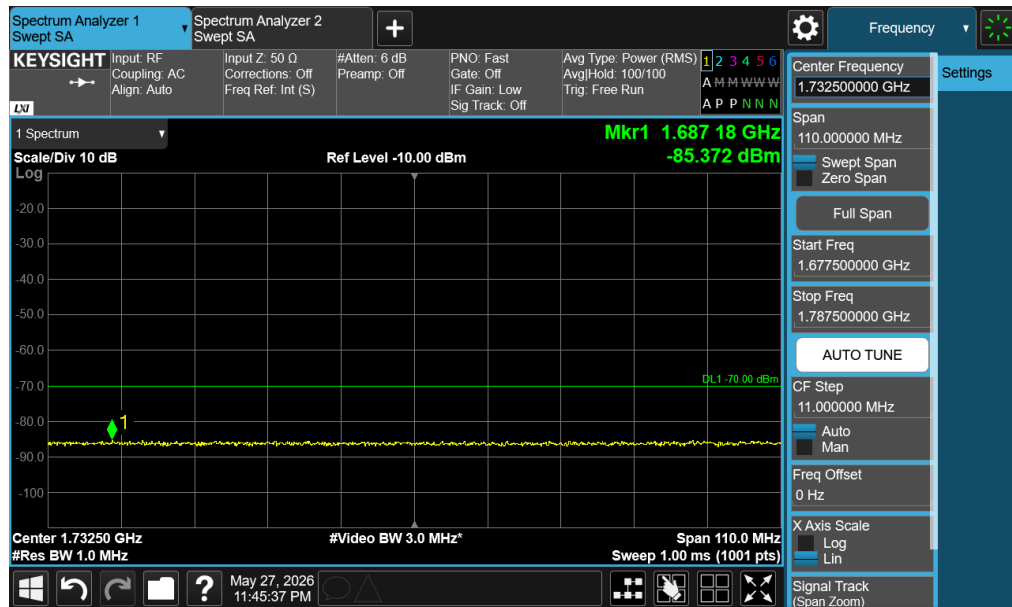
Remark:

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



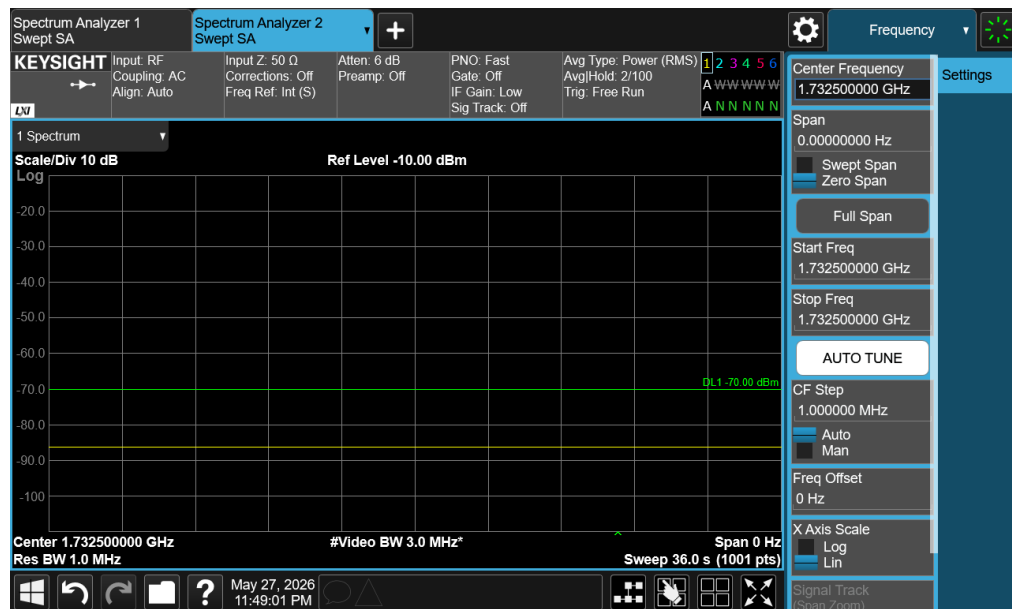
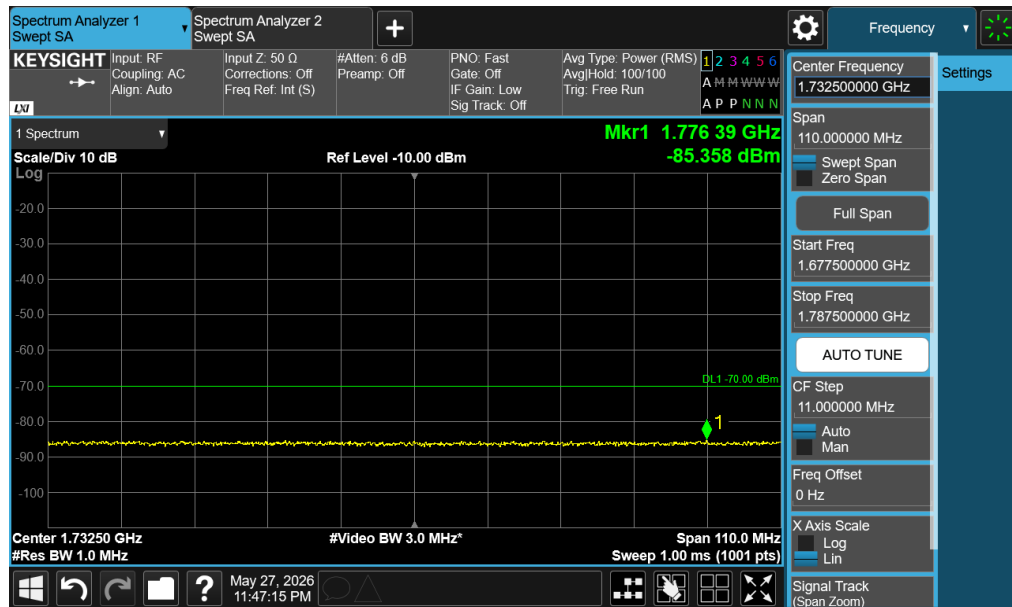
Remark:

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)_ANT4



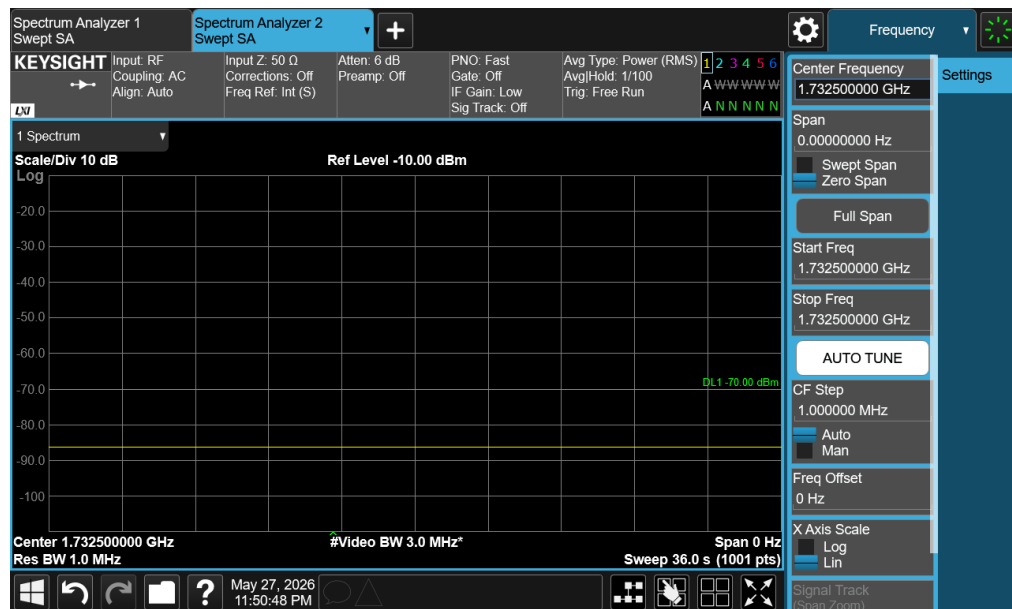
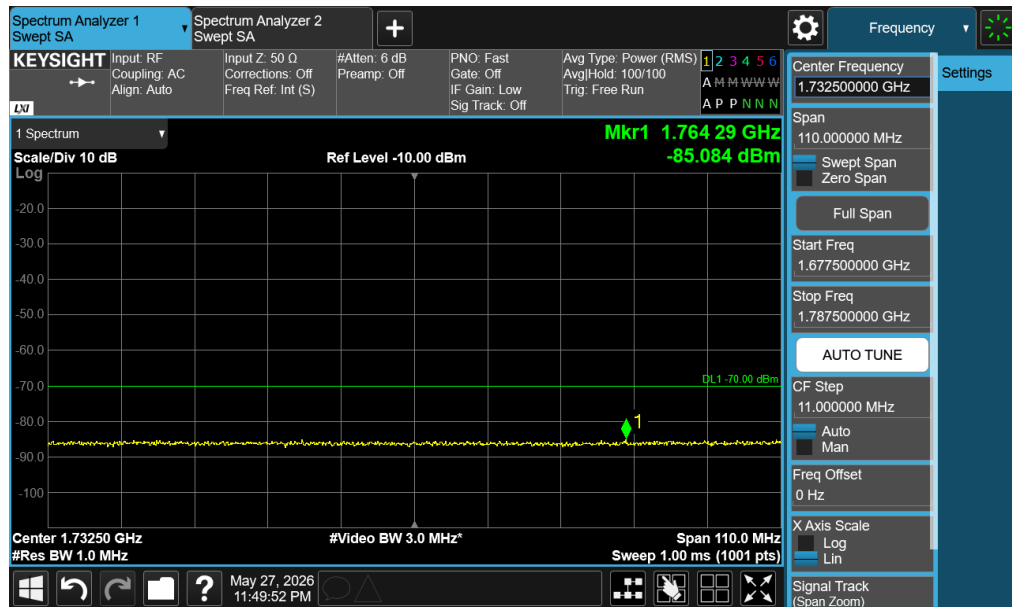
Remark:

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: 311222)_ANT5



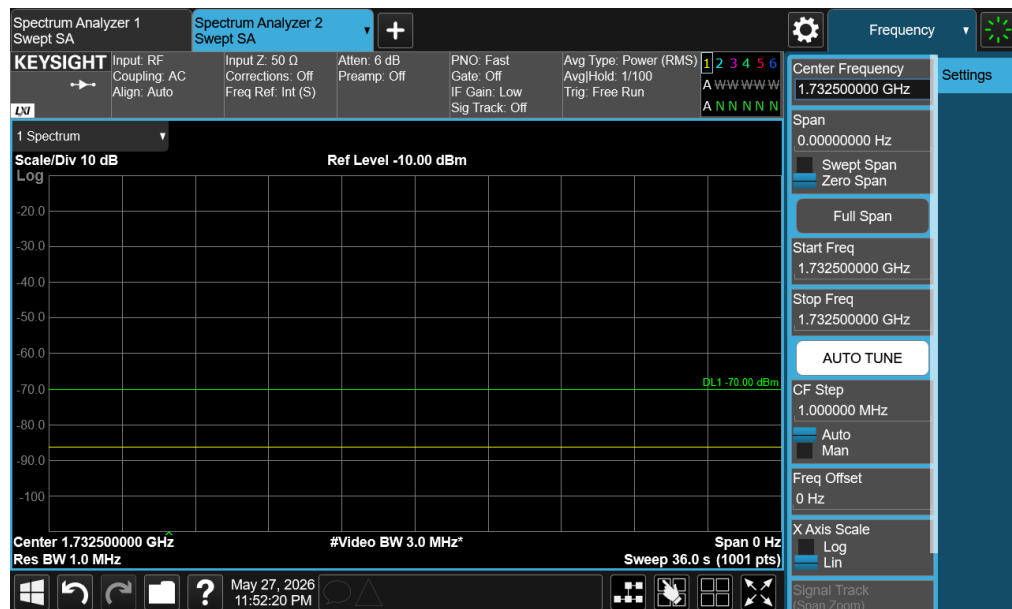
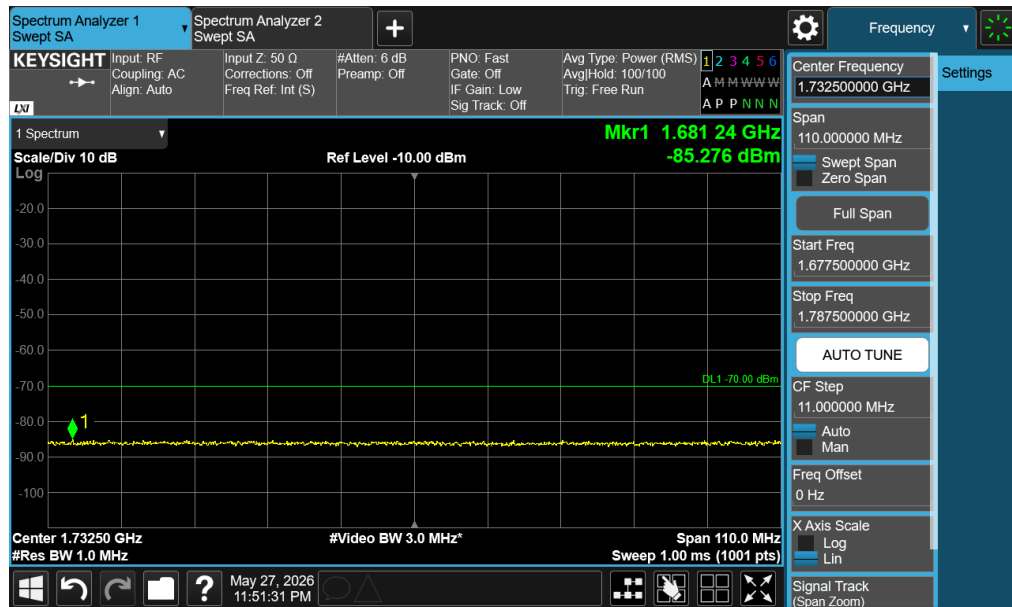
Remark:

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	-70.40	9.64	9.64	/	10	PASS
		GSM	-70.00	9.49	9.49			PASS
UL	ANT1	AWGN	-62.60	18.27	25.27	17	30	PASS
		GSM	-62.30	18.21	25.21			PASS
	ANT2	AWGN	-62.60	18.30	25.30			PASS
		GSM	-62.30	18.25	25.25			PASS
	ANT3	AWGN	-62.60	18.25	25.25			PASS
		GSM	-62.30	18.27	25.27			PASS
	ANT4	AWGN	-62.60	18.33	25.33			PASS
		GSM	-62.30	18.24	25.24			PASS
	ANT5	AWGN	-62.60	18.26	25.26			PASS
		GSM	-62.30	18.23	25.23			PASS
	ANT6	AWGN	-62.60	18.23	25.23			PASS
		GSM	-62.30	18.20	25.20			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	-42.20	9.45	PASS
		GSM	-42.40	9.50	PASS
UL	ANT1	AWGN	-34.20	18.11	PASS
		GSM	-33.90	17.98	PASS
	ANT2	AWGN	-34.20	18.22	PASS
		GSM	-33.90	18.17	PASS
	ANT3	AWGN	-34.20	18.15	PASS
		GSM	-33.90	18.18	PASS
	ANT4	AWGN	-34.20	18.20	PASS
		GSM	-33.90	18.21	PASS
	ANT5	AWGN	-34.20	18.32	PASS
		GSM	-33.90	18.26	PASS
	ANT6	AWGN	-34.20	18.31	PASS
		GSM	-33.90	18.26	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	-70.40	9.64	80.04	≤100	PASS
		GSM	-70.00	9.49	79.49		PASS
UL	ANT1	AWGN	-62.60	18.27	80.87		PASS
		GSM	-62.30	18.21	80.51		PASS
	ANT2	AWGN	-62.60	18.30	80.90		PASS
		GSM	-62.30	18.25	80.55		PASS
	ANT3	AWGN	-62.60	18.25	80.85		PASS
		GSM	-62.30	18.27	80.57		PASS
	ANT4	AWGN	-62.60	18.33	80.93		PASS
		GSM	-62.30	18.24	80.54		PASS
	ANT5	AWGN	-62.60	18.26	80.86		PASS
		GSM	-62.30	18.23	80.53		PASS
	ANT6	AWGN	-62.60	18.23	80.83		PASS
		GSM	-62.30	18.20	80.50		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	80.87	80.04	0.83	≤9	PASS
	GSM	80.51	79.49	1.02		PASS
ANT2	AWGN	80.90	80.04	0.86		PASS
	GSM	80.55	79.49	1.06		PASS
ANT3	AWGN	80.85	80.04	0.81		PASS
	GSM	80.57	79.49	1.08		PASS
ANT4	AWGN	80.93	80.04	0.89		PASS
	GSM	80.54	79.49	1.05		PASS
ANT5	AWGN	80.86	80.04	0.82		PASS
	GSM	80.53	79.49	1.04		PASS
ANT6	AWGN	80.83	80.04	0.79		PASS
	GSM	80.50	79.49	1.01		PASS



5 Intermodulation product

Intermodulation product							
Test Path	Test Port	Test Channel	Test Signal/ Signal Spacing (kHz)	Signal Level	Worst product test level (dBm)	Limit (dBm)	Verdict
DL	ANT	M	CW/600kHz	Pre-AGC	-40.03	≤-19	PASS
				10dB above AGC	-39.55		PASS
UL	ANT1	M	CW/600kHz	Pre-AGC	-32.99	≤-19	PASS
				10dB above AGC	-32.48		PASS

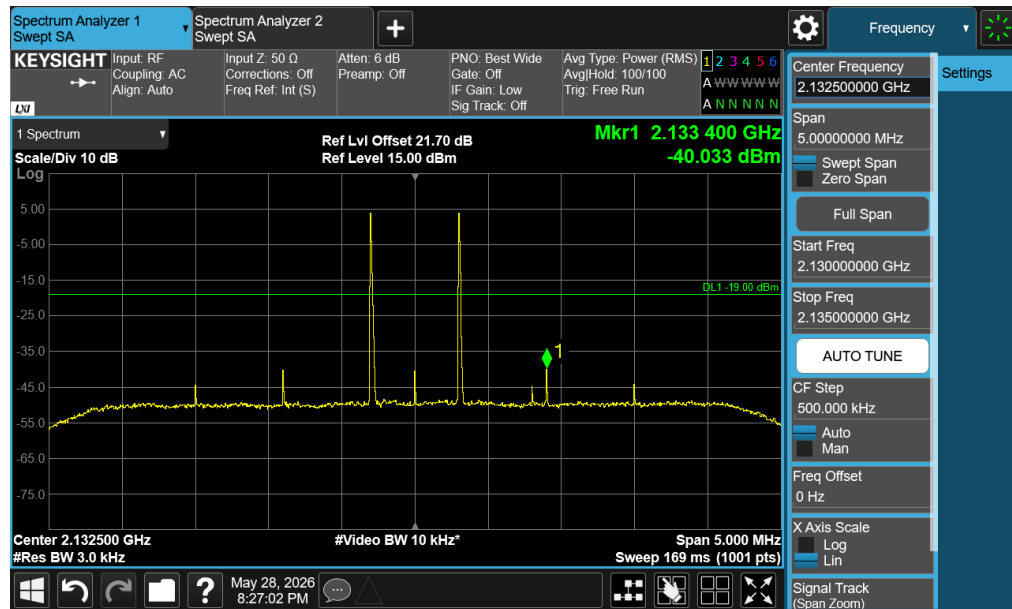


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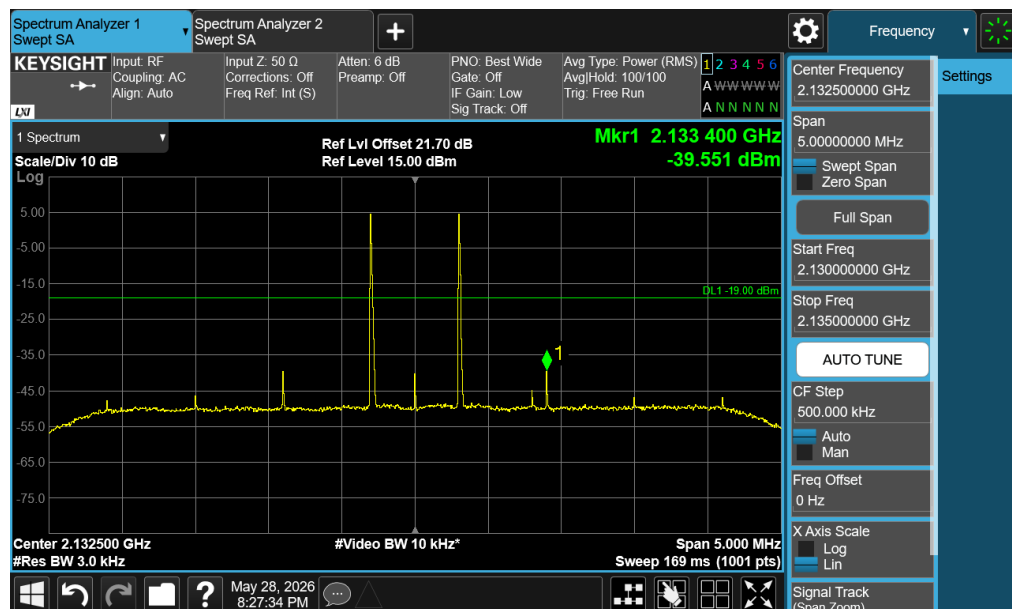
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Intermodulation product

DL_pre-AGC_MT1

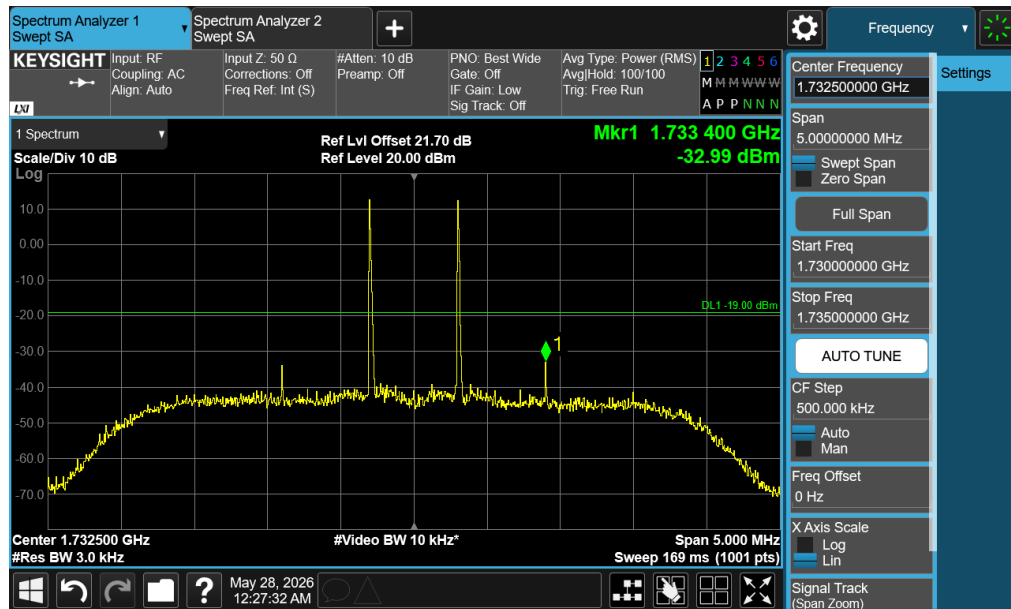


DL_10dB above AGC_MT1

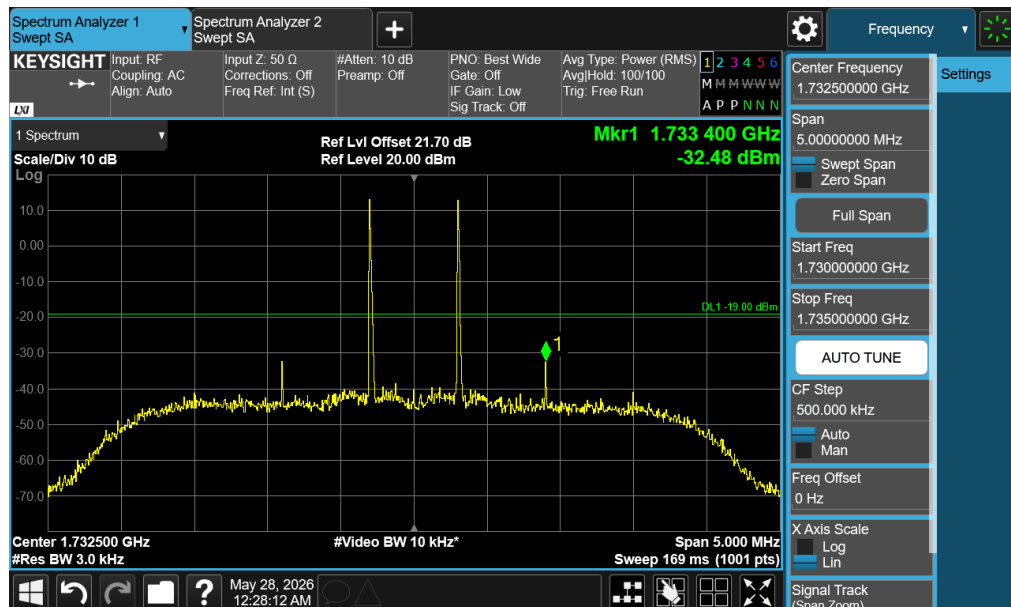


Intermodulation product

UL_pre-AGC_DT



UL_10dB above AGC_DT



6 Out-of-band emissions

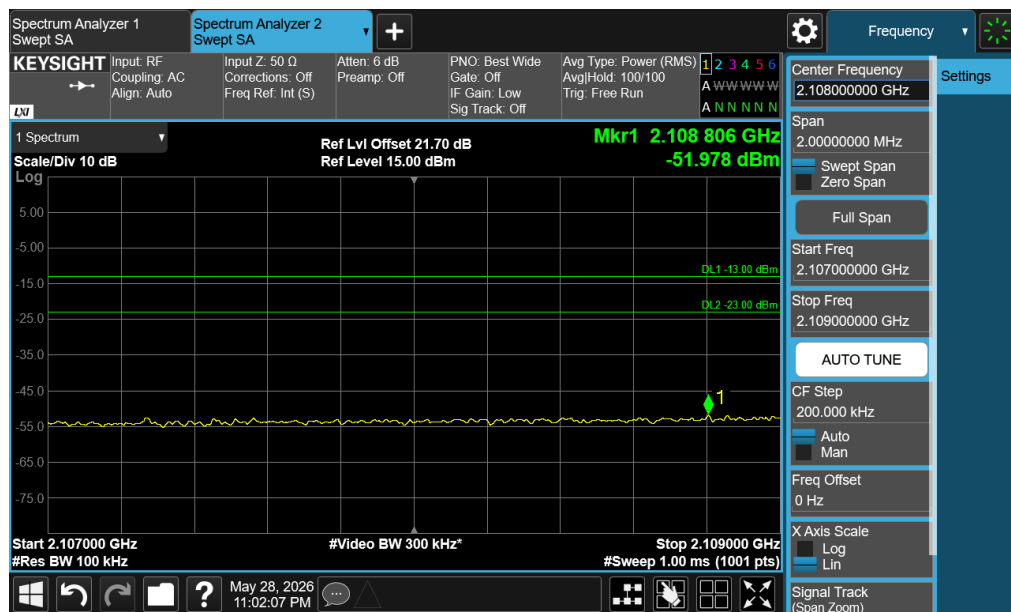
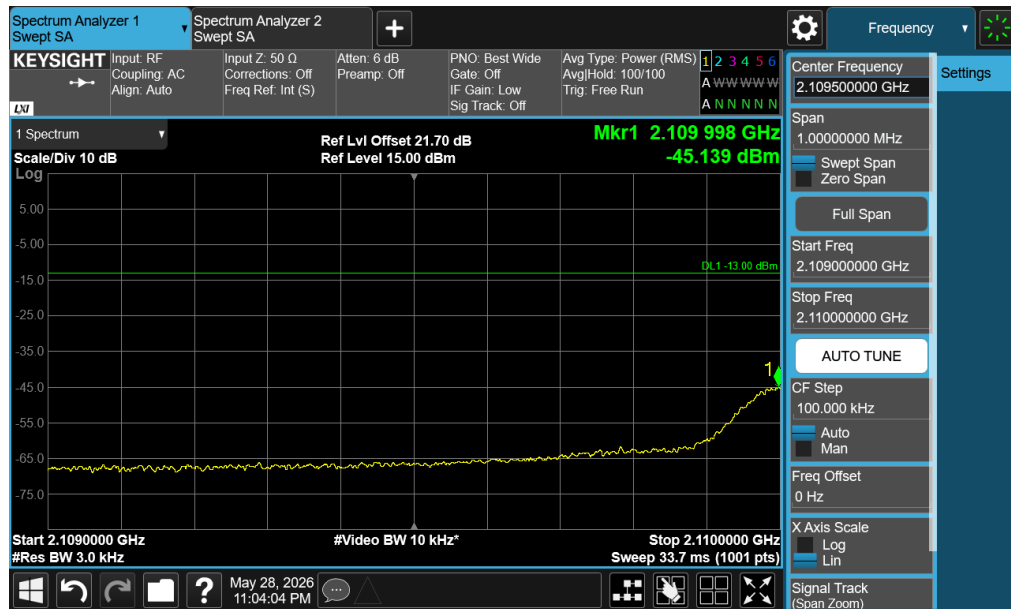
Out-of-band emissions							
Test Path	Test Port	Test Signal	Band Edge	Signal Level	Worst conducted test level (dBm)	Limit (dBm)	Verdict
DL	ANT	GSM	Lower	Pre-AGC	-41.97**	≤-13	PASS
				10dB above AGC	-41.84**		PASS
			Upper	Pre-AGC	-40.60**		PASS
				10dB above AGC	-41.28**		PASS
		1.25MHz AWGN	Lower	Pre-AGC	-35.33	≤-13	PASS
				10dB above AGC	-35.15		PASS
			Upper	Pre-AGC	-35.89		PASS
				10dB above AGC	-36.09		PASS
		4.1MHz AWGN	Lower	Pre-AGC	-28.15	≤-13	PASS
				10dB above AGC	-28.01		PASS
			Upper	Pre-AGC	-26.91		PASS
				10dB above AGC	-27.95		PASS
UL	ANT1	GSM	Lower	Pre-AGC	-49.39**	≤-13	PASS
				10dB above AGC	-46.30**		PASS
			Upper	Pre-AGC	-40.37**		PASS
				10dB above AGC	-39.78**		PASS
		1.25MHz AWGN	Lower	Pre-AGC	-38.49	≤-13	PASS
				10dB above AGC	-35.95		PASS
			Upper	Pre-AGC	-32.54		PASS
				10dB above AGC	-31.98		PASS
		4.1MHz AWGN	Lower	Pre-AGC	-21.22	≤-13	PASS
				10dB above AGC	-20.03		PASS
			Upper	Pre-AGC	-29.51		PASS
				10dB above AGC	-26.94		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



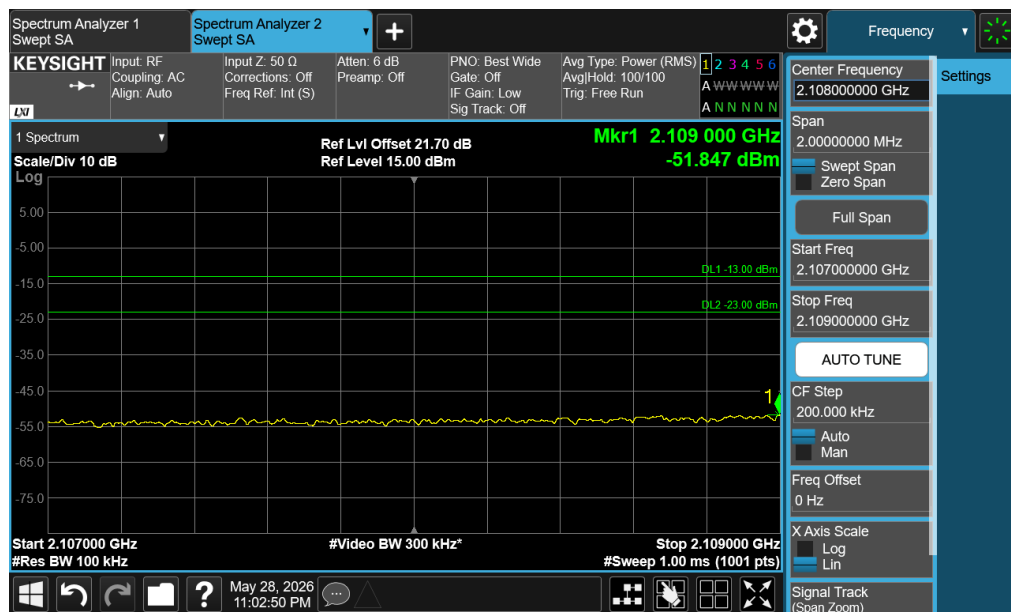
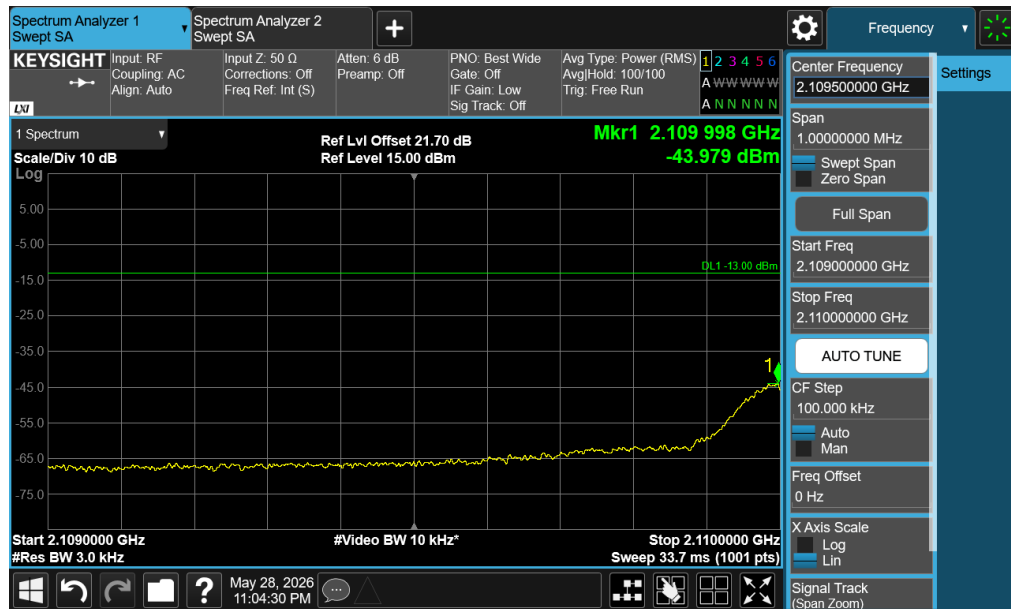
Out-of-band emissions

DL_GSM input_Lower band edge_pre-AGC



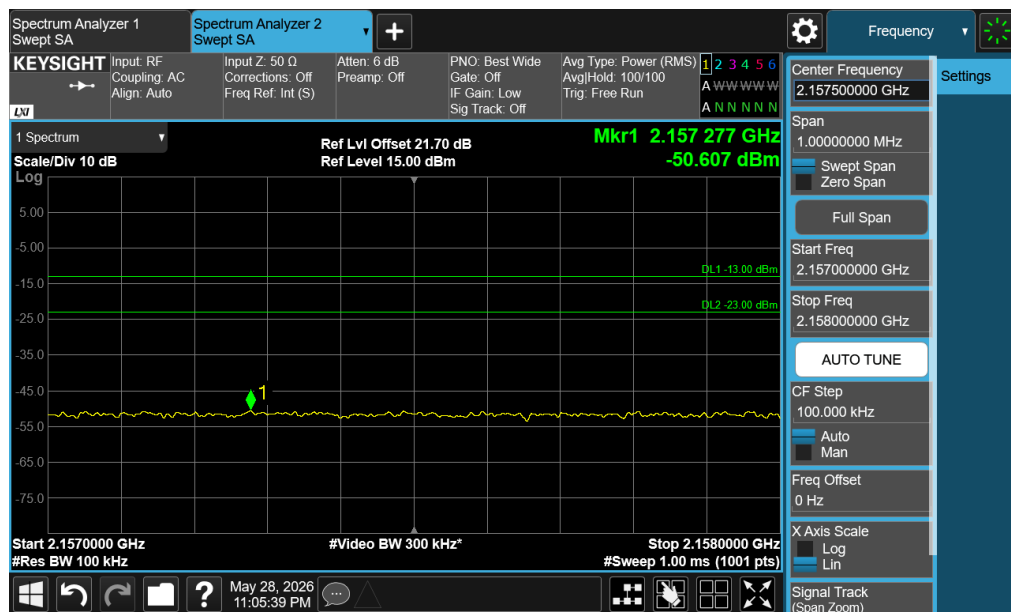
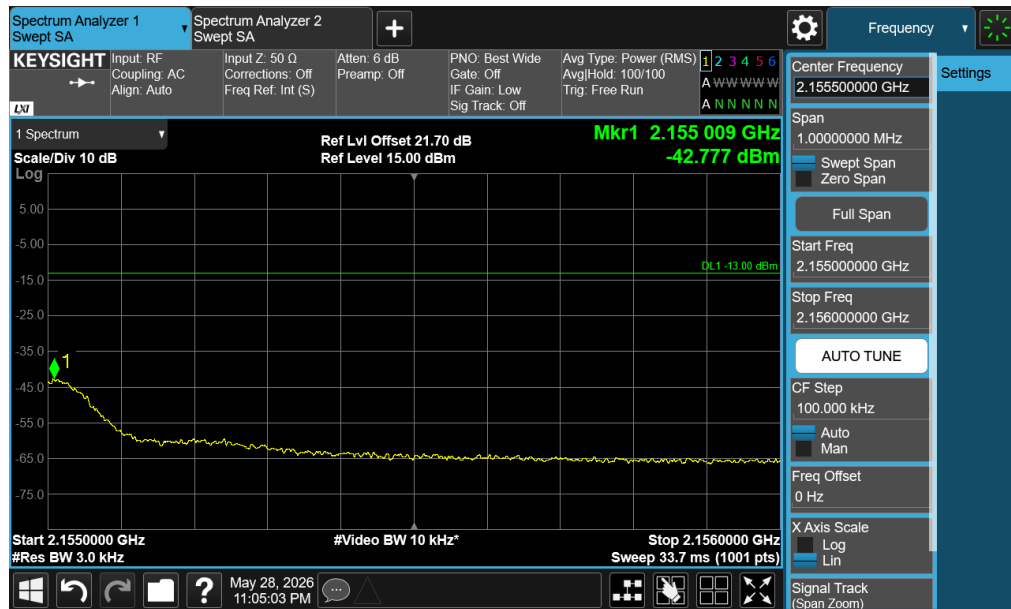
Out-of-band emissions

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

