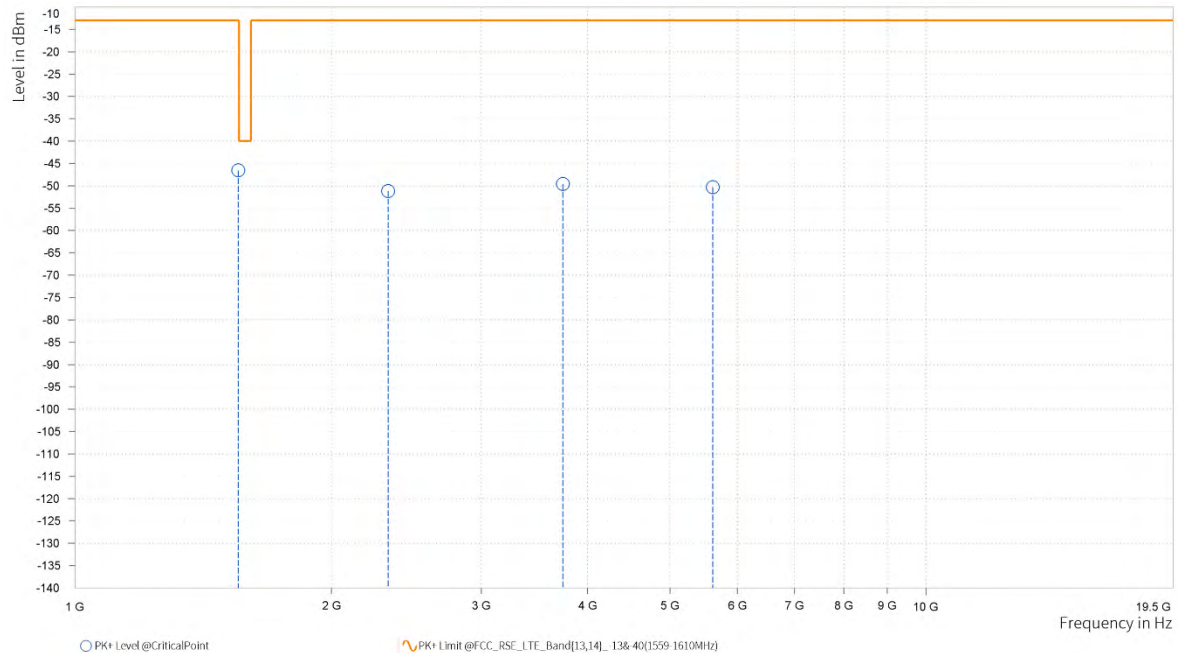




CHANNEL BANDWIDTH	20MHz+10MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-46.55	-13.00	33.55	22.38	H	0.9	2.00
3	2,332.500	-51.15	-13.00	38.15	19.37	H	359	2.00
4	3,742.000	-49.58	-13.00	36.58	21.35	H	270.2	1.00
4	5,613.000	-50.34	-13.00	37.34	24.60	H	0.9	2.00

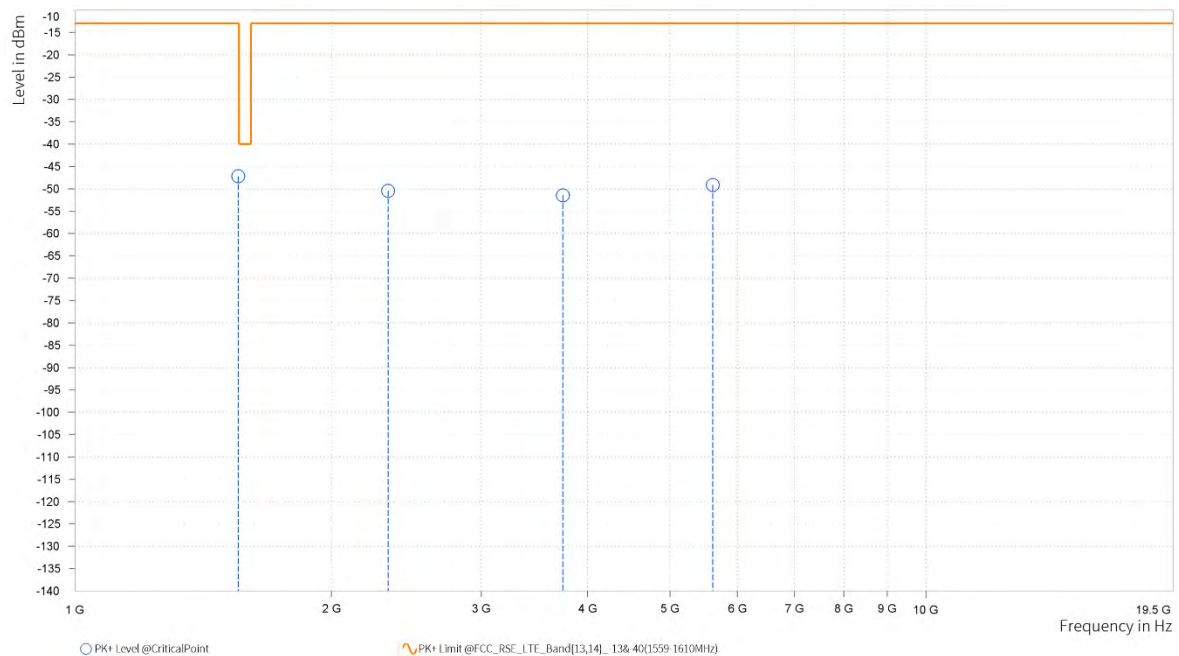




CHANNEL BANDWIDTH	20MHz+10MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-47.19	-13.00	34.19	23.72	V	326	2.00
3	2,332.500	-50.43	-13.00	37.43	19.96	V	194.5	1.00
4	3,742.000	-51.45	-13.00	38.45	22.00	V	23.8	2.00
4	5,613.000	-49.18	-13.00	36.18	25.05	V	359	1.00

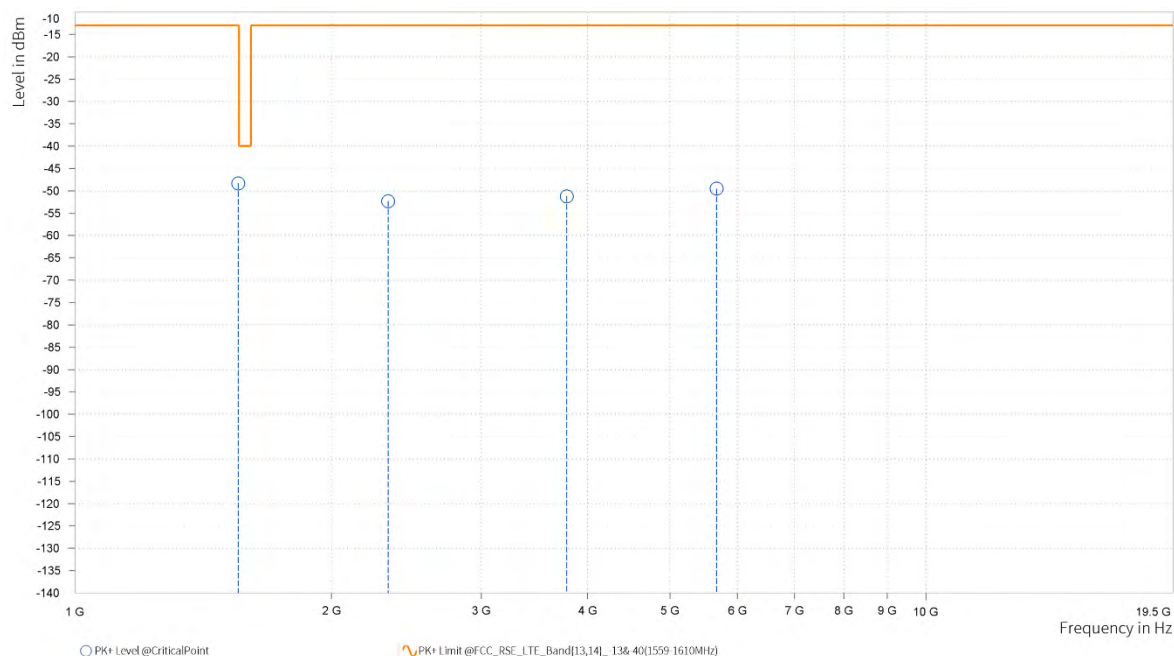




CHANNEL BANDWIDTH	20MHz+10MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-48.33	-13.00	35.33	22.38	H	359	1.00
3	2,332.500	-52.32	-13.00	39.32	19.37	H	359	2.00
4	3,782.000	-51.23	-13.00	38.23	22.07	H	265.2	2.00
4	5,673.000	-49.54	-13.00	36.54	24.94	H	359	1.00

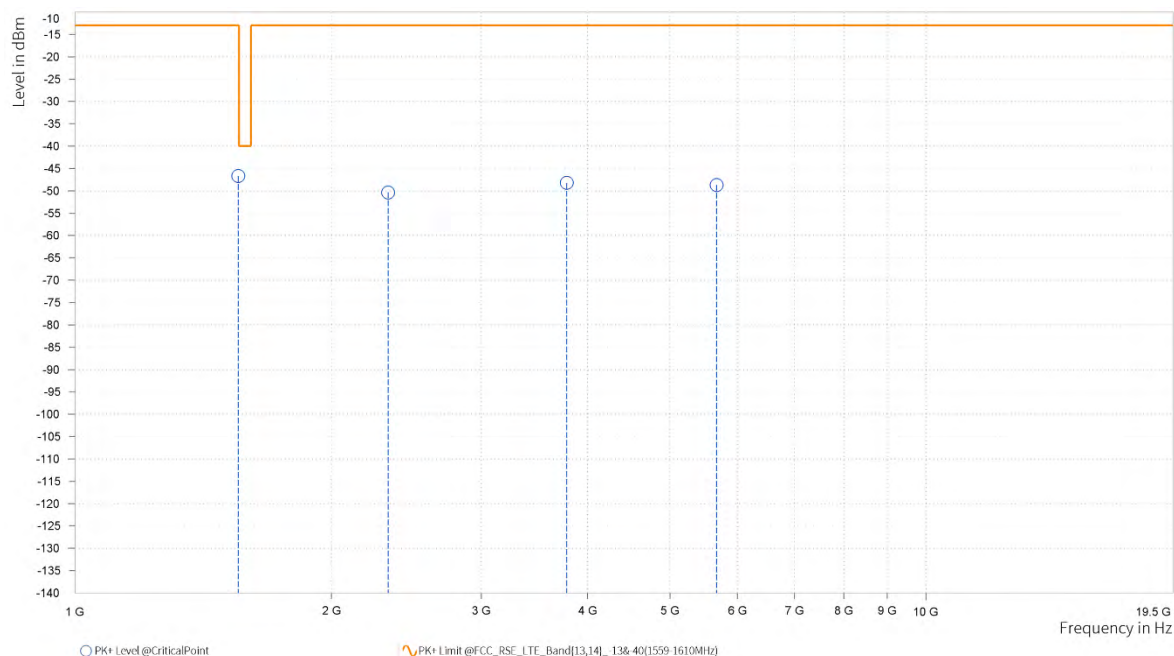




CHANNEL BANDWIDTH	20MHz+10MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-46.69	-13.00	33.69	23.72	V	324.7	2.00
3	2,332.500	-50.36	-13.00	37.36	19.96	V	0.9	2.00
4	3,782.000	-48.23	-13.00	35.23	22.28	V	359.1	1.00
4	5,673.000	-48.68	-13.00	35.68	25.34	V	265.3	2.00

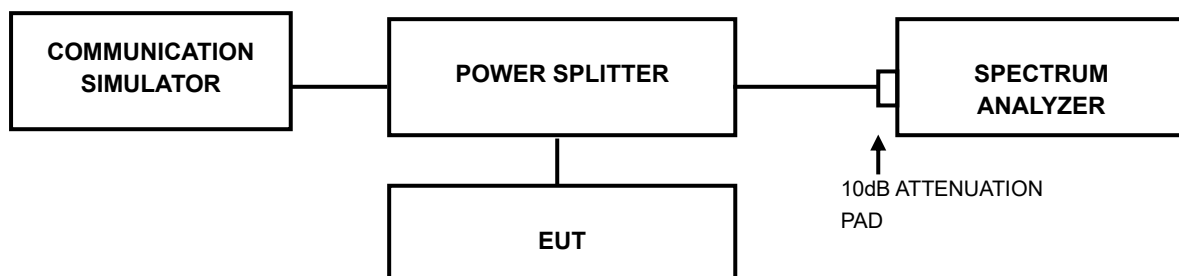


3.7 PEAK TO AVERAGE RATIO

3.7.1 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

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

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

3.7.4 TEST RESULTS

Please Refer to Appendix of this test report.

4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

If you have any comments, please feel free to contact us at the following:

Suzhou EMC/RF Lab:

Tel: +86 (0557) 368 1008



5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

6 Appendix

LTE BAND 7

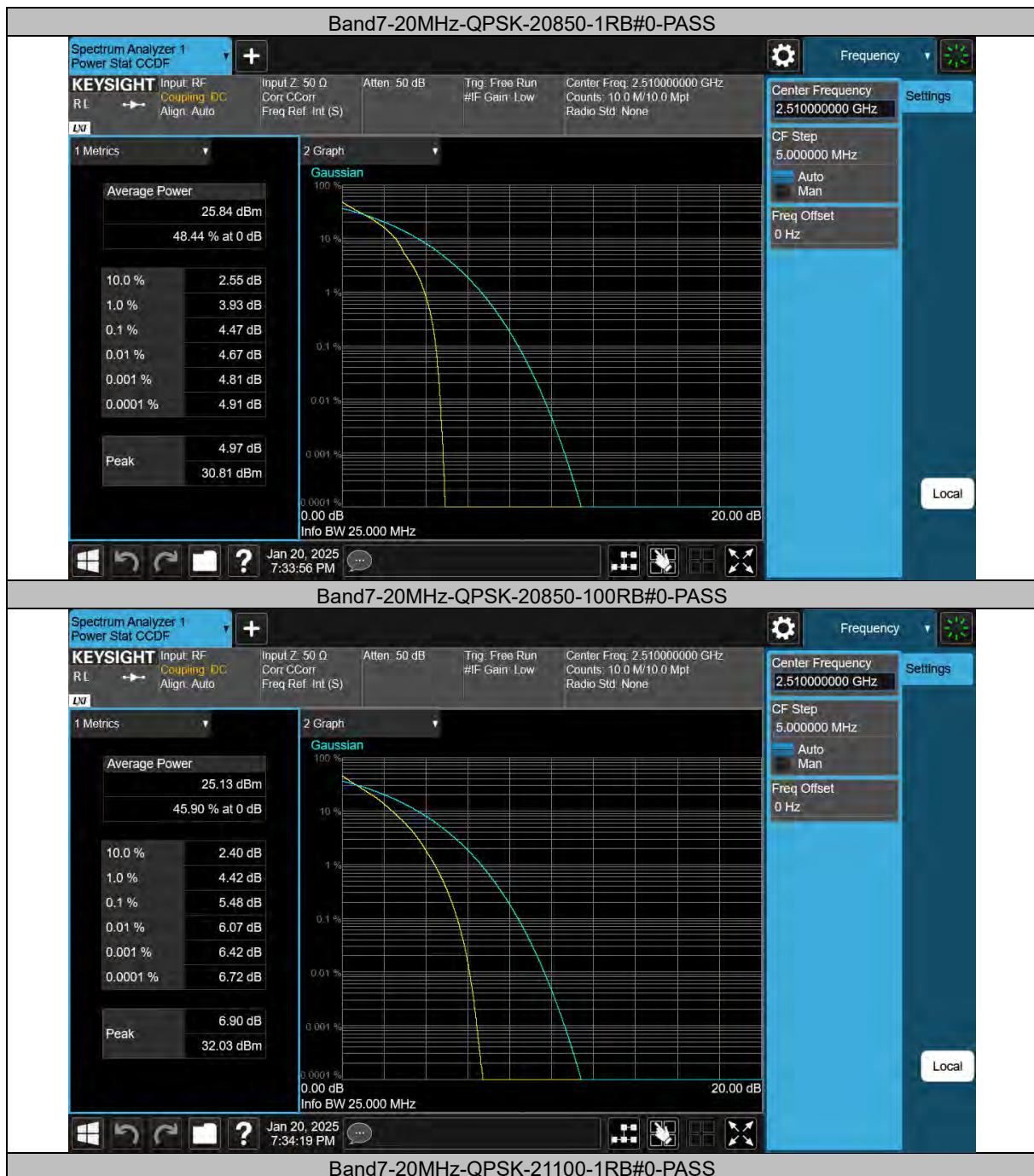
PEAK-TO-AVERAGE RATIO(CCDF)

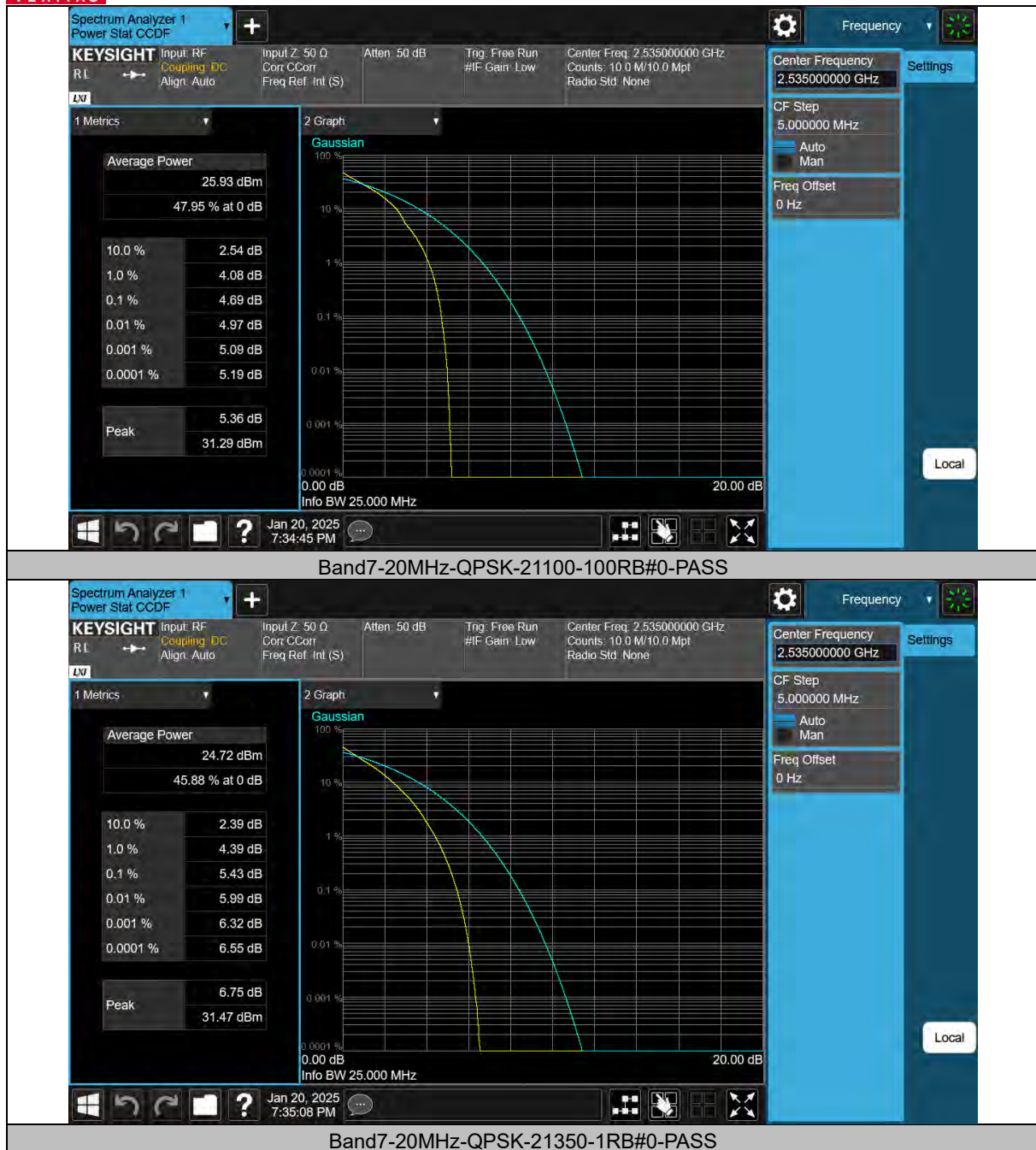
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band7	20MHz	QPSK	20850	1RB#0	4.47	13	PASS
Band7	20MHz	QPSK	20850	100RB#0	5.48	13	PASS
Band7	20MHz	QPSK	21100	1RB#0	4.69	13	PASS
Band7	20MHz	QPSK	21100	100RB#0	5.43	13	PASS
Band7	20MHz	QPSK	21350	1RB#0	4.30	13	PASS
Band7	20MHz	QPSK	21350	100RB#0	5.42	13	PASS
Band7	20MHz	16QAM	20850	1RB#0	5.38	13	PASS
Band7	20MHz	16QAM	20850	100RB#0	6.29	13	PASS
Band7	20MHz	16QAM	21100	1RB#0	5.62	13	PASS
Band7	20MHz	16QAM	21100	100RB#0	6.22	13	PASS
Band7	20MHz	16QAM	21350	1RB#0	5.21	13	PASS
Band7	20MHz	16QAM	21350	100RB#0	6.21	13	PASS



Test Graphs







Band7-20MHz-QPSK-21350-100RB#0-PASS



Band7-20MHz-16QAM-20850-1RB#0-PASS



Band7-20MHz-16QAM-20850-100RB#0-PASS



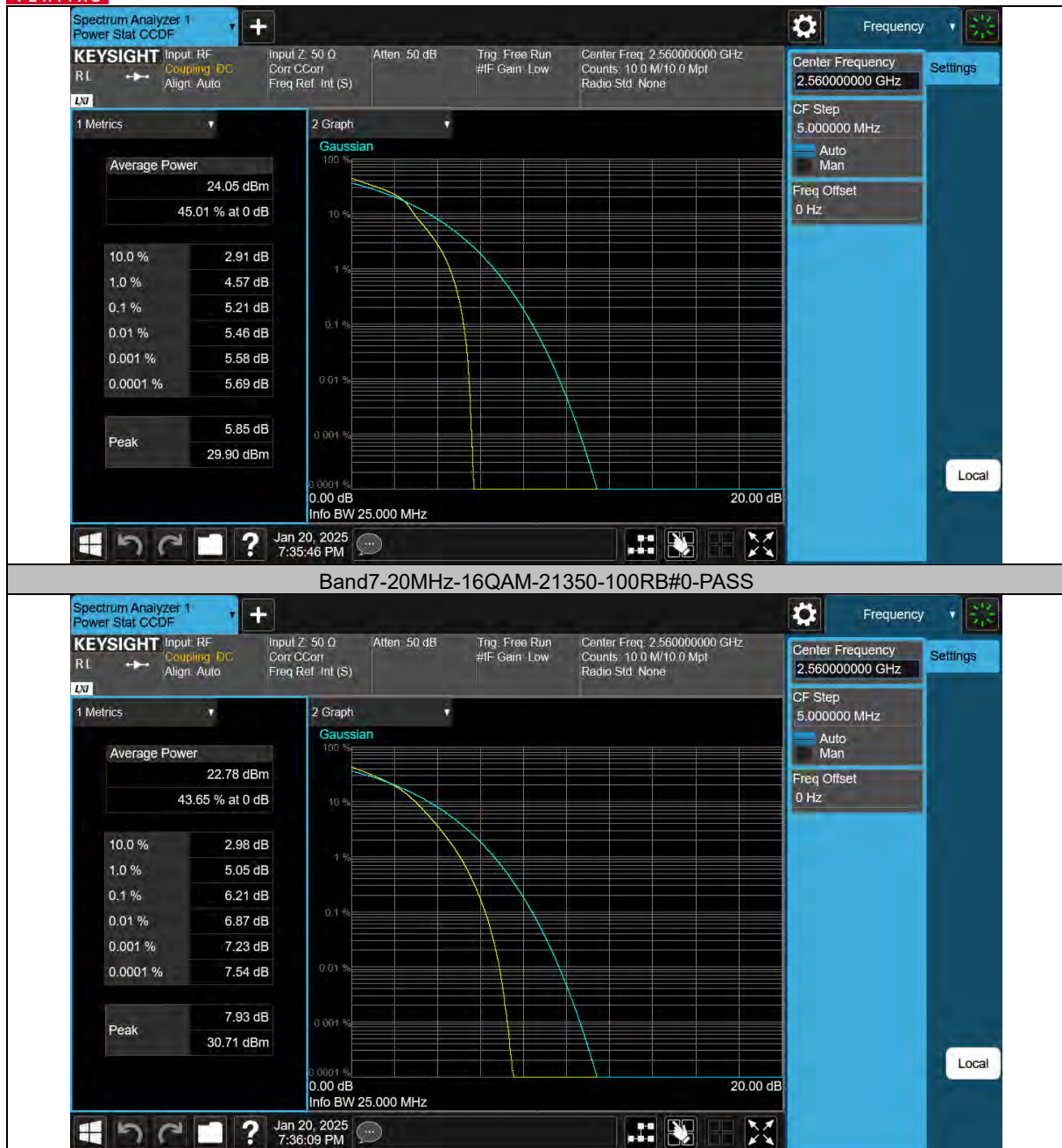
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Band7-20MHz-16QAM-21100-100RB#0-PASS



Band7-20MHz-16QAM-21350-1RB#0-PASS



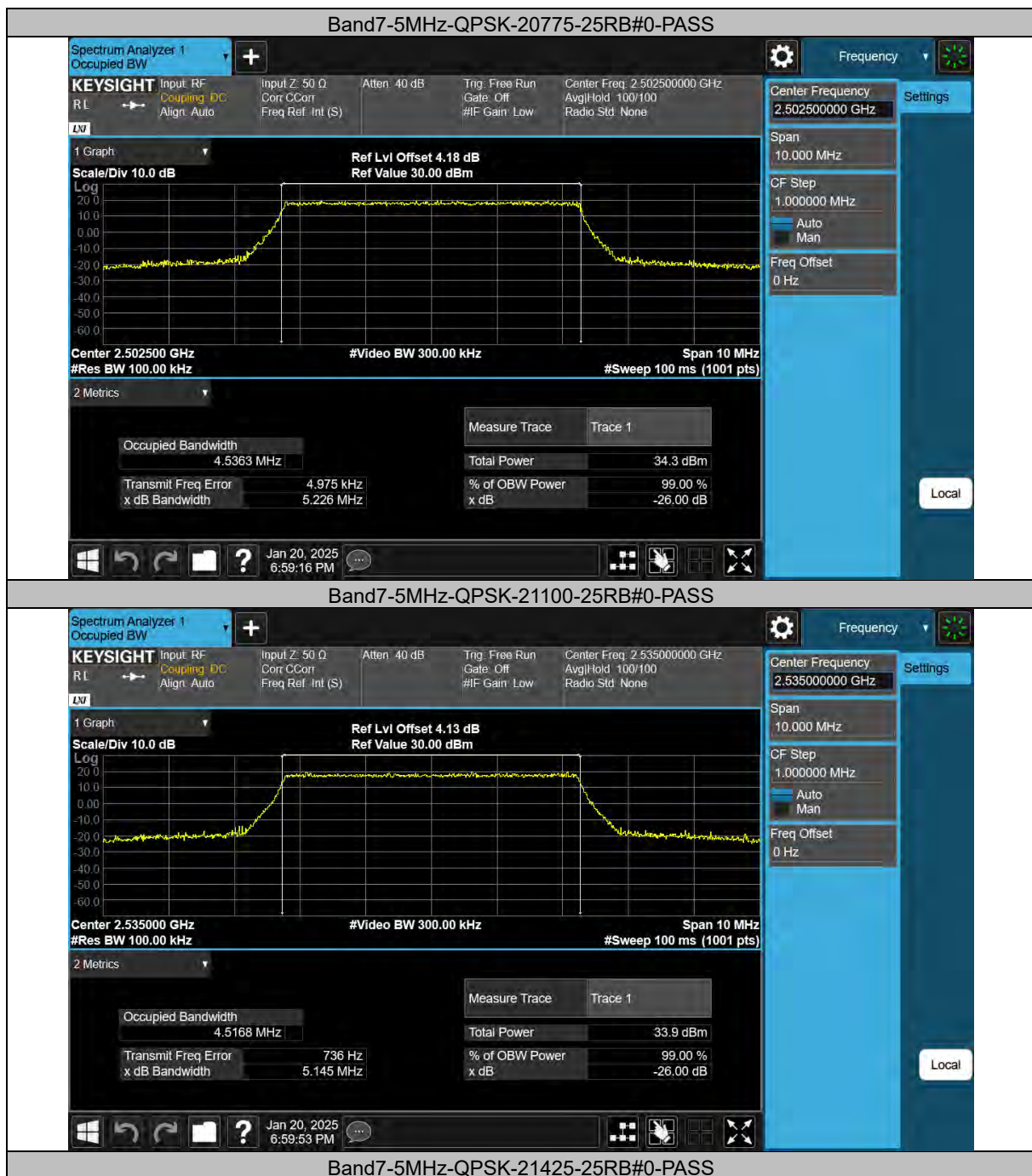
26DB BANDWIDTH AND OCCUPIED BANDWIDTH

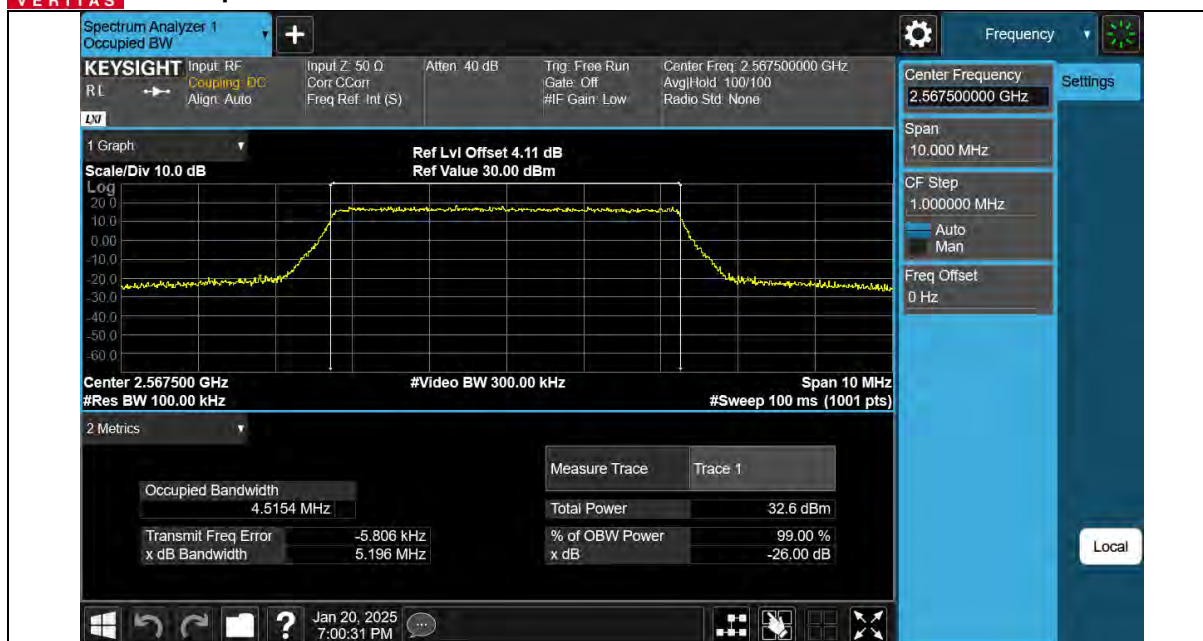
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band7	5MHz	QPSK	20775	25RB#0	4.5363	5.226	PASS
Band7	5MHz	QPSK	21100	25RB#0	4.5168	5.145	PASS
Band7	5MHz	QPSK	21425	25RB#0	4.5154	5.196	PASS
Band7	5MHz	16QAM	20775	25RB#0	4.5224	5.196	PASS
Band7	5MHz	16QAM	21100	25RB#0	4.5330	5.158	PASS
Band7	5MHz	16QAM	21425	25RB#0	4.5278	5.156	PASS
Band7	10MHz	QPSK	20800	50RB#0	9.0248	10.11	PASS
Band7	10MHz	QPSK	21100	50RB#0	9.0229	10.15	PASS
Band7	10MHz	QPSK	21400	50RB#0	9.0384	10.04	PASS
Band7	10MHz	16QAM	20800	50RB#0	9.0118	10.06	PASS
Band7	10MHz	16QAM	21100	50RB#0	9.0026	10.02	PASS
Band7	10MHz	16QAM	21400	50RB#0	9.0179	10.10	PASS
Band7	15MHz	QPSK	20825	75RB#0	13.499	15.13	PASS
Band7	15MHz	QPSK	21100	75RB#0	13.496	14.99	PASS
Band7	15MHz	QPSK	21375	75RB#0	13.508	15.06	PASS
Band7	15MHz	16QAM	20825	75RB#0	13.500	15.01	PASS
Band7	15MHz	16QAM	21100	75RB#0	13.492	14.91	PASS
Band7	15MHz	16QAM	21375	75RB#0	13.497	14.93	PASS
Band7	20MHz	QPSK	20850	100RB#0	17.980	19.86	PASS
Band7	20MHz	QPSK	21100	100RB#0	17.979	19.79	PASS
Band7	20MHz	QPSK	21350	100RB#0	18.006	19.78	PASS
Band7	20MHz	16QAM	20850	100RB#0	18.004	19.96	PASS
Band7	20MHz	16QAM	21100	100RB#0	18.010	19.95	PASS
Band7	20MHz	16QAM	21350	100RB#0	17.997	19.75	PASS

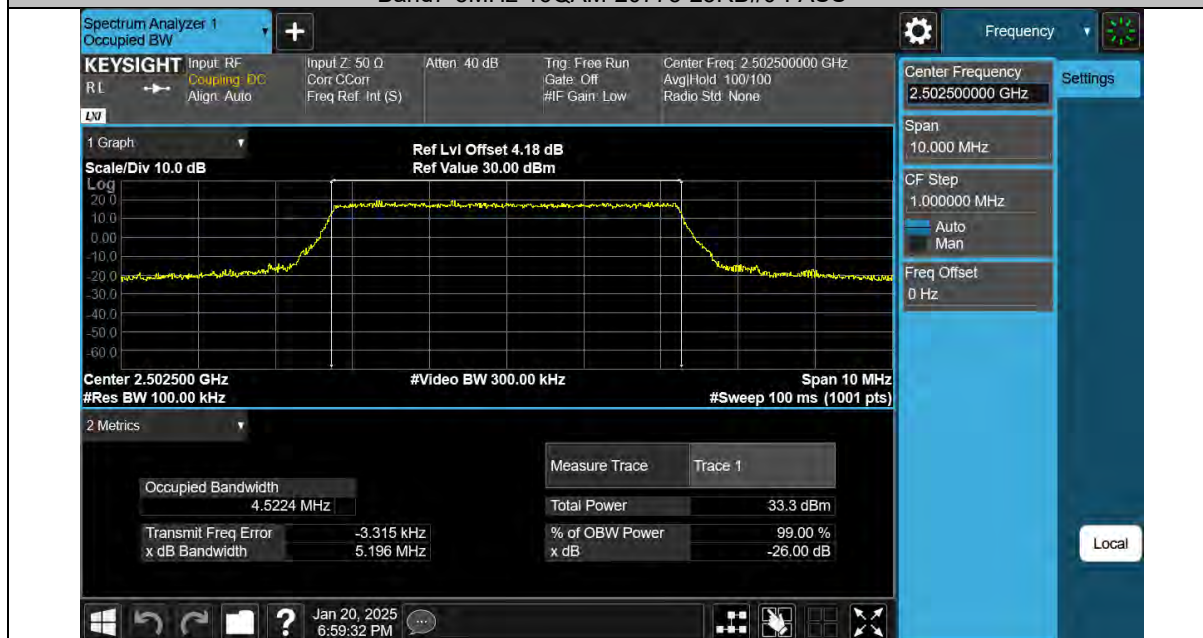


Test Graphs





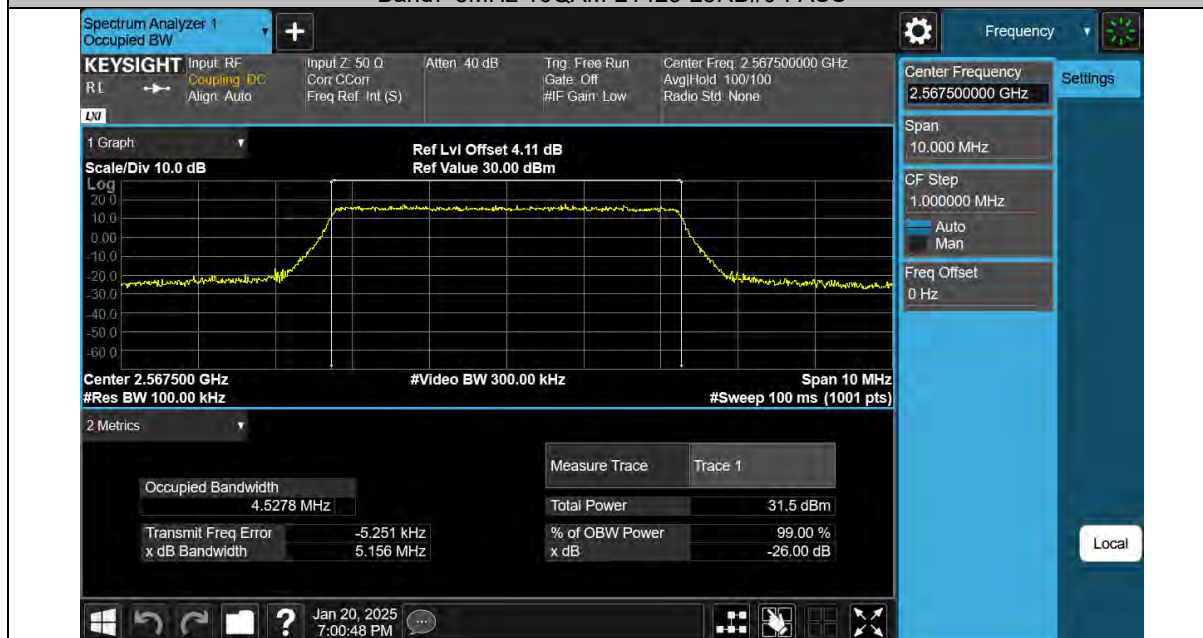
Band7-5MHz-16QAM-20775-25RB#0-PASS



Band7-5MHz-16QAM-21100-25RB#0-PASS



Band7-5MHz-16QAM-21425-25RB#0-PASS



Band7-10MHz-QPSK-20800-50RB#0-PASS





Band7-10MHz-16QAM-20800-50RB#0-PASS



Band7-10MHz-16QAM-21100-50RB#0-PASS



Band7-10MHz-16QAM-21400-50RB#0-PASS



Band7-15MHz-QPSK-20825-75RB#0-PASS



Band7-15MHz-QPSK-21100-75RB#0-PASS



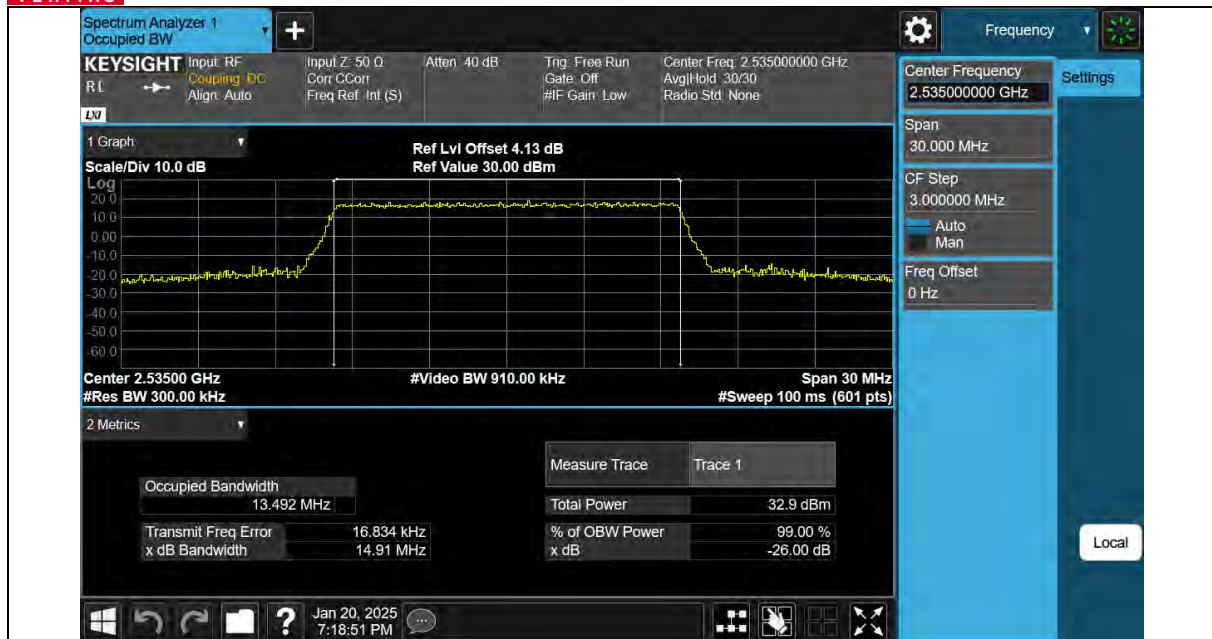
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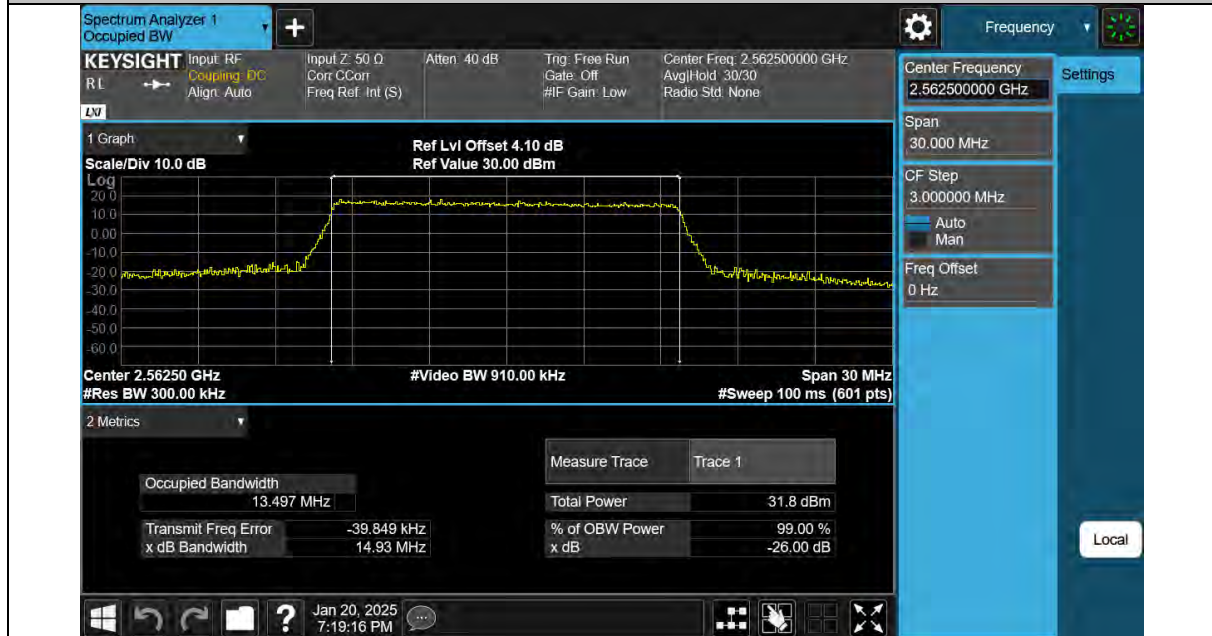
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Band7-15MHz-16QAM-21100-75RB#0-PASS



Band7-15MHz-16QAM-21375-75RB#0-PASS



Band7-20MHz-QPSK-20850-100RB#0-PASS



Band7-20MHz-QPSK-21100-100RB#0-PASS



Band7-20MHz-QPSK-21350-100RB#0-PASS



Band7-20MHz-16QAM-20850-100RB#0-PASS



Band7-20MHz-16QAM-21100-100RB#0-PASS



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Test Report No.: PSU-NQN2412090110RF03





BAND EDGE

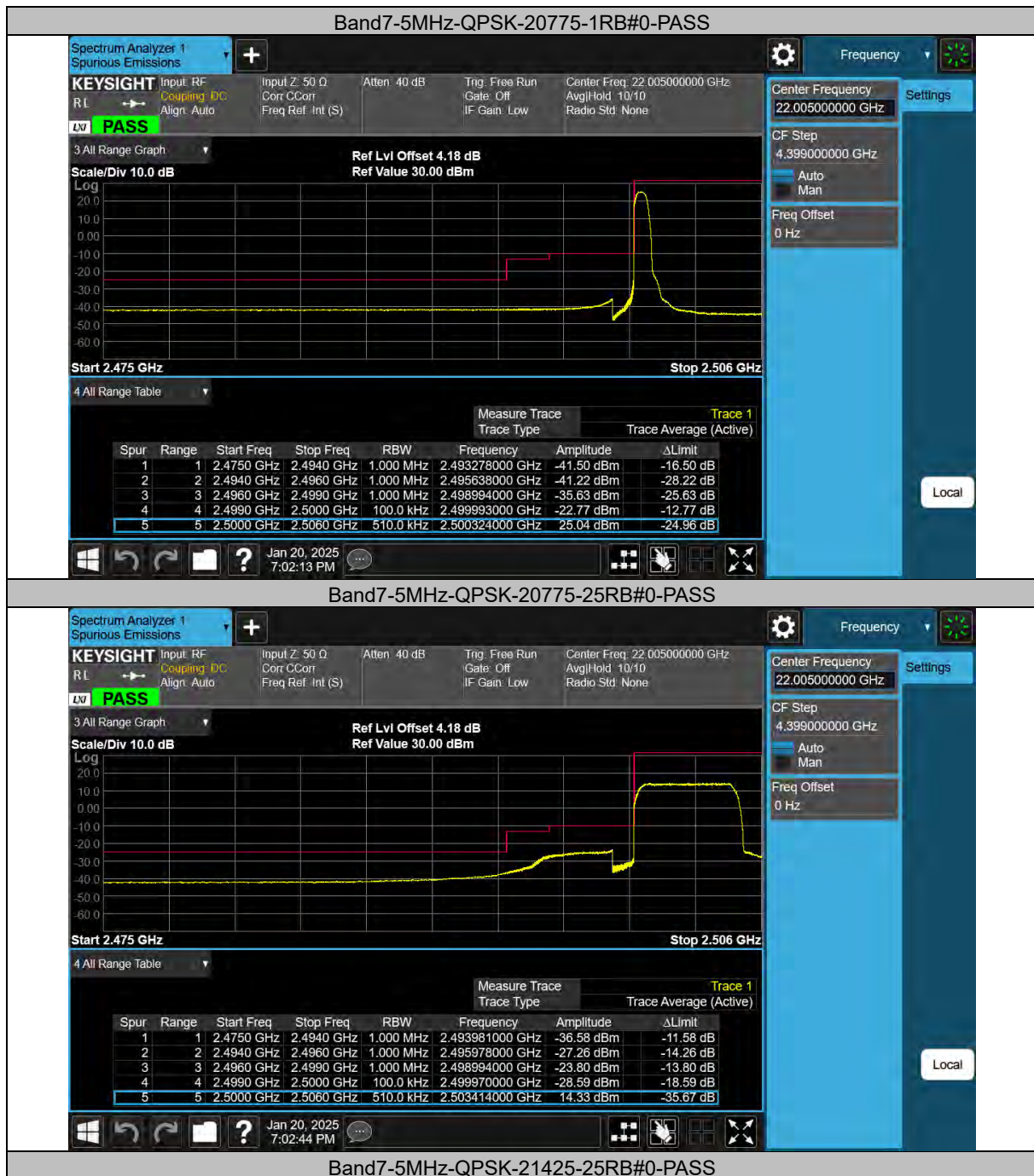
Test Result

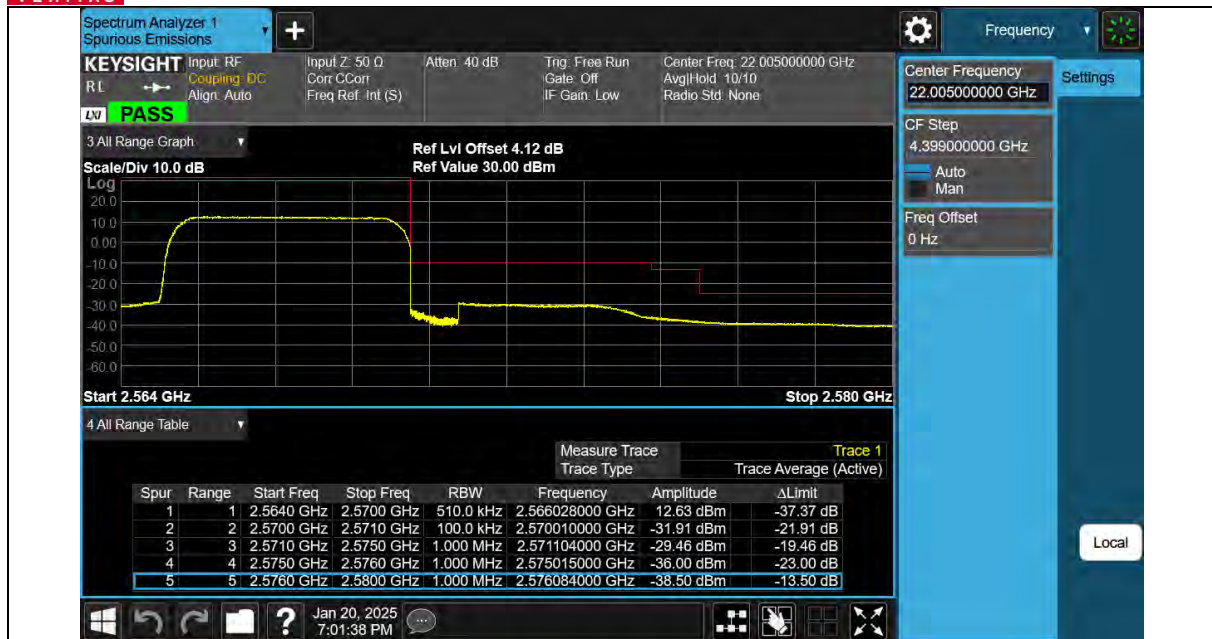
NOTE: Pre-scan QPSK,16QAM,64QAM, 256QAM four modulations modes, only the worst mode and data reflected in the report.

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band7	5MHz	QPSK	20775	1RB#0	-22.77	PASS
Band7	5MHz	QPSK	20775	25RB#0	-36.58	PASS
Band7	5MHz	QPSK	21425	25RB#0	-38.50	PASS
Band7	5MHz	QPSK	21425	1RB#24	-25.05	PASS
Band7	5MHz	16QAM	20775	1RB#0	-24.60	PASS
Band7	5MHz	16QAM	20775	25RB#0	-37.06	PASS
Band7	5MHz	16QAM	21425	25RB#0	-38.14	PASS
Band7	5MHz	16QAM	21425	1RB#24	-41.57	PASS
Band7	10MHz	QPSK	20800	1RB#0	-41.61	PASS
Band7	10MHz	QPSK	20800	50RB#0	-35.66	PASS
Band7	10MHz	QPSK	21400	50RB#0	-38.02	PASS
Band7	10MHz	QPSK	21400	1RB#49	-41.62	PASS
Band7	10MHz	16QAM	20800	1RB#0	-41.60	PASS
Band7	10MHz	16QAM	20800	50RB#0	-36.48	PASS
Band7	10MHz	16QAM	21400	50RB#0	-38.06	PASS
Band7	10MHz	16QAM	21400	1RB#49	-41.72	PASS
Band7	15MHz	QPSK	20825	1RB#0	-41.68	PASS
Band7	15MHz	QPSK	20825	75RB#0	-30.65	PASS
Band7	15MHz	QPSK	21375	75RB#0	-39.44	PASS
Band7	15MHz	QPSK	21375	1RB#74	-41.79	PASS
Band7	15MHz	16QAM	20825	1RB#0	-41.66	PASS
Band7	15MHz	16QAM	20825	75RB#0	-33.62	PASS
Band7	15MHz	16QAM	21375	75RB#0	-39.76	PASS
Band7	15MHz	16QAM	21375	1RB#74	-41.73	PASS
Band7	20MHz	QPSK	20850	1RB#0	-41.70	PASS
Band7	20MHz	QPSK	20850	100RB#0	-31.57	PASS
Band7	20MHz	QPSK	21350	100RB#0	-40.67	PASS
Band7	20MHz	QPSK	21350	1RB#99	-41.82	PASS
Band7	20MHz	16QAM	20850	1RB#0	-41.81	PASS
Band7	20MHz	16QAM	20850	100RB#0	-31.53	PASS
Band7	20MHz	16QAM	21350	100RB#0	-40.93	PASS
Band7	20MHz	16QAM	21350	1RB#99	-41.86	PASS

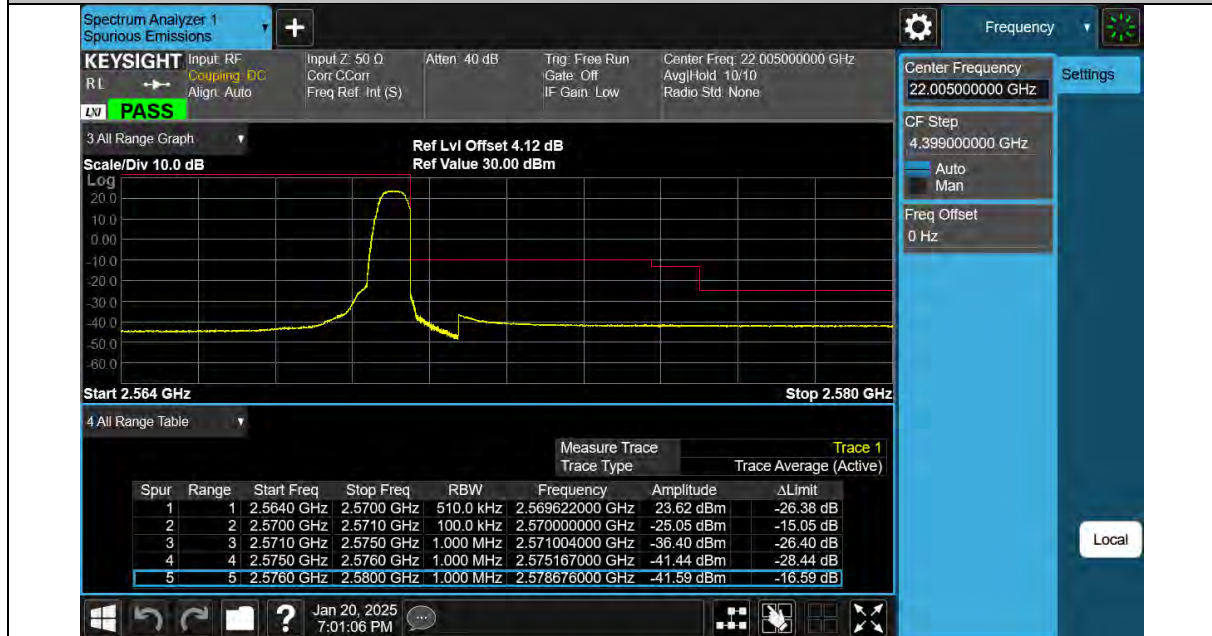


Test Graphs

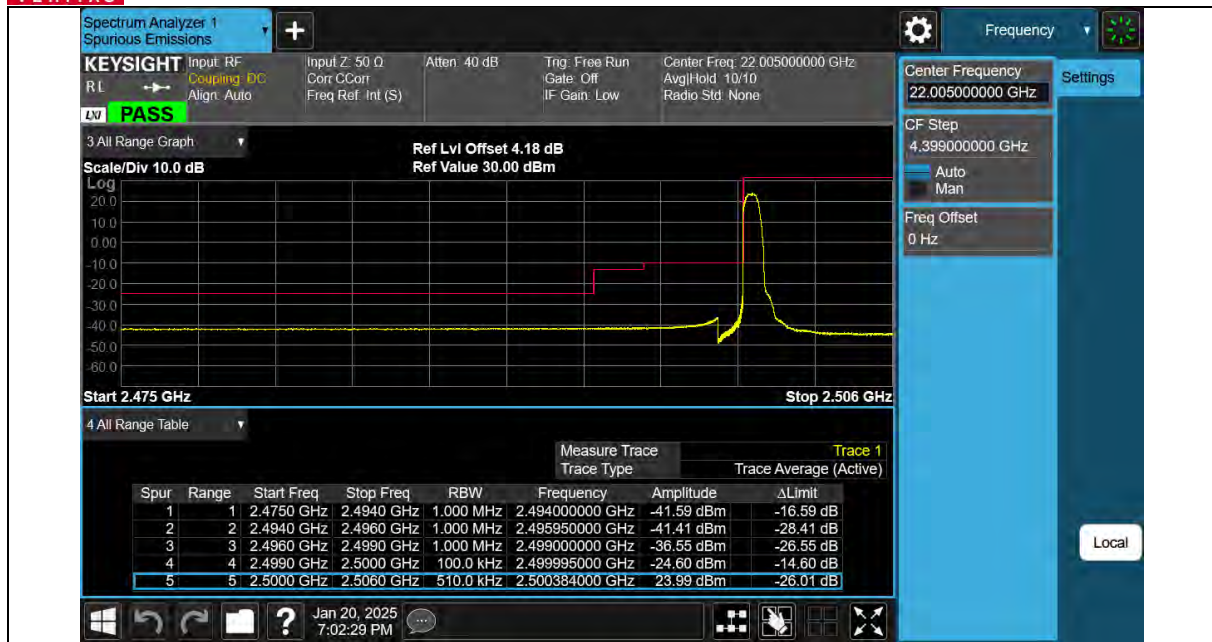




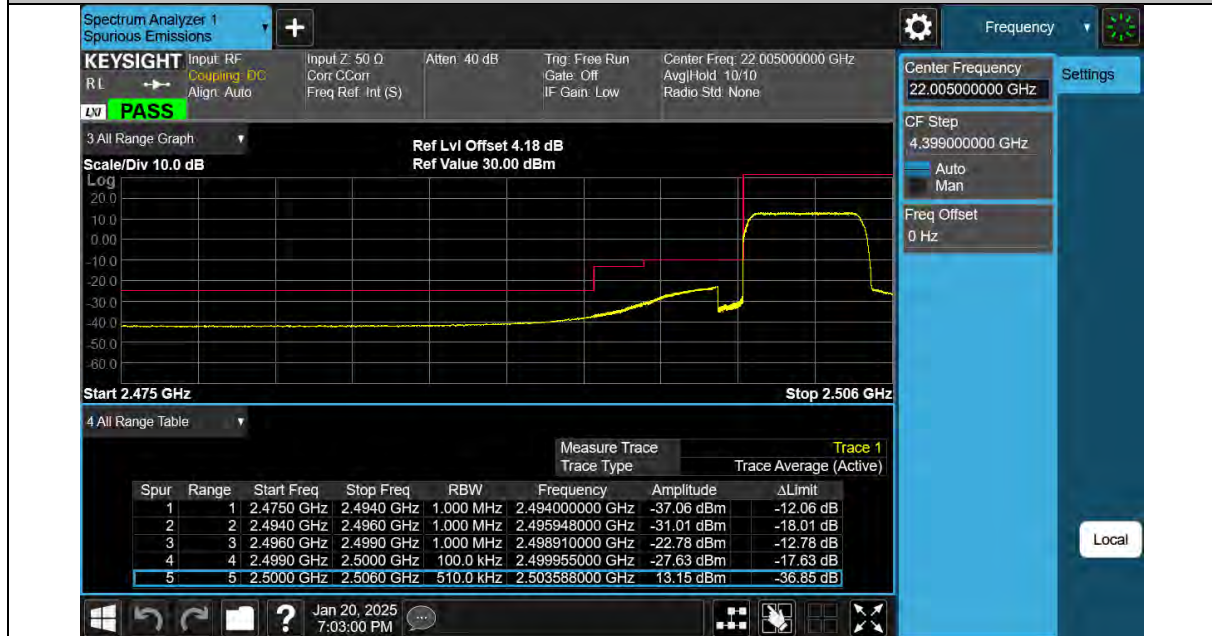
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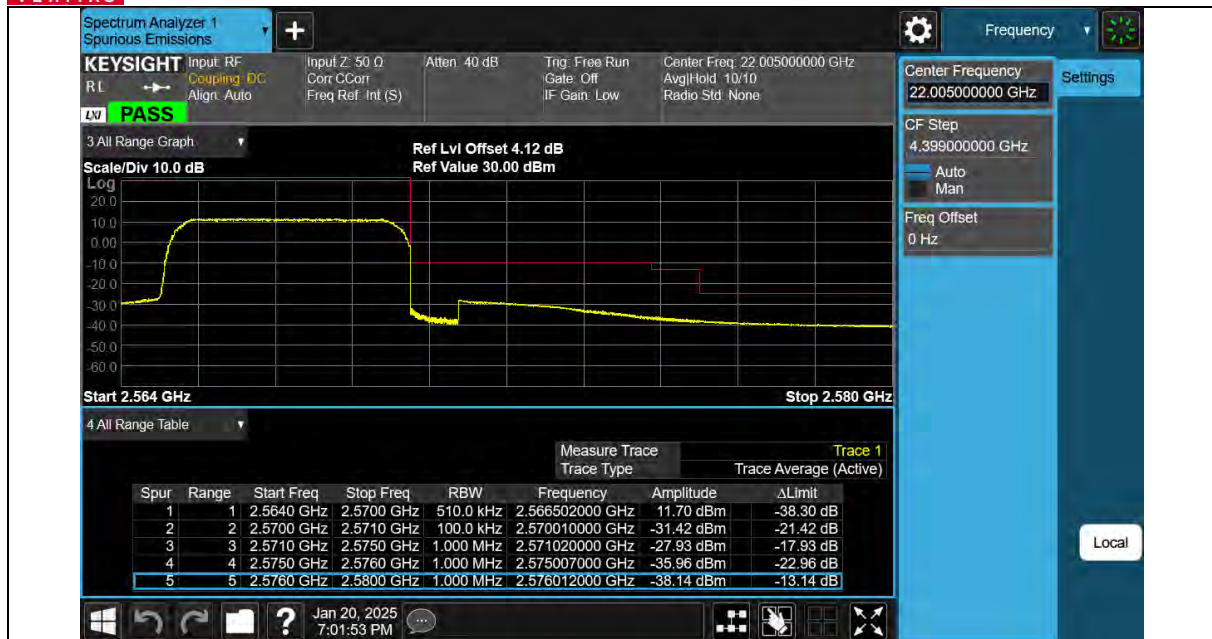
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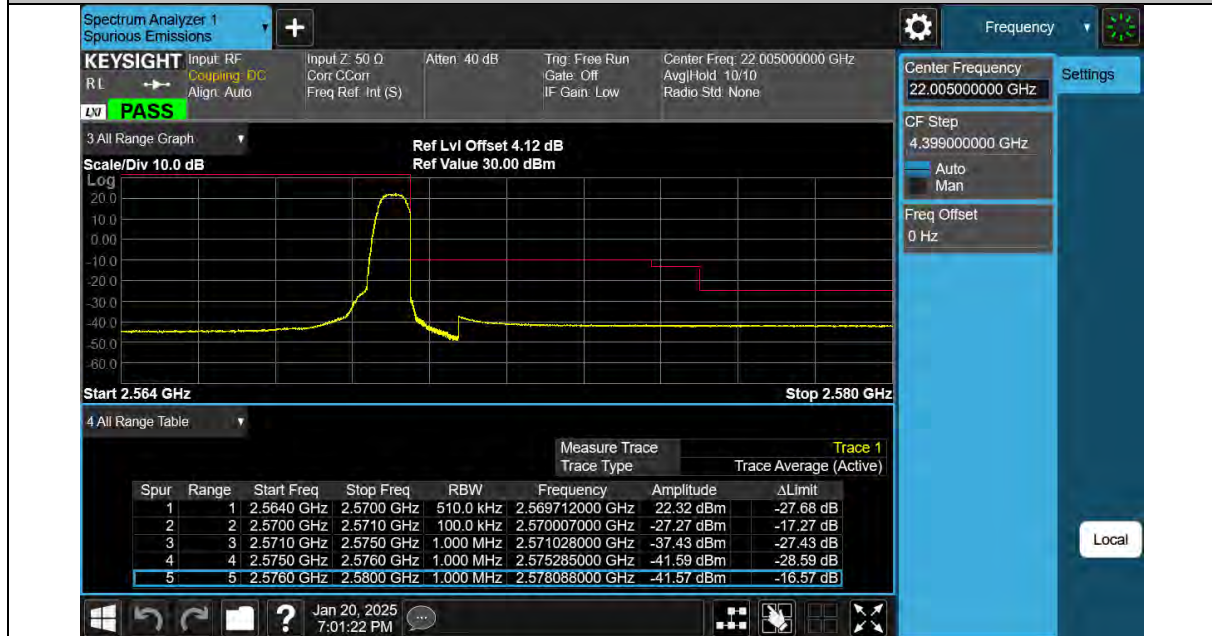
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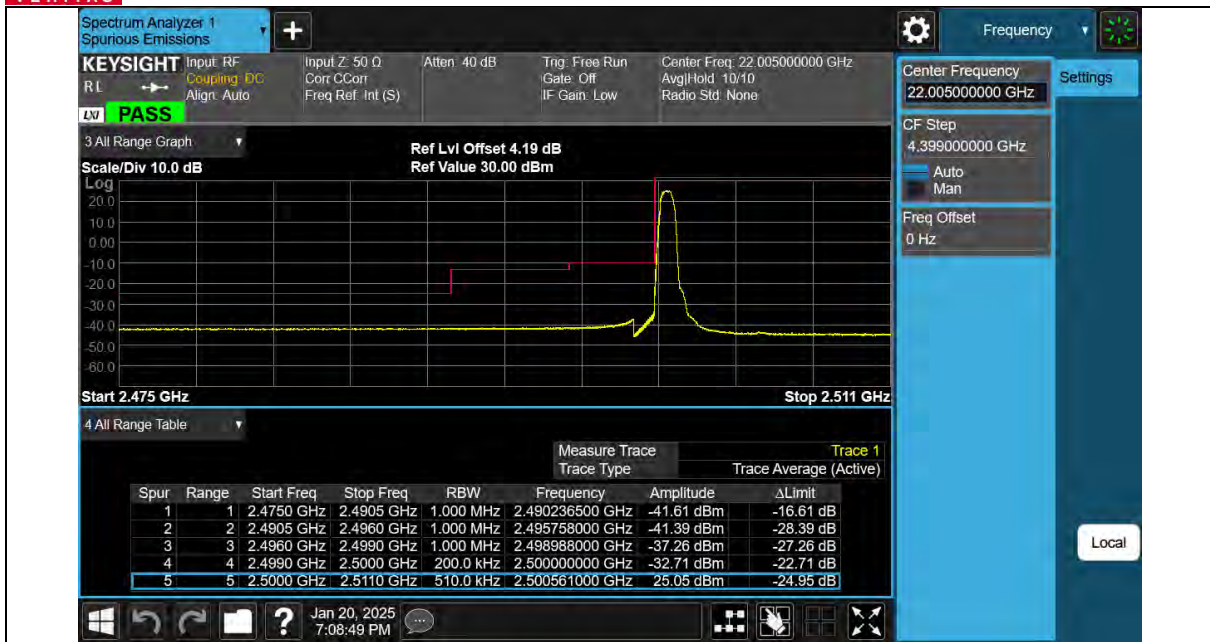
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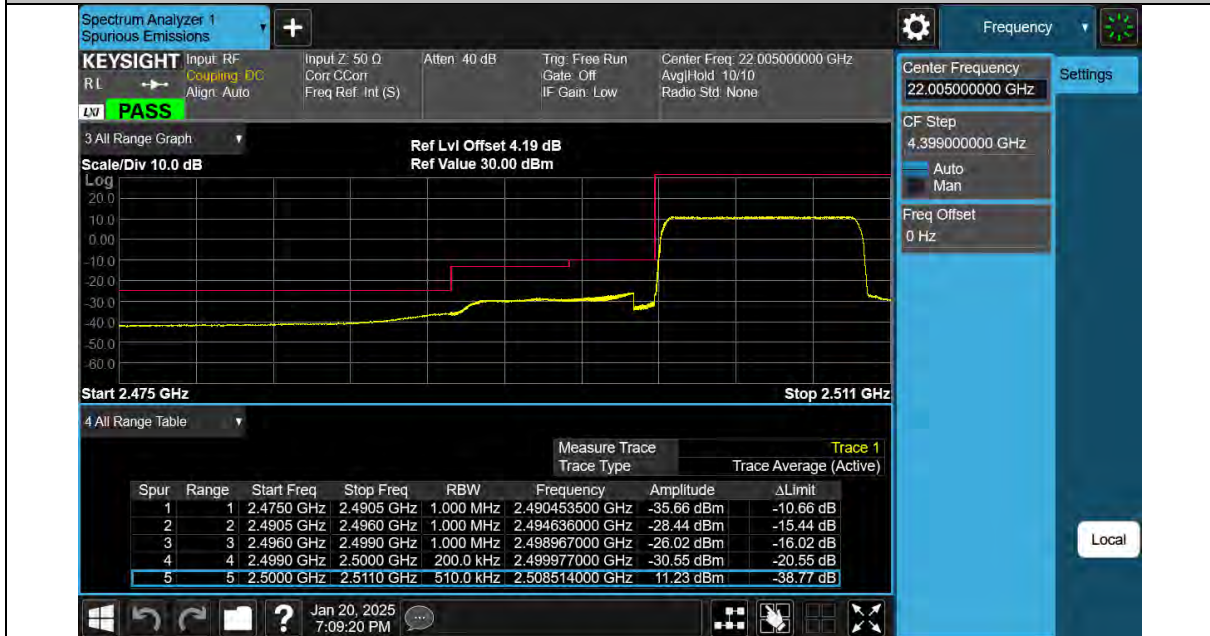
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Band7-10MHz-QPSK-20800-1RB#0-PASS



Band7-10MHz-QPSK-20800-50RB#0-PASS



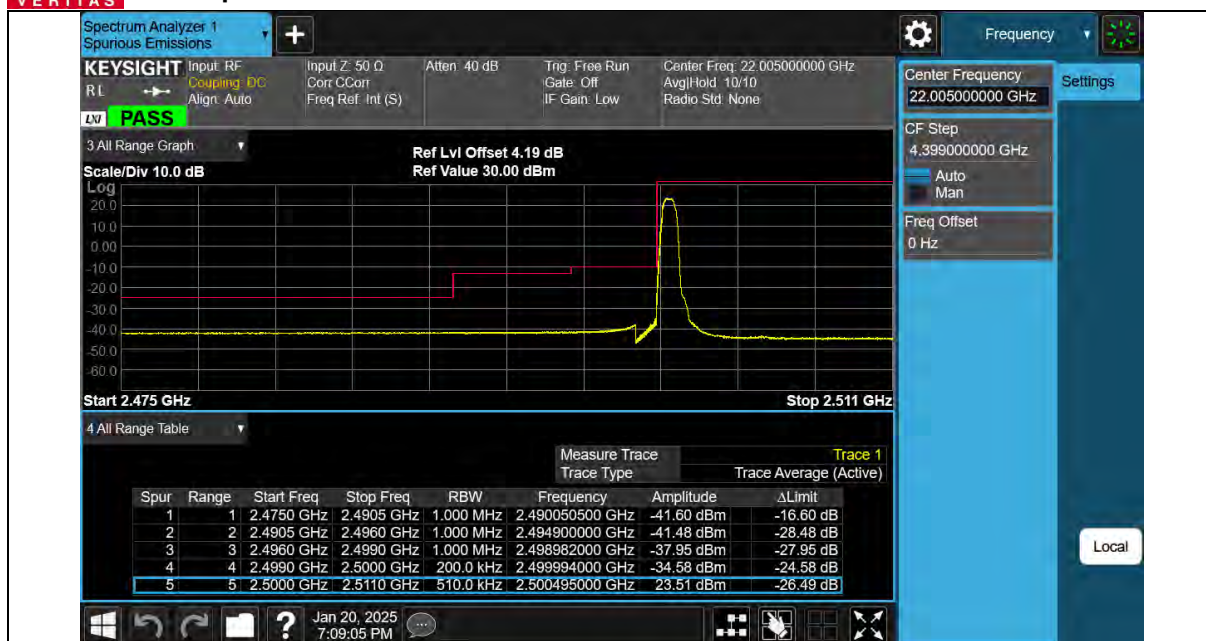
Band7-10MHz-QPSK-21400-50RB#0-PASS



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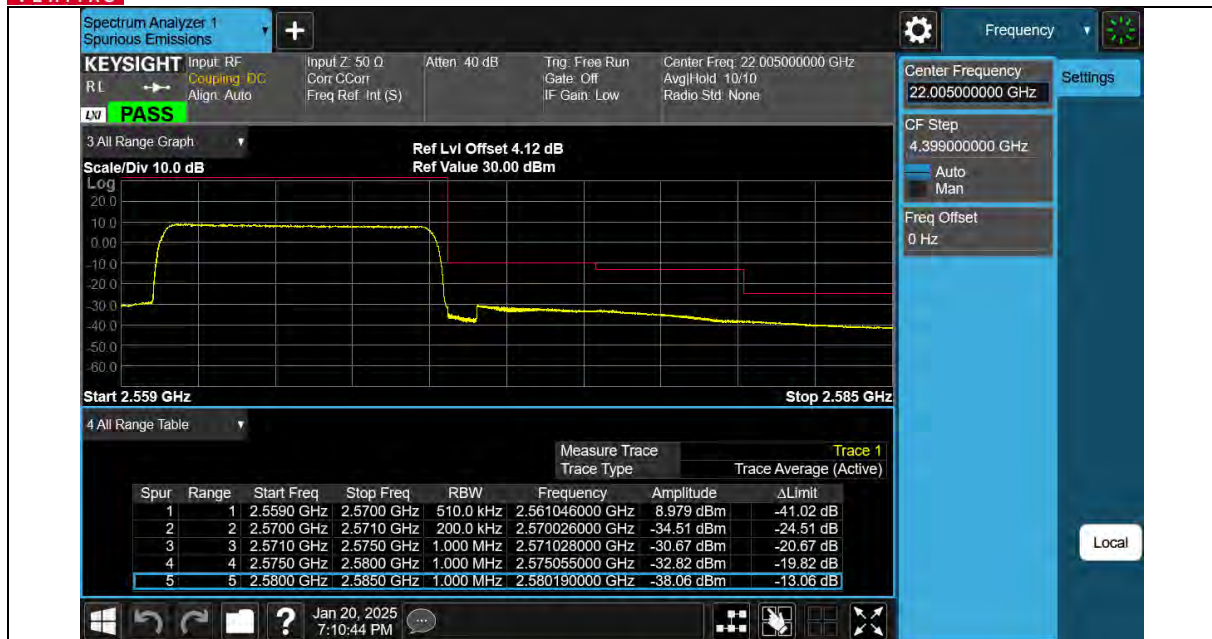




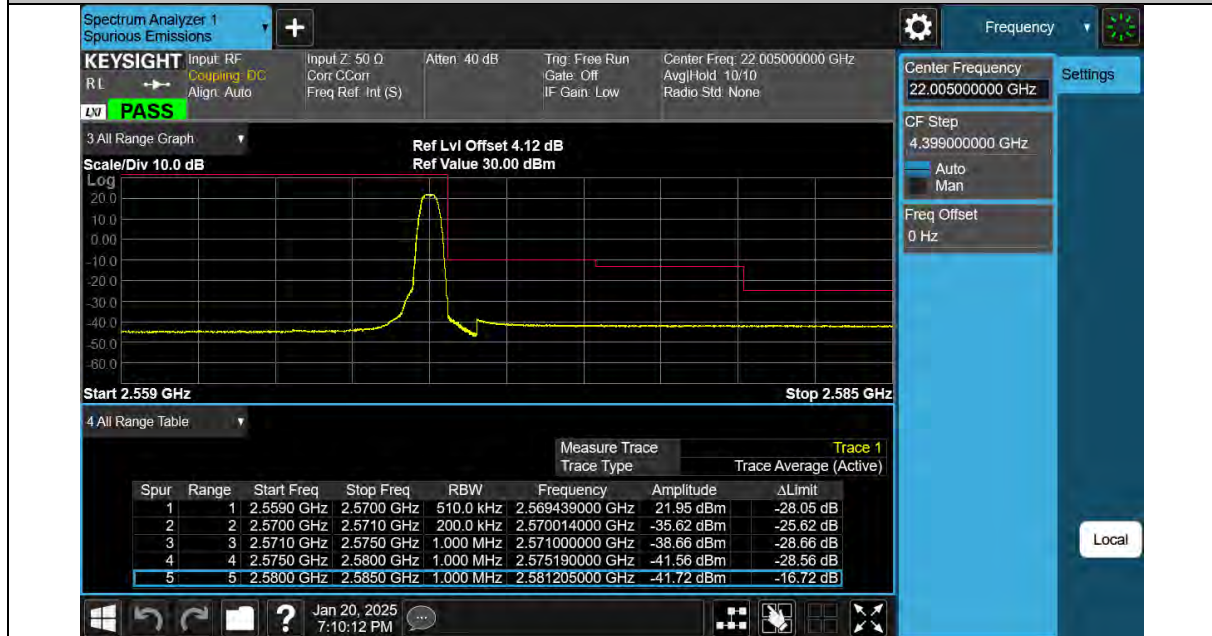
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Band7-10MHz-16QAM-21400-1RB#49-PASS

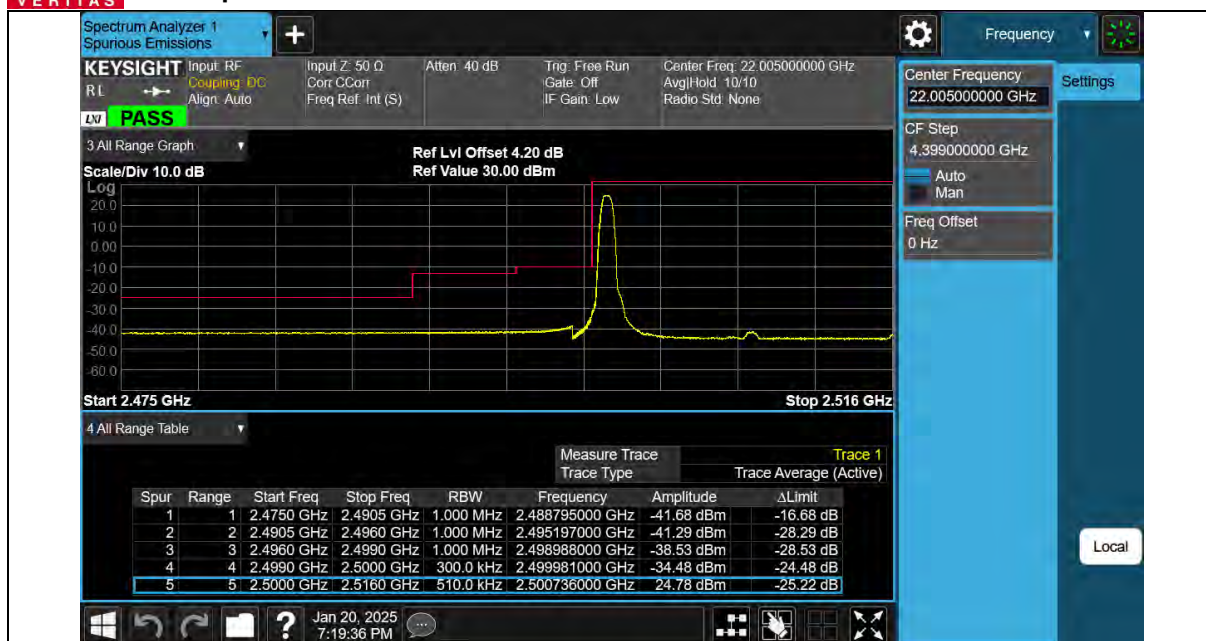


Band7-15MHz-QPSK-20825-1RB#0-PASS

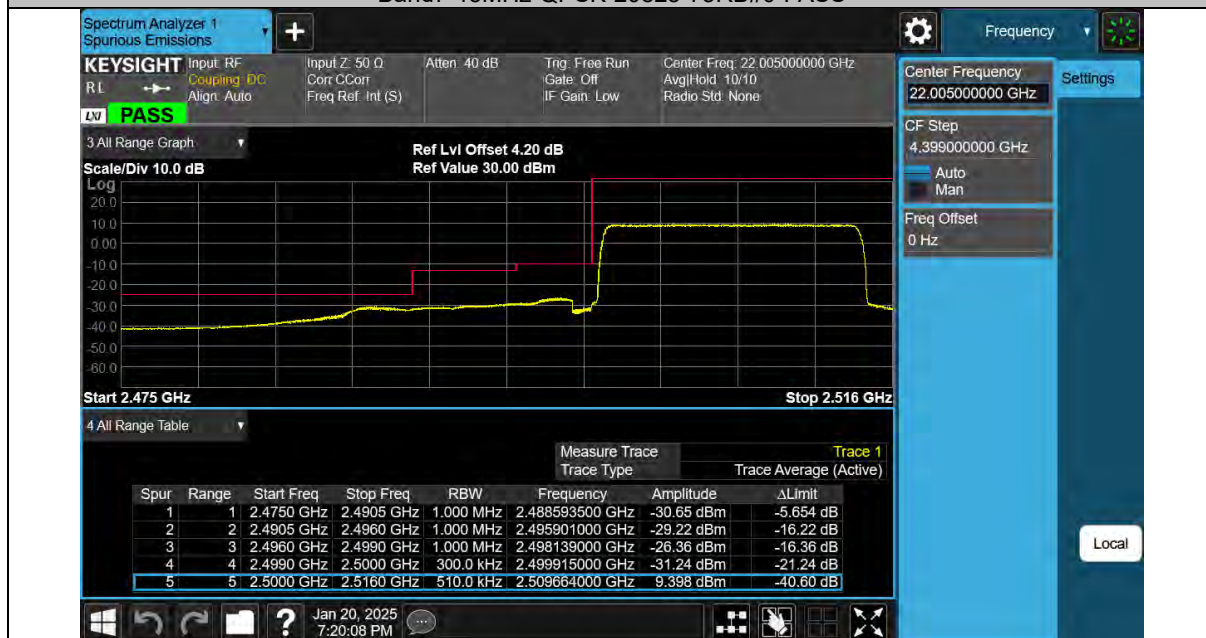


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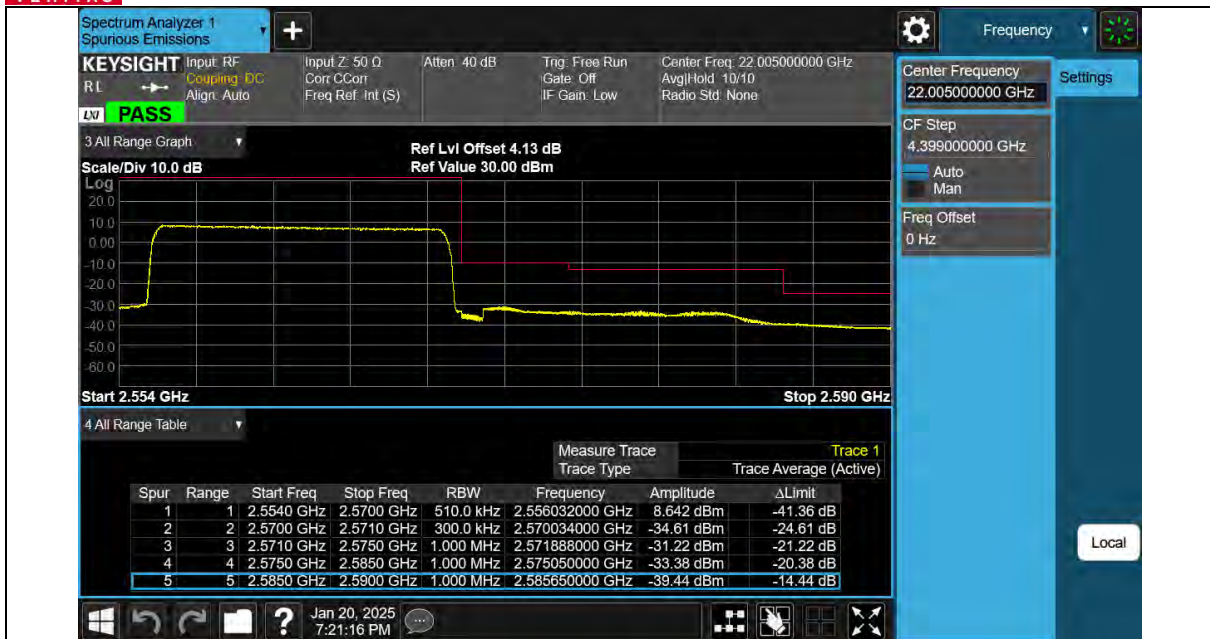
Test Report No.: PSU-NQN2412090110RF03



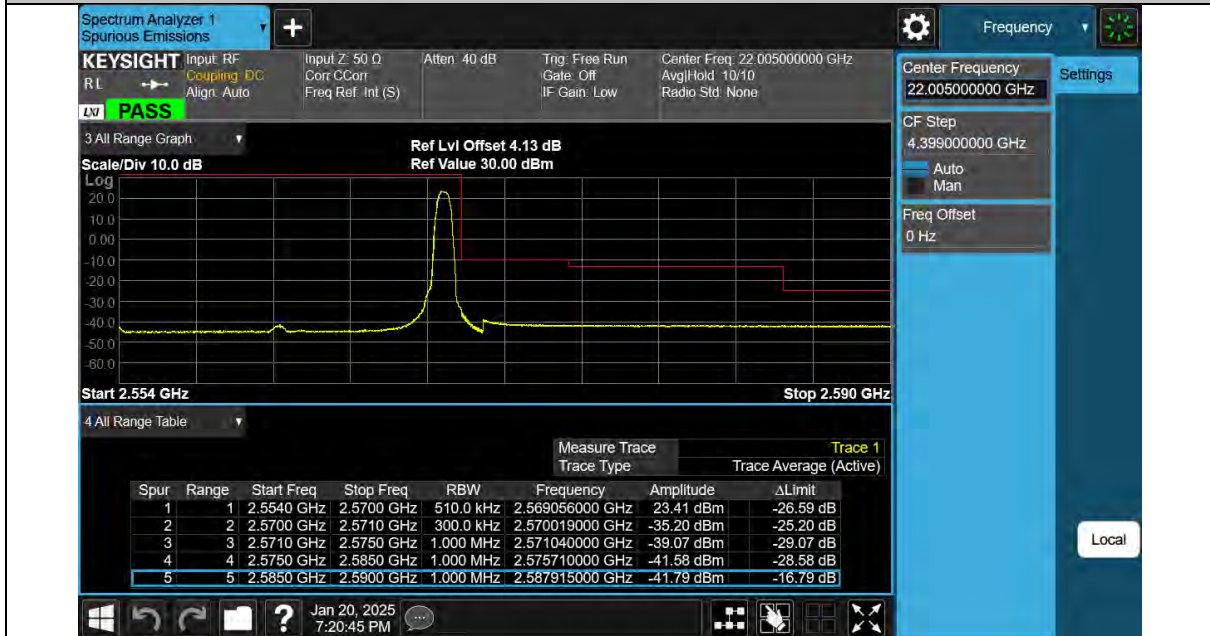
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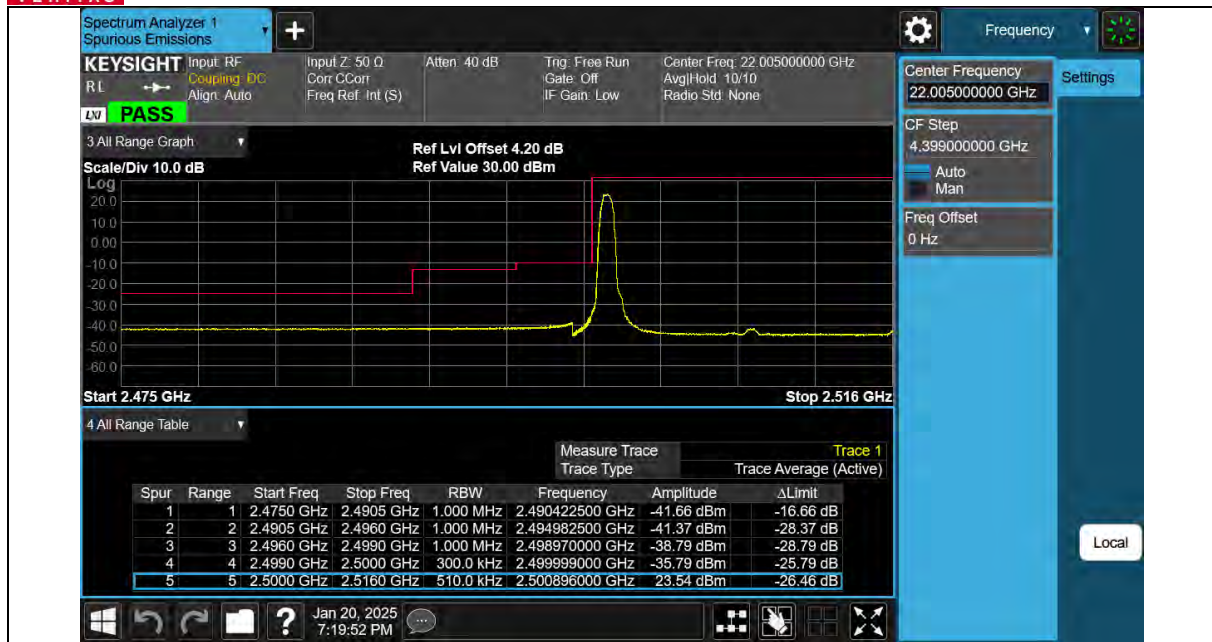
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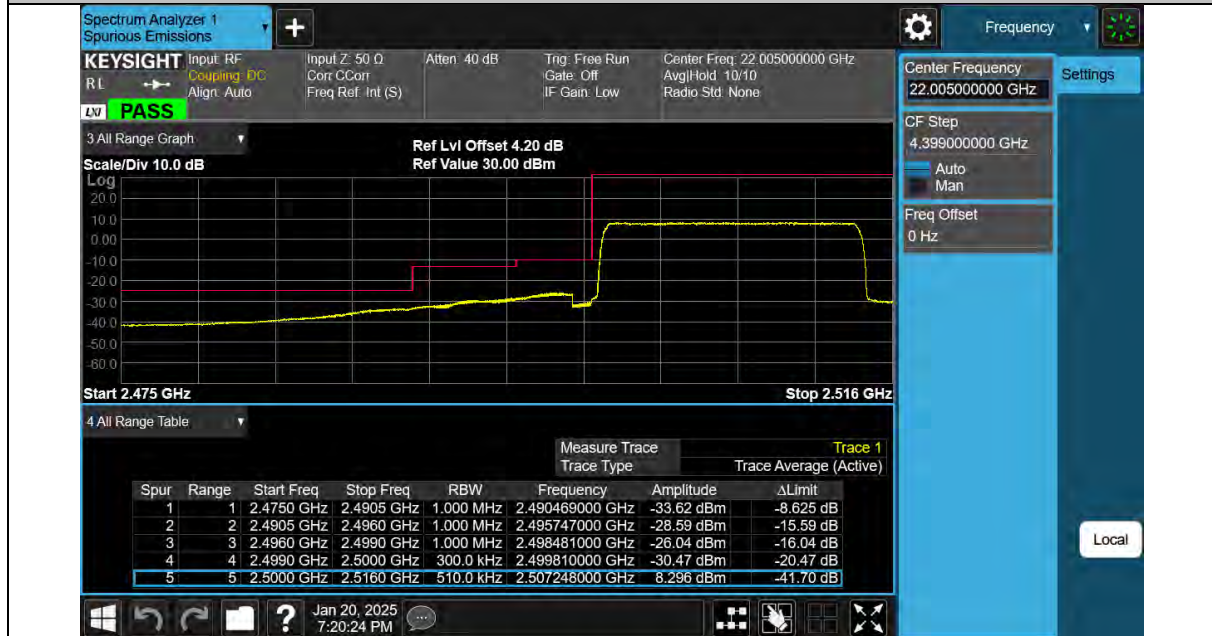
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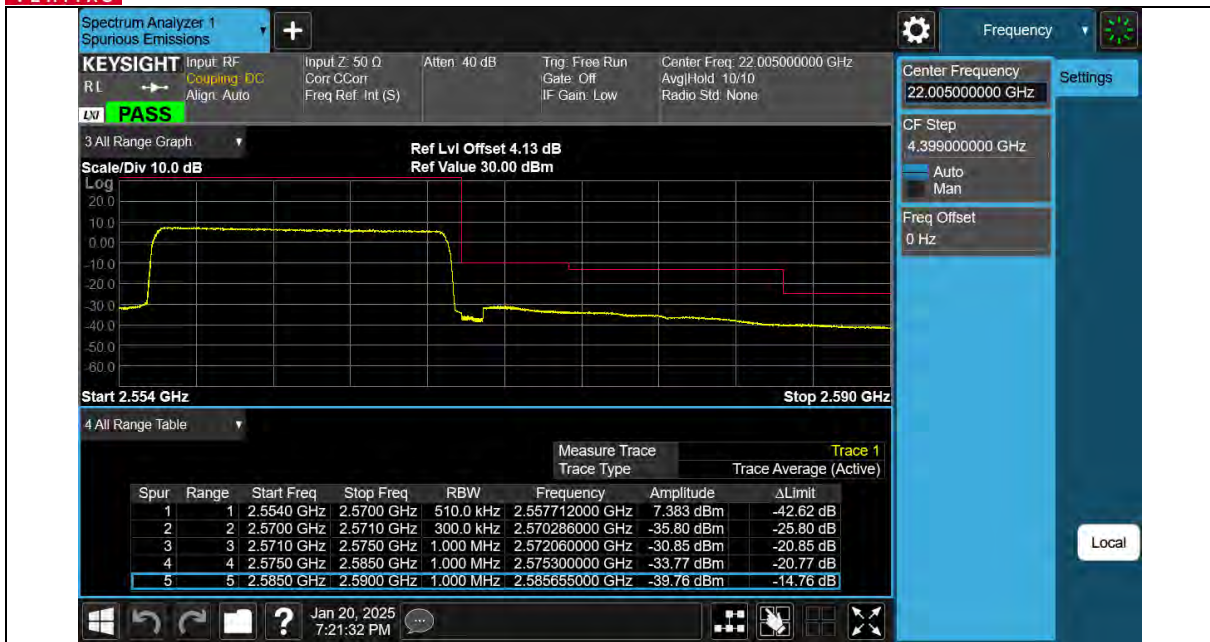
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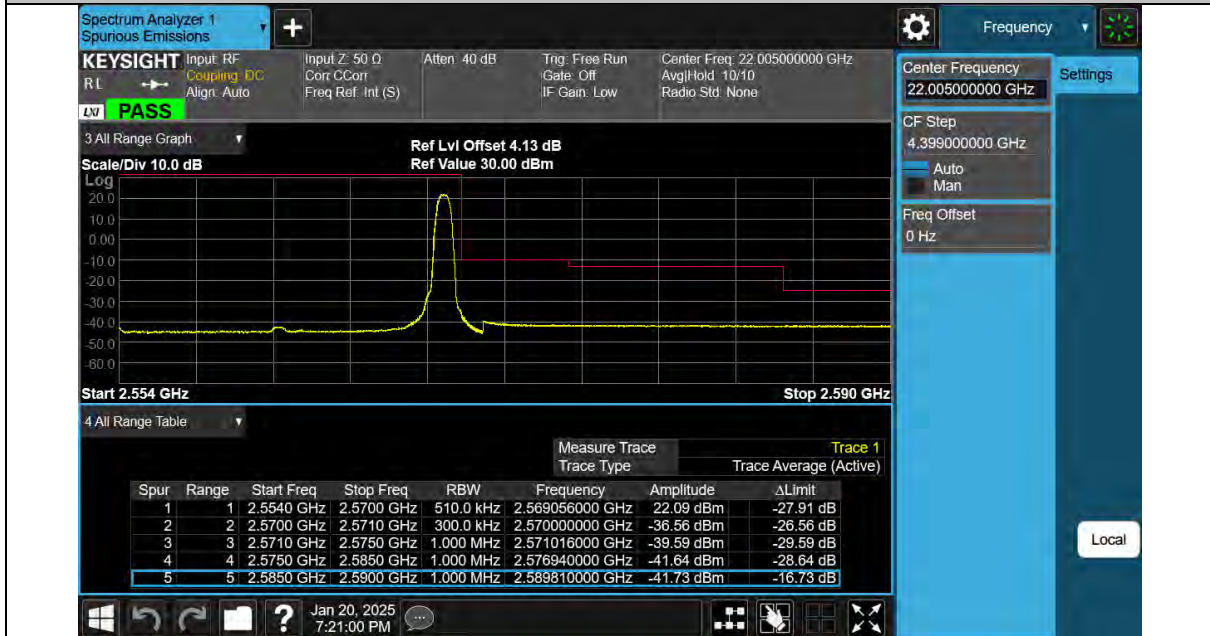
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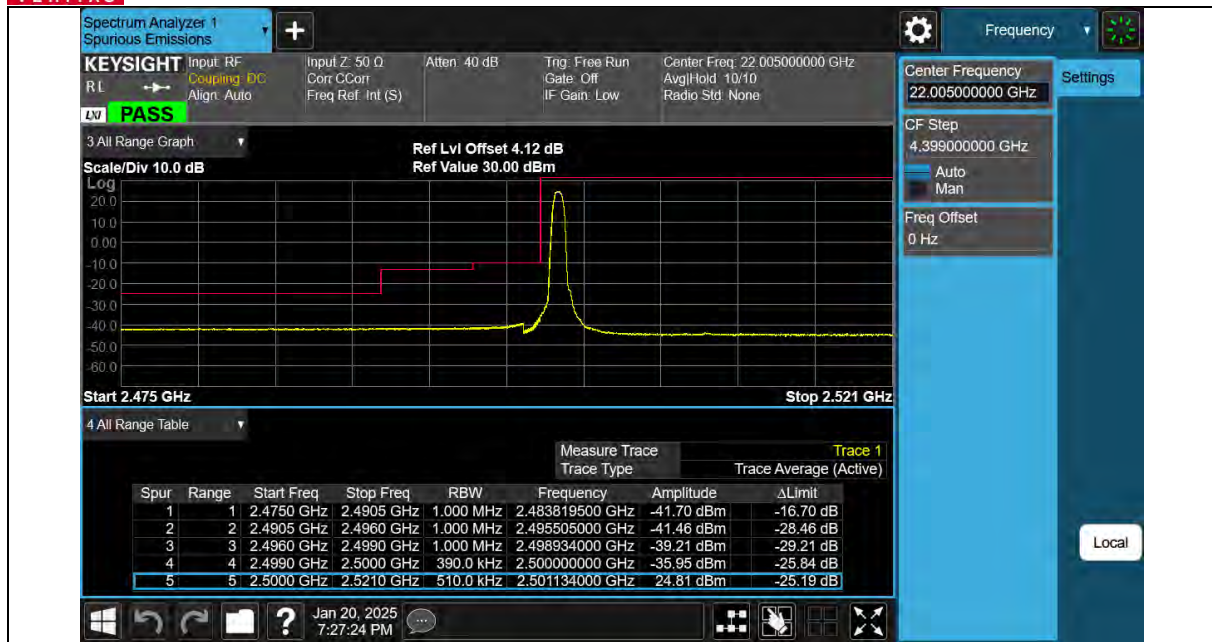
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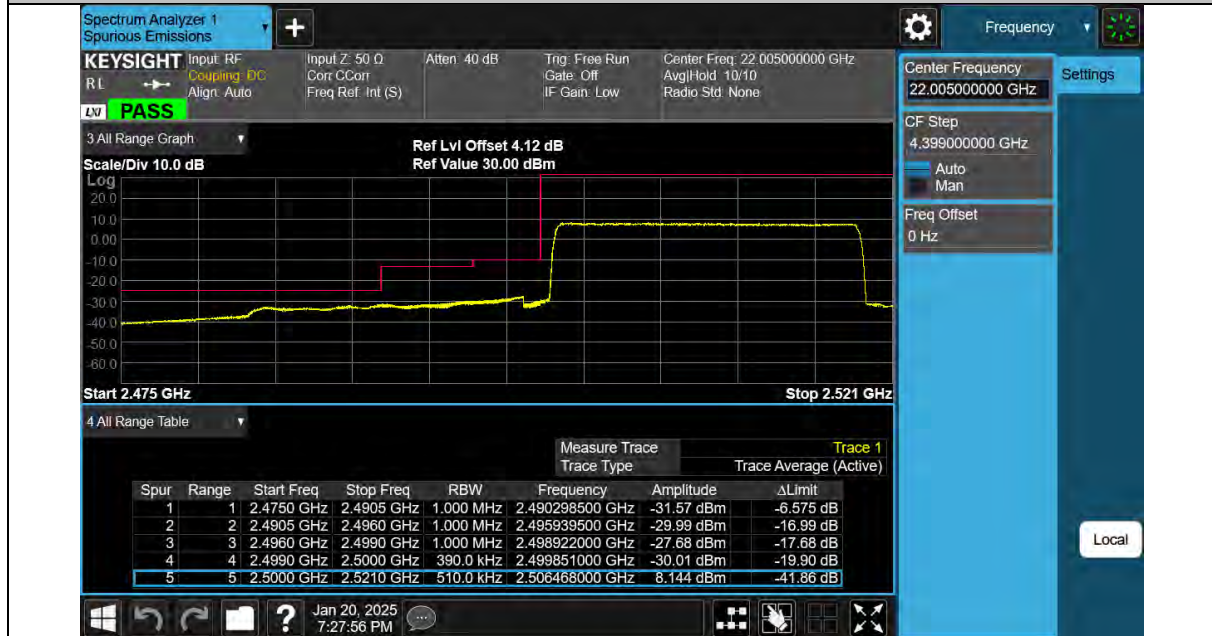
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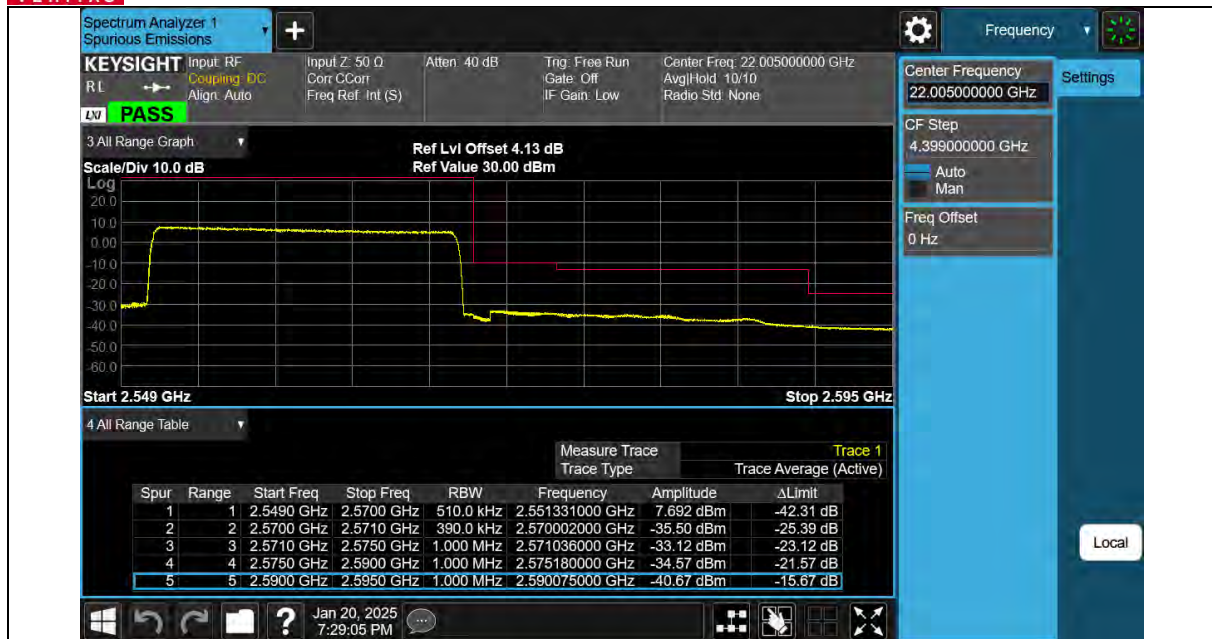
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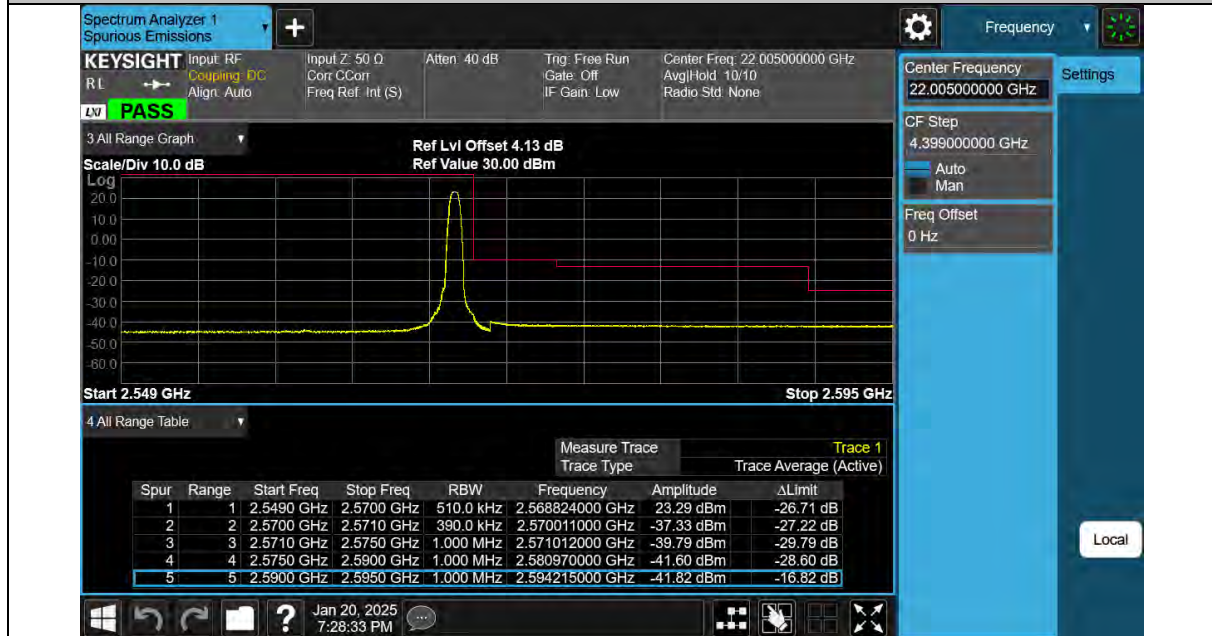
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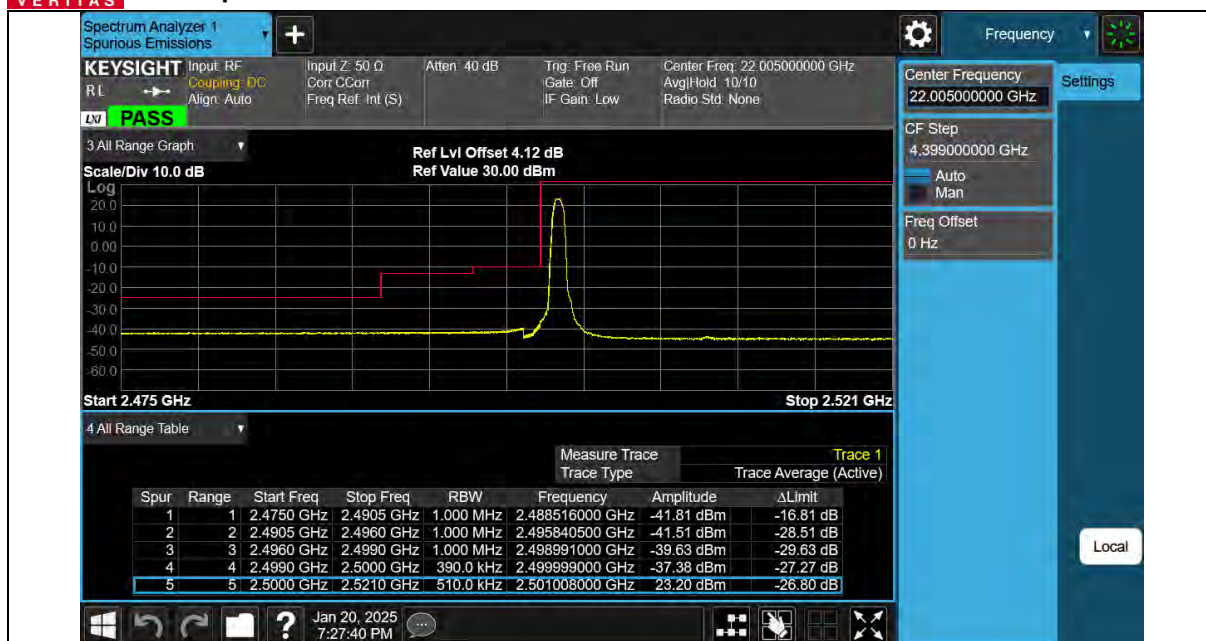


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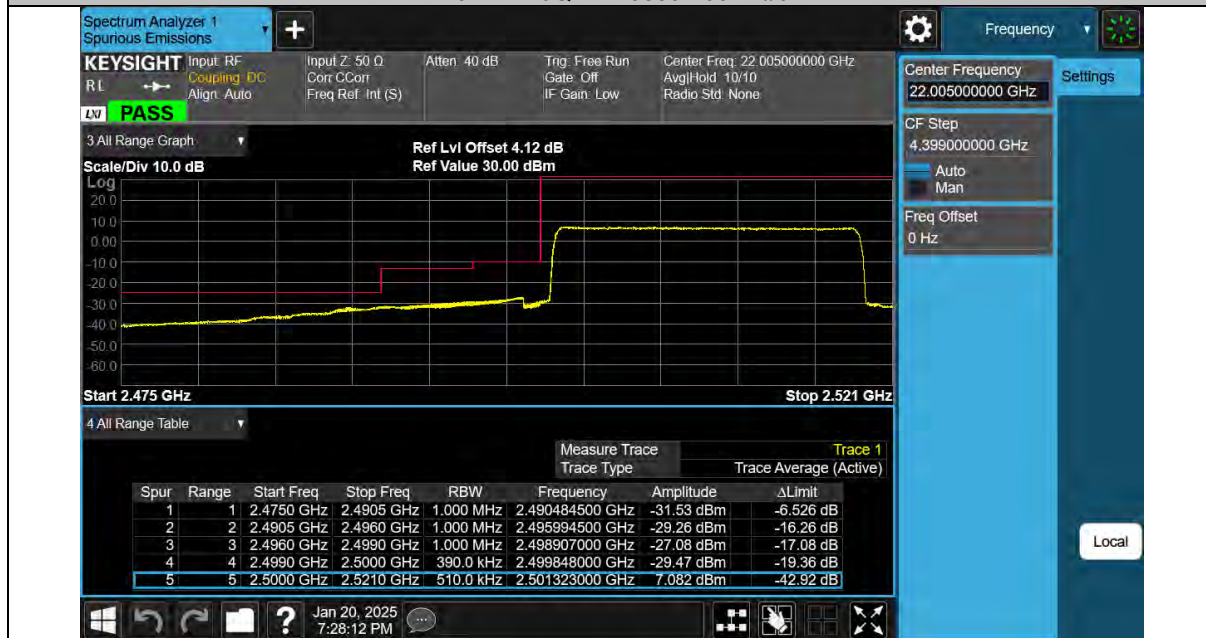


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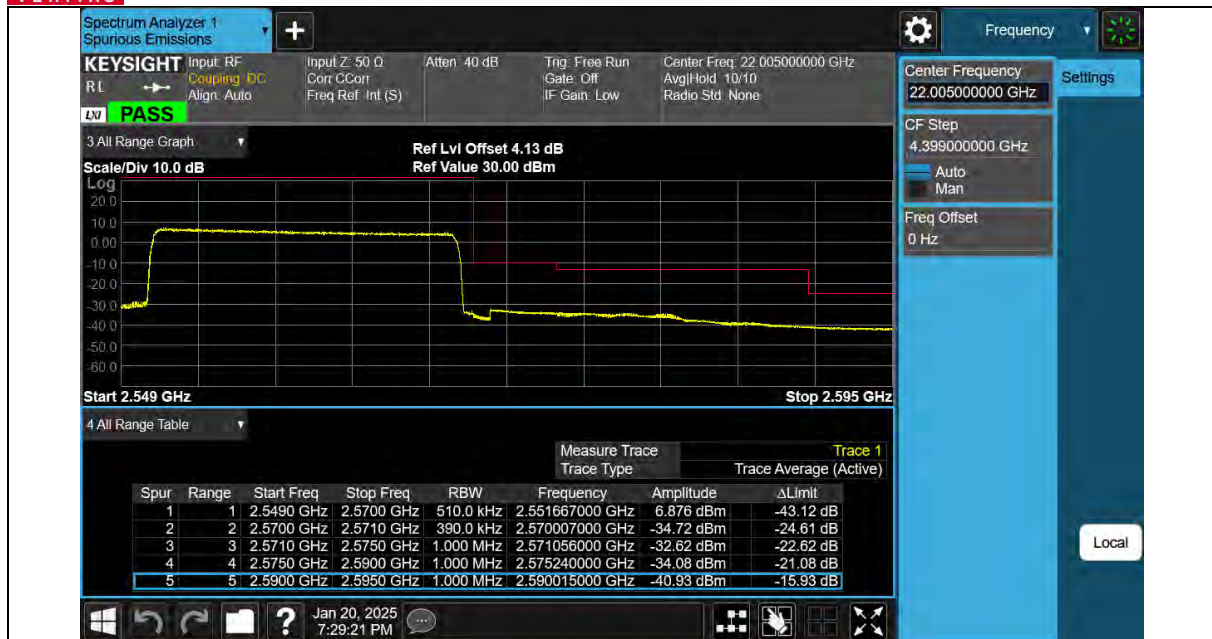
Test Report No.: PSU-NQN2412090110RF03



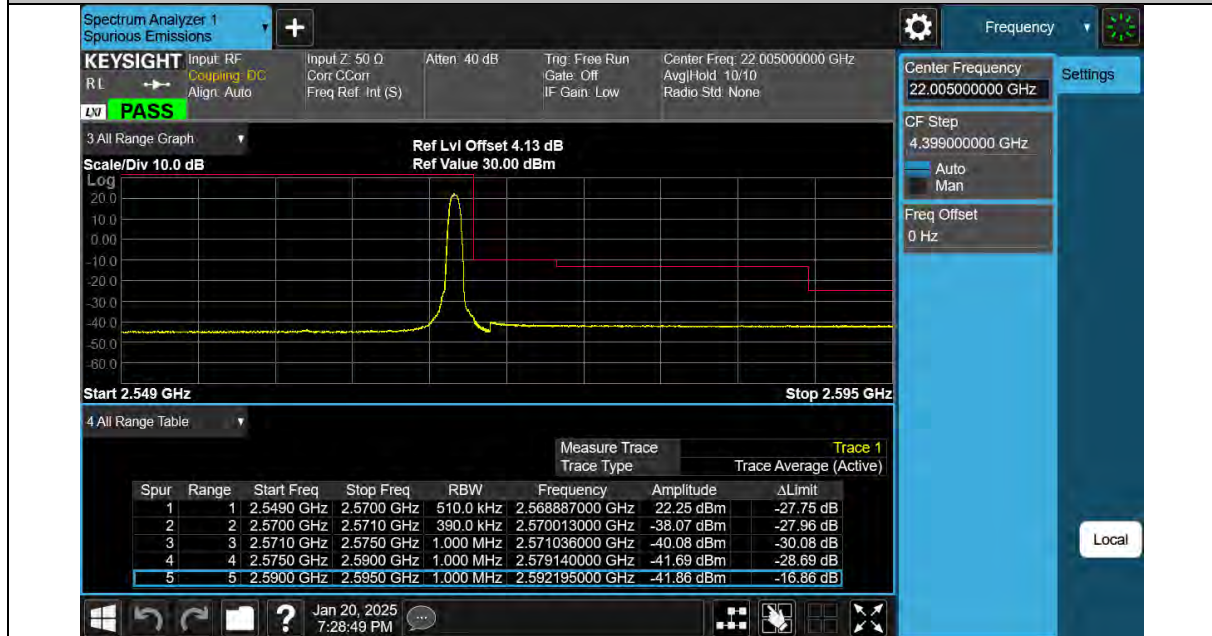
Band7-20MHz-16QAM-20850-100RB#0-PASS



Band7-20MHz-16QAM-21350-100RB#0-PASS



Band7-20MHz-16QAM-21350-1RB#99-PASS





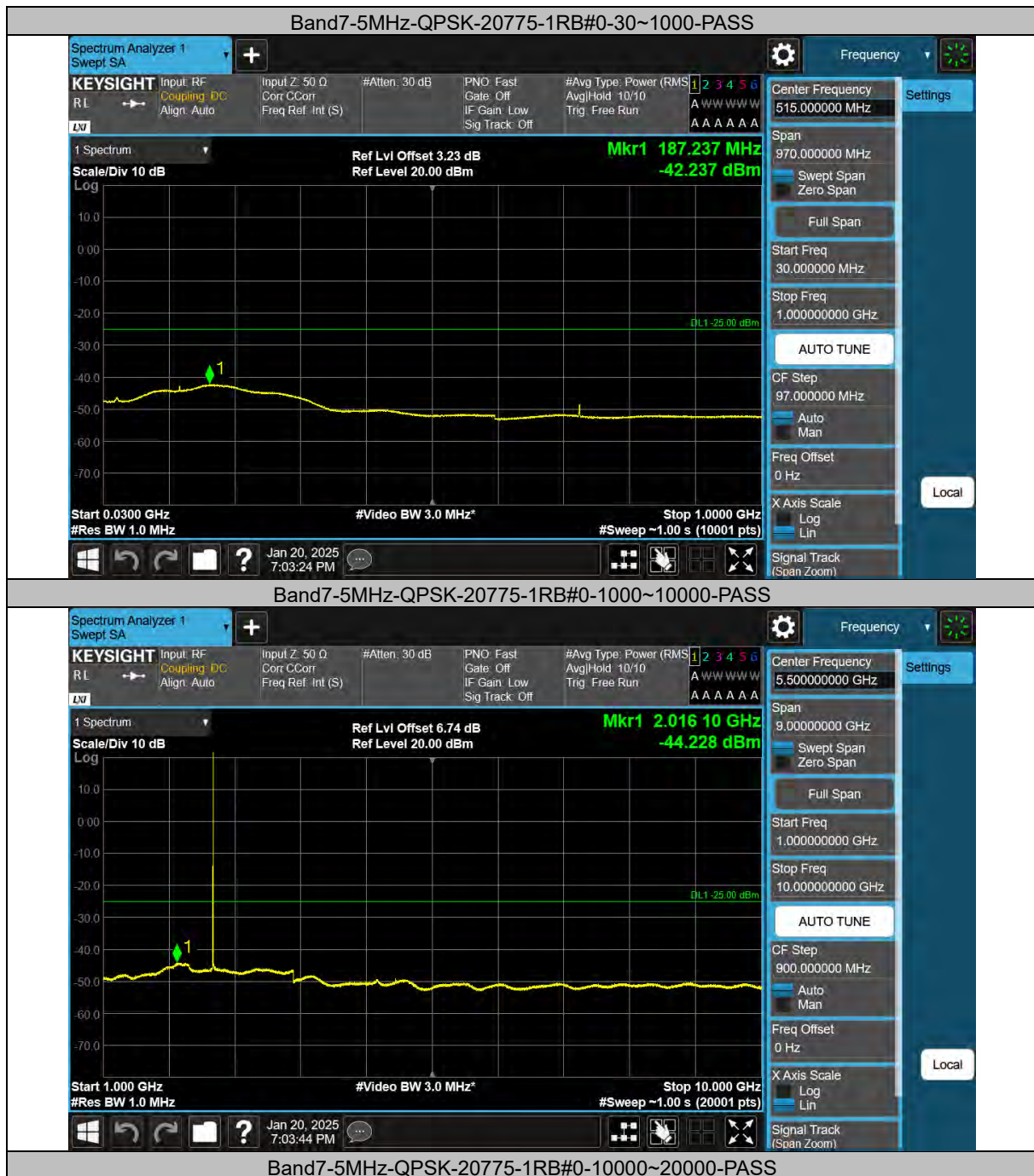
CONDUCTED SPURIOUS EMISSION

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band7	5MHz	QPSK	20775	1RB#0	30~1000	-42.24	PASS
Band7	5MHz	QPSK	20775	1RB#0	1000~10000	-44.23	PASS
Band7	5MHz	QPSK	20775	1RB#0	10000~20000	-55.69	PASS
Band7	5MHz	QPSK	20775	1RB#0	20000~27000	-53.68	PASS
Band7	5MHz	QPSK	21100	1RB#0	30~1000	-42.24	PASS
Band7	5MHz	QPSK	21100	1RB#0	1000~10000	-44.26	PASS
Band7	5MHz	QPSK	21100	1RB#0	10000~20000	-55.78	PASS
Band7	5MHz	QPSK	21100	1RB#0	20000~27000	-53.62	PASS
Band7	5MHz	QPSK	21425	1RB#0	30~1000	-42.24	PASS
Band7	5MHz	QPSK	21425	1RB#0	1000~10000	-44.19	PASS
Band7	5MHz	QPSK	21425	1RB#0	10000~20000	-55.76	PASS
Band7	5MHz	QPSK	21425	1RB#0	20000~27000	-53.59	PASS
Band7	10MHz	QPSK	20800	1RB#0	30~1000	-42.24	PASS
Band7	10MHz	QPSK	20800	1RB#0	1000~10000	-44.20	PASS
Band7	10MHz	QPSK	20800	1RB#0	10000~20000	-55.79	PASS
Band7	10MHz	QPSK	20800	1RB#0	20000~27000	-53.61	PASS
Band7	10MHz	QPSK	21100	1RB#0	30~1000	-42.17	PASS
Band7	10MHz	QPSK	21100	1RB#0	1000~10000	-44.17	PASS
Band7	10MHz	QPSK	21100	1RB#0	10000~20000	-55.79	PASS
Band7	10MHz	QPSK	21100	1RB#0	20000~27000	-53.49	PASS
Band7	10MHz	QPSK	21400	1RB#0	30~1000	-42.25	PASS
Band7	10MHz	QPSK	21400	1RB#0	1000~10000	-44.12	PASS
Band7	10MHz	QPSK	21400	1RB#0	10000~20000	-55.77	PASS
Band7	10MHz	QPSK	21400	1RB#0	20000~27000	-53.52	PASS
Band7	15MHz	QPSK	20825	1RB#0	30~1000	-42.20	PASS
Band7	15MHz	QPSK	20825	1RB#0	1000~10000	-44.11	PASS
Band7	15MHz	QPSK	20825	1RB#0	10000~20000	-55.79	PASS
Band7	15MHz	QPSK	20825	1RB#0	20000~27000	-53.63	PASS
Band7	15MHz	QPSK	21100	1RB#0	30~1000	-42.17	PASS
Band7	15MHz	QPSK	21100	1RB#0	1000~10000	-44.23	PASS
Band7	15MHz	QPSK	21100	1RB#0	10000~20000	-55.73	PASS
Band7	15MHz	QPSK	21100	1RB#0	20000~27000	-53.59	PASS
Band7	15MHz	QPSK	21375	1RB#0	30~1000	-42.19	PASS
Band7	15MHz	QPSK	21375	1RB#0	1000~10000	-44.22	PASS
Band7	15MHz	QPSK	21375	1RB#0	10000~20000	-55.69	PASS
Band7	15MHz	QPSK	21375	1RB#0	20000~27000	-53.55	PASS
Band7	20MHz	QPSK	20850	1RB#0	30~1000	-42.28	PASS
Band7	20MHz	QPSK	20850	1RB#0	1000~10000	-44.12	PASS
Band7	20MHz	QPSK	20850	1RB#0	10000~20000	-55.69	PASS
Band7	20MHz	QPSK	20850	1RB#0	20000~27000	-53.69	PASS
Band7	20MHz	QPSK	21100	1RB#0	30~1000	-42.29	PASS
Band7	20MHz	QPSK	21100	1RB#0	1000~10000	-44.16	PASS
Band7	20MHz	QPSK	21100	1RB#0	10000~20000	-55.80	PASS
Band7	20MHz	QPSK	21100	1RB#0	20000~27000	-53.55	PASS
Band7	20MHz	QPSK	21350	1RB#0	30~1000	-42.29	PASS
Band7	20MHz	QPSK	21350	1RB#0	1000~10000	-44.19	PASS
Band7	20MHz	QPSK	21350	1RB#0	10000~20000	-55.81	PASS
Band7	20MHz	QPSK	21350	1RB#0	20000~27000	-53.62	PASS



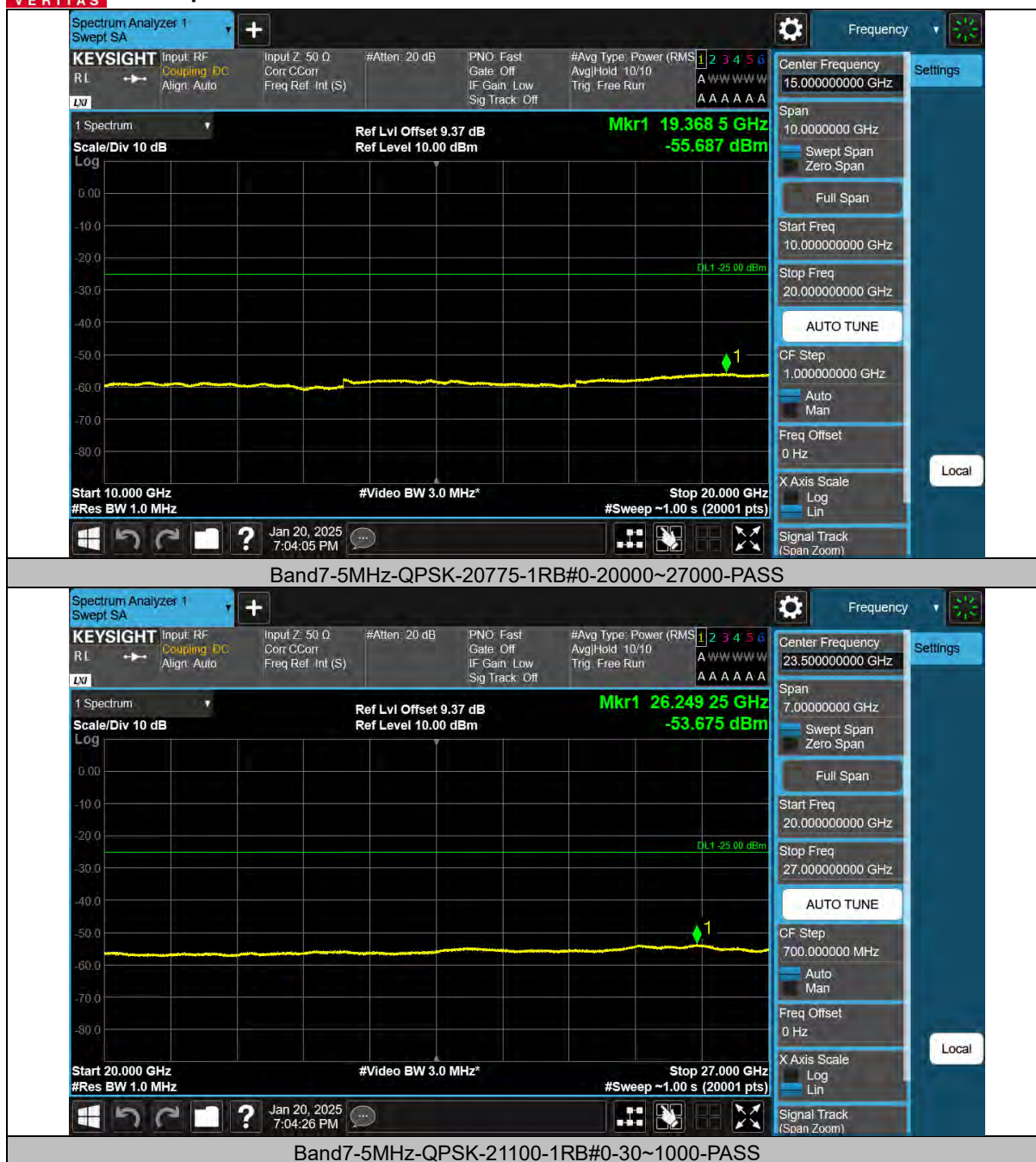
Test Graphs

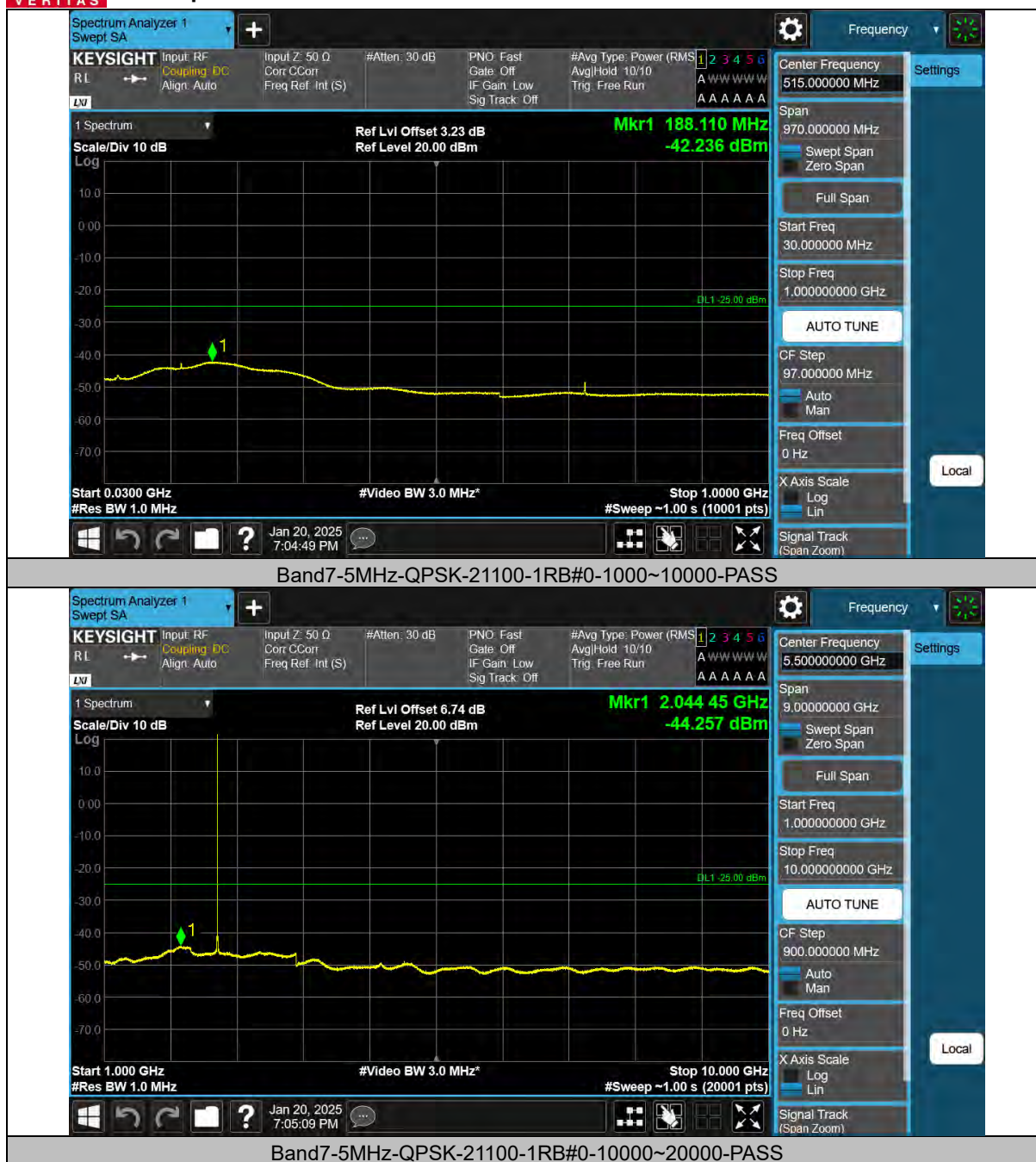




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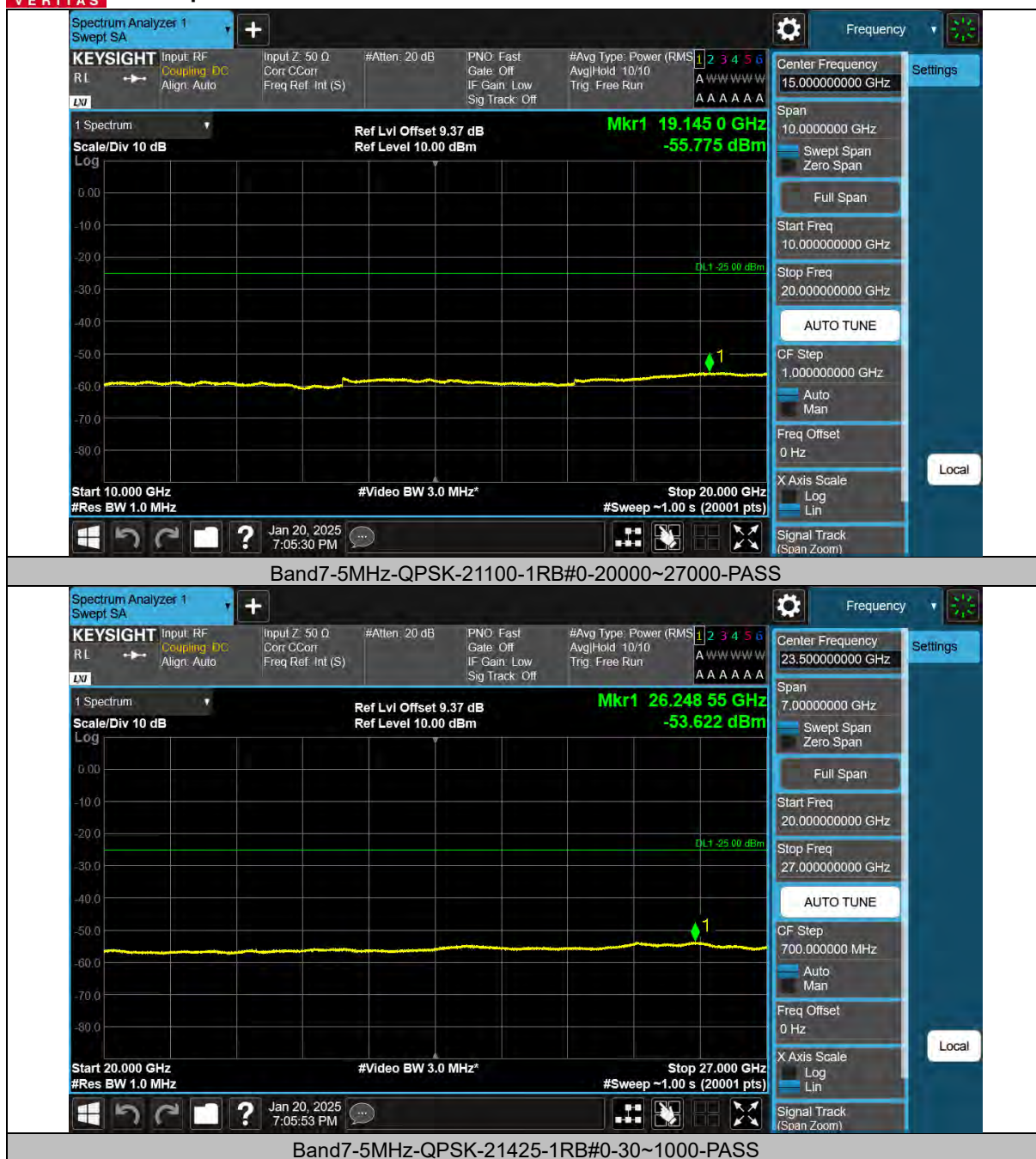






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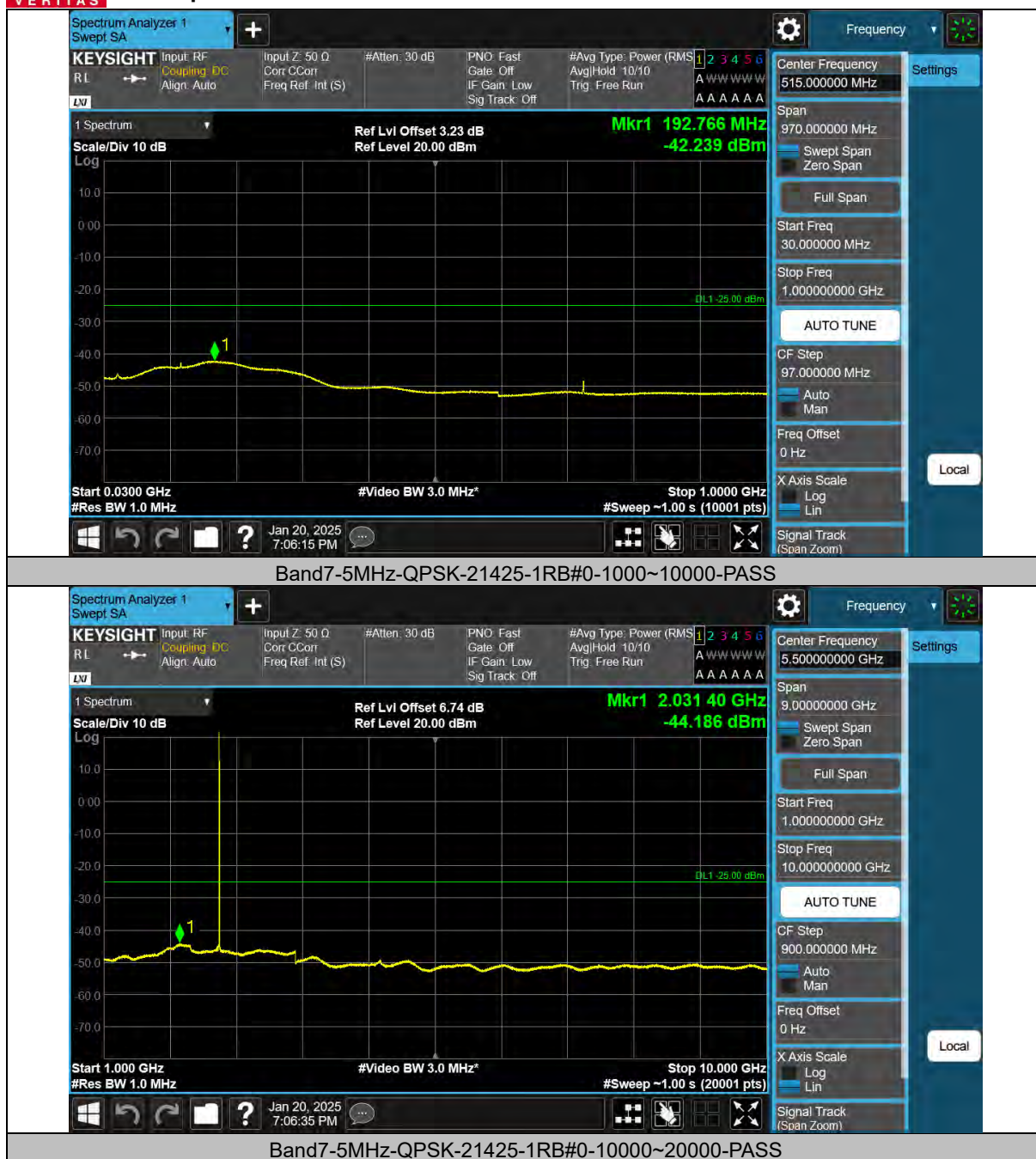
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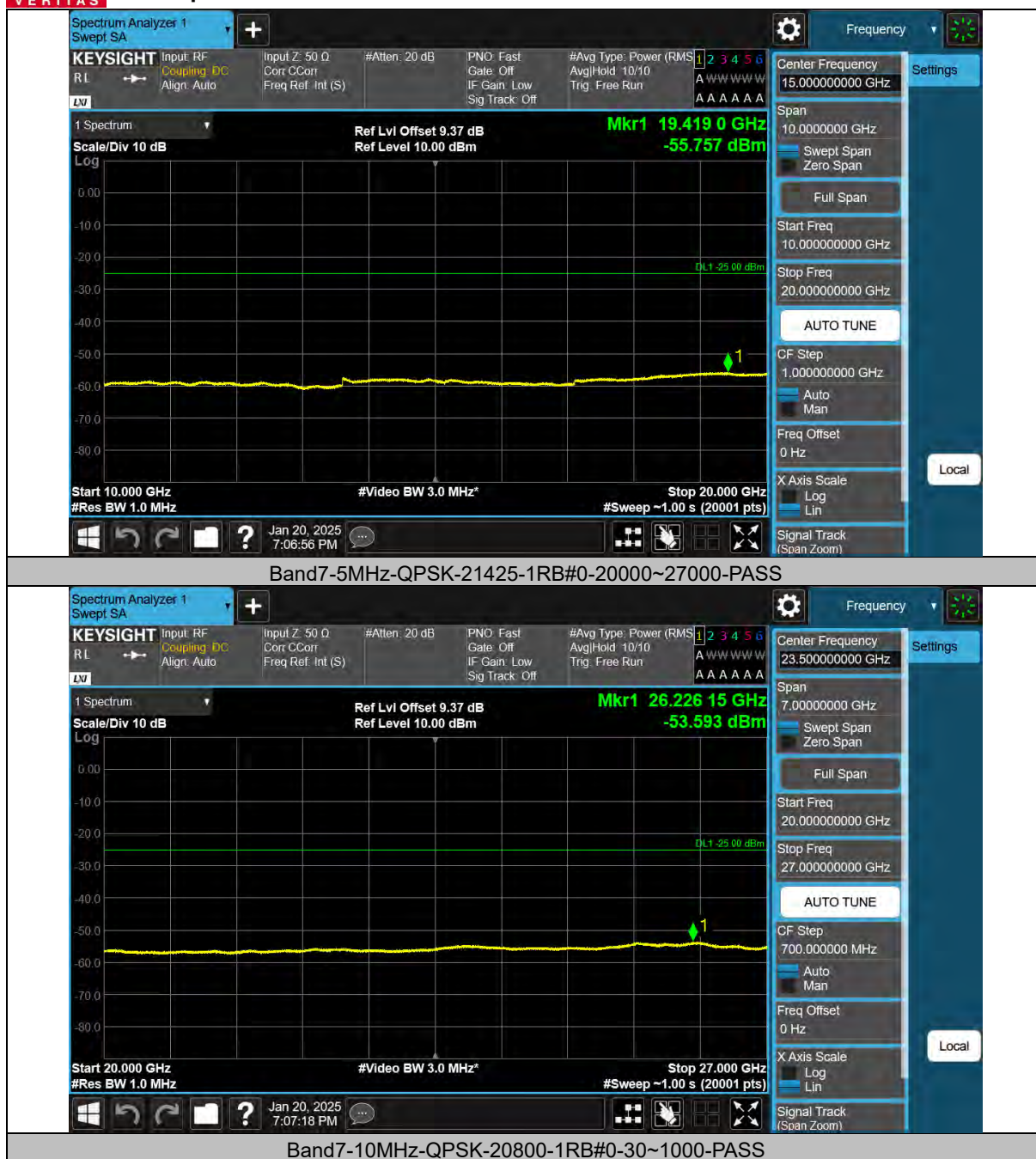
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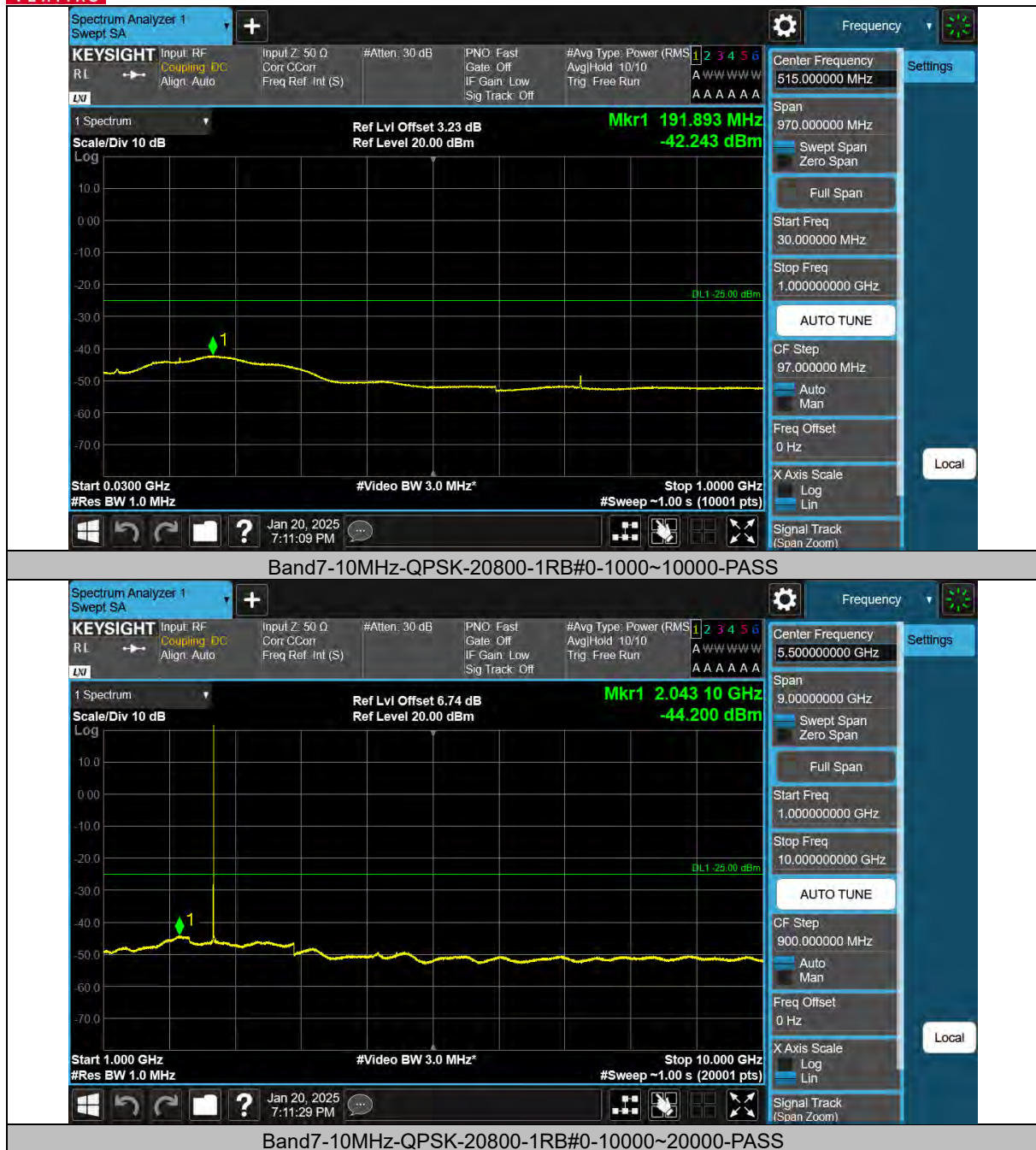
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VERITAS

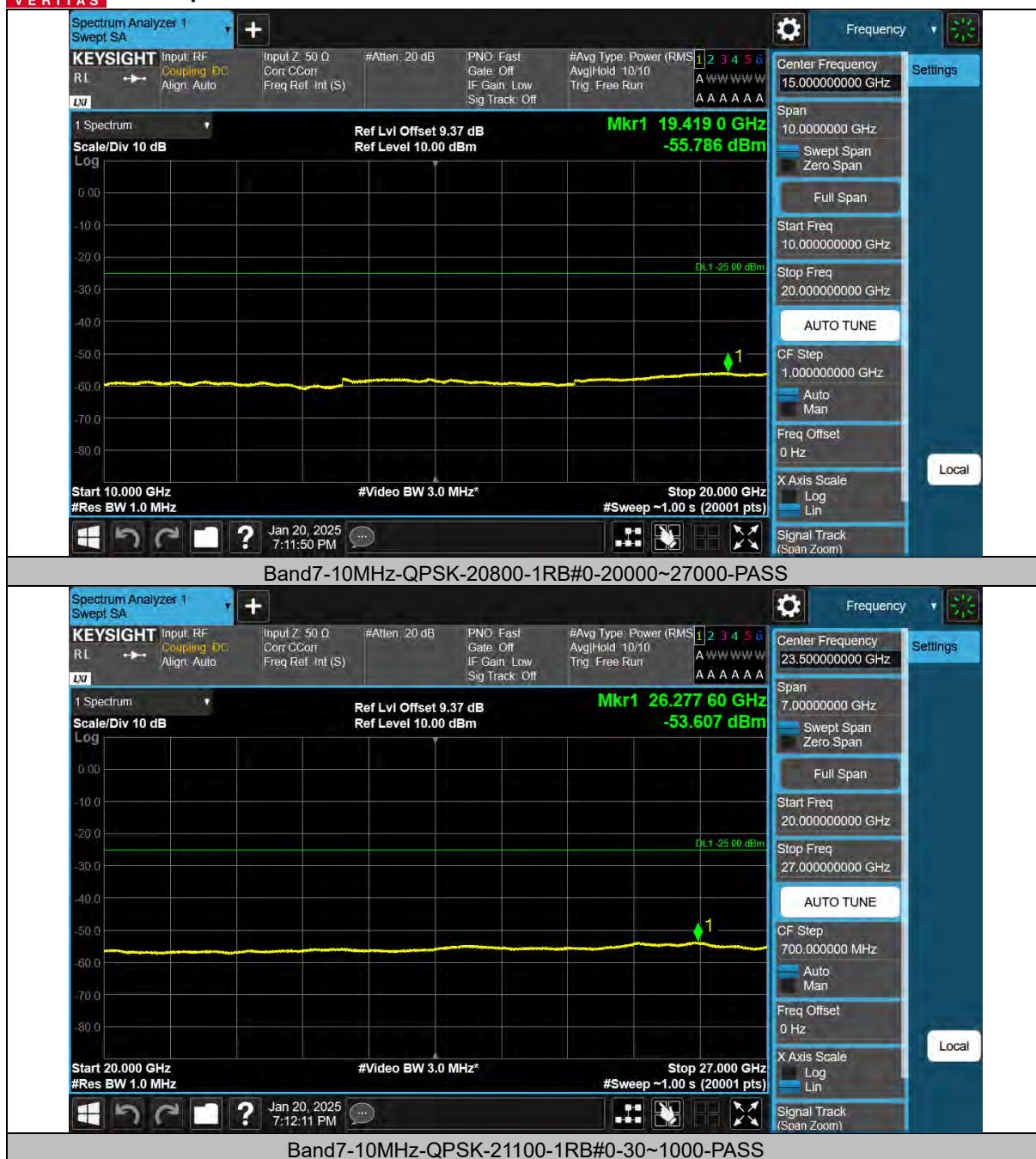
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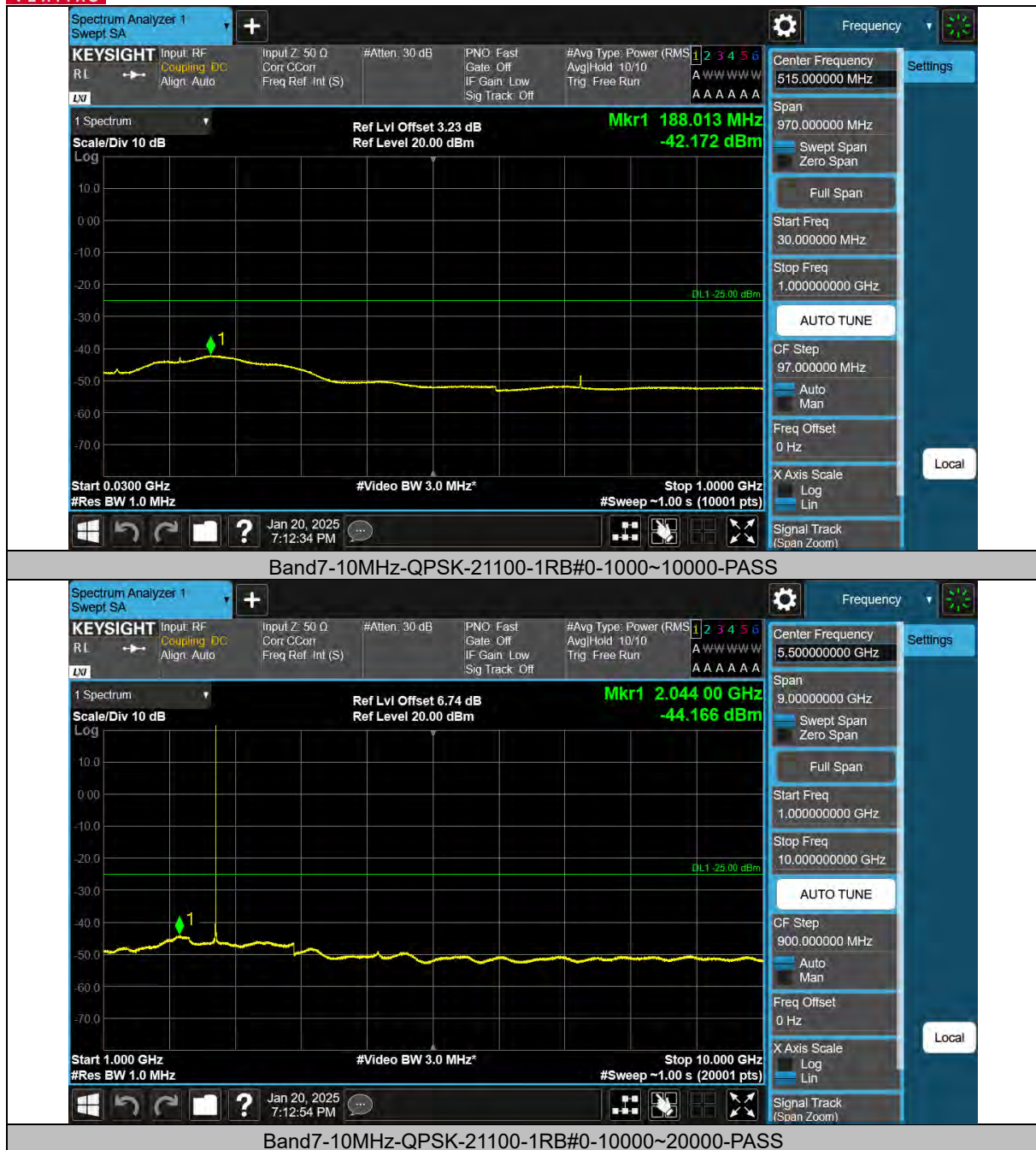
Test Report No.: PSU-NQN2412090110RF03





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