



Test Report No.: PSU-NQN2412090110RF01

5 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



6 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.



7 APPENDIX:

GSM850

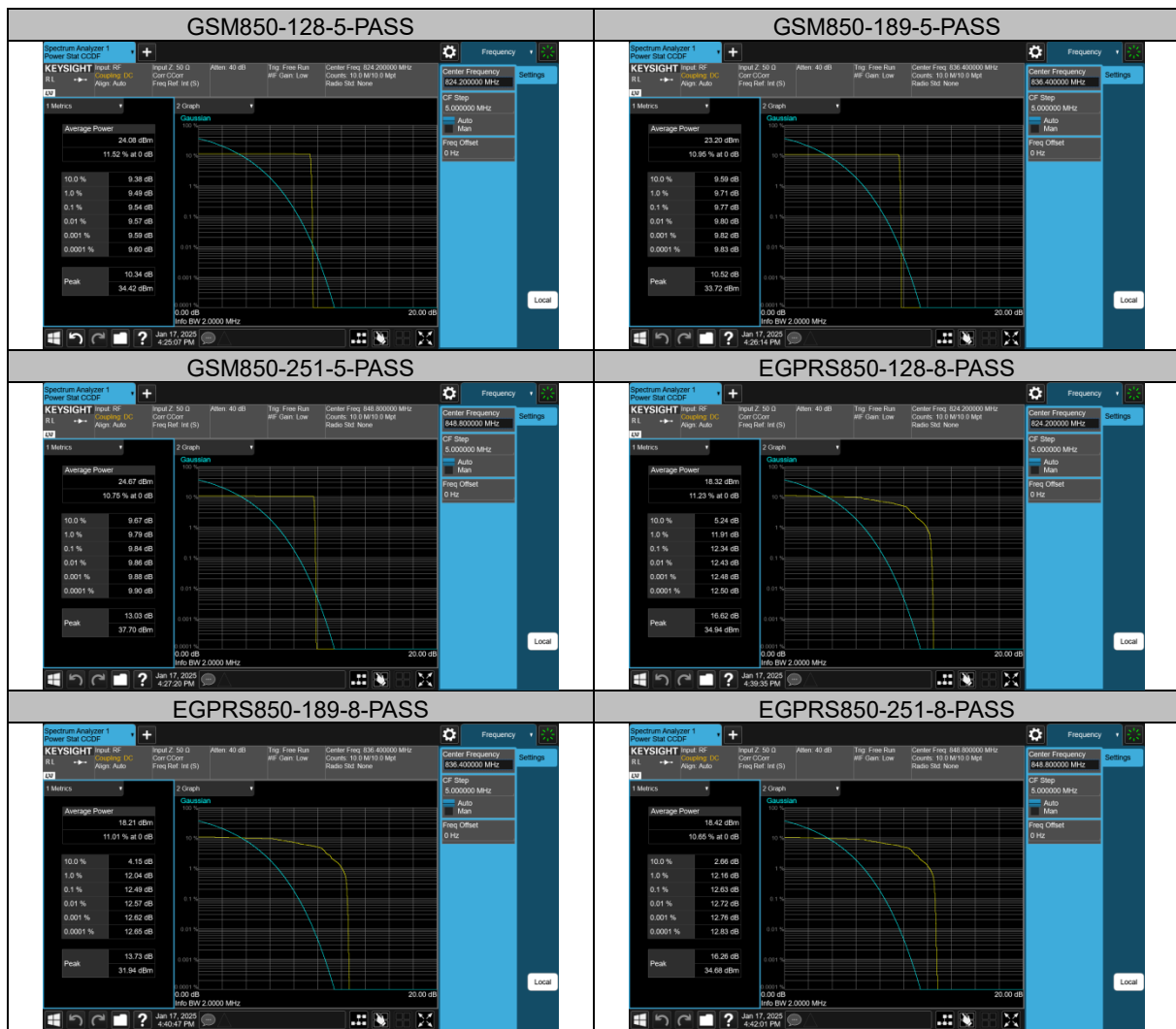
PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Channel	Result(dB)	Limit(dB)	Verdict
GSM850	128	9.54	13	PASS
GSM850	189	9.77	13	PASS
GSM850	251	9.84	13	PASS
EGPRS850	128	12.34	13	PASS
EGPRS850	189	12.49	13	PASS
EGPRS850	251	12.63	13	PASS



Test Graphs

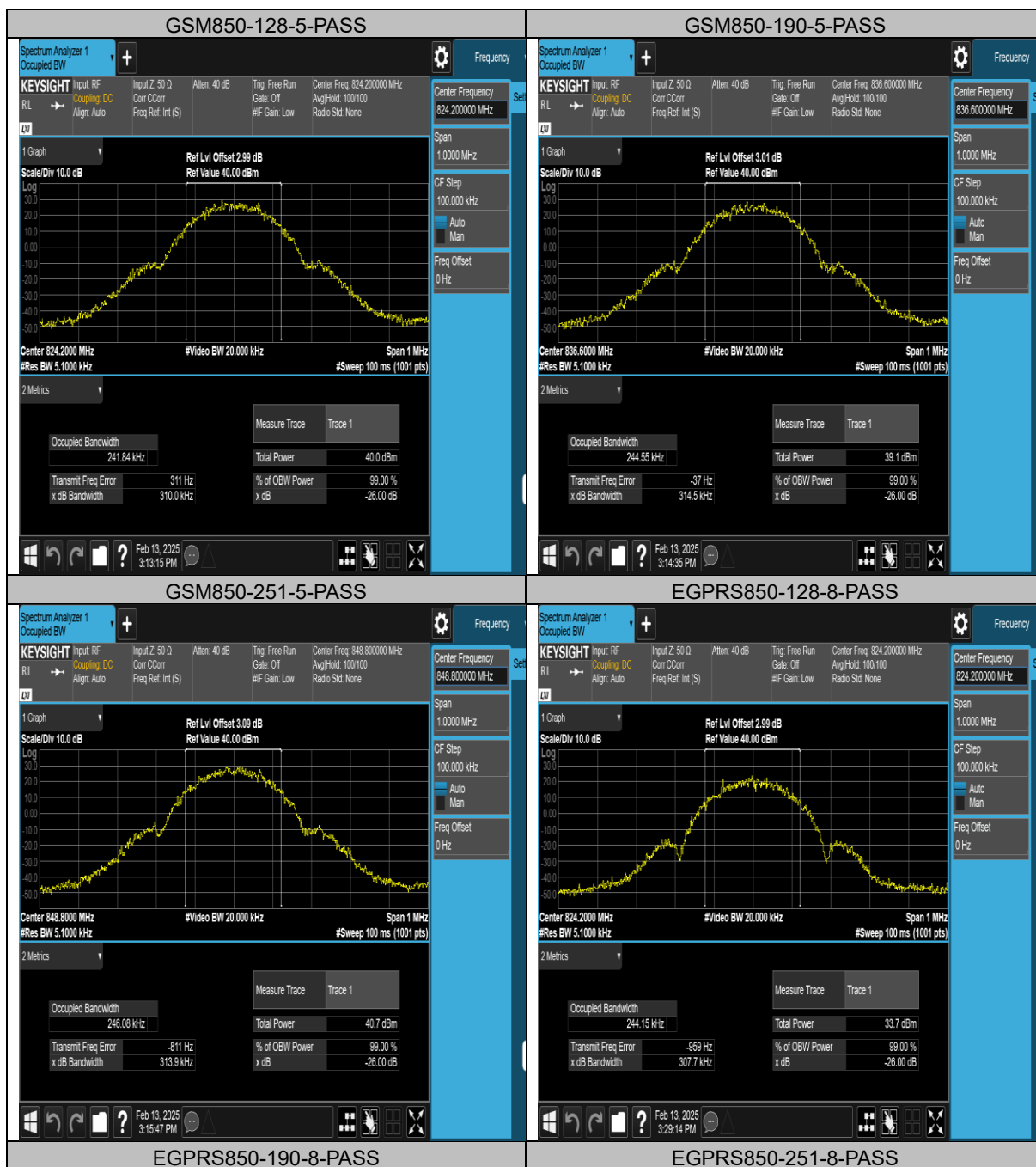


**26DB BANDWIDTH AND OCCUPIED BANDWIDTH****Test Result**

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
GSM850	128	0.24184	0.3100	PASS
GSM850	190	0.24455	0.3145	PASS
GSM850	251	0.24608	0.3139	PASS
EGPRS850	128	0.24415	0.3077	PASS
EGPRS850	190	0.24714	0.3088	PASS
EGPRS850	251	0.24492	0.3022	PASS



Test Graphs





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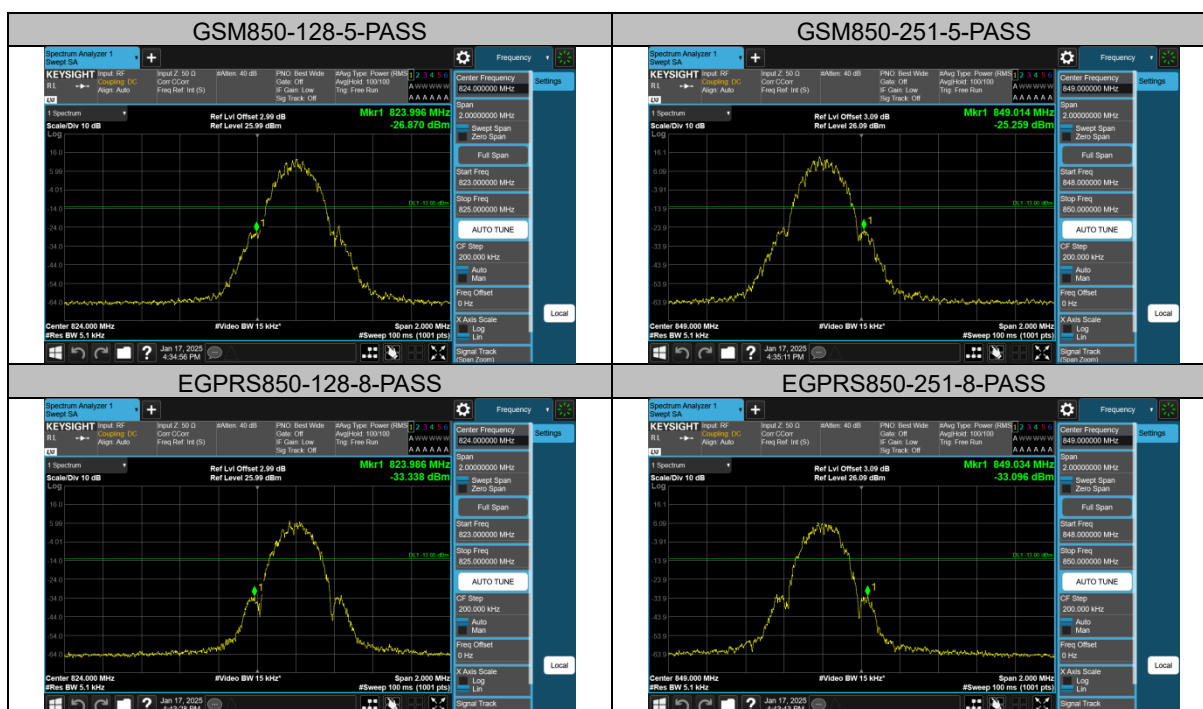


BAND EDGE

Test Result

Band	Channel	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GSM850	128	824.00	-26.87	-13	PASS
GSM850	251	849.01	-25.26	-13	PASS
EGPRS850	128	823.99	-33.34	-13	PASS
EGPRS850	251	849.03	-33.10	-13	PASS

Test Graphs

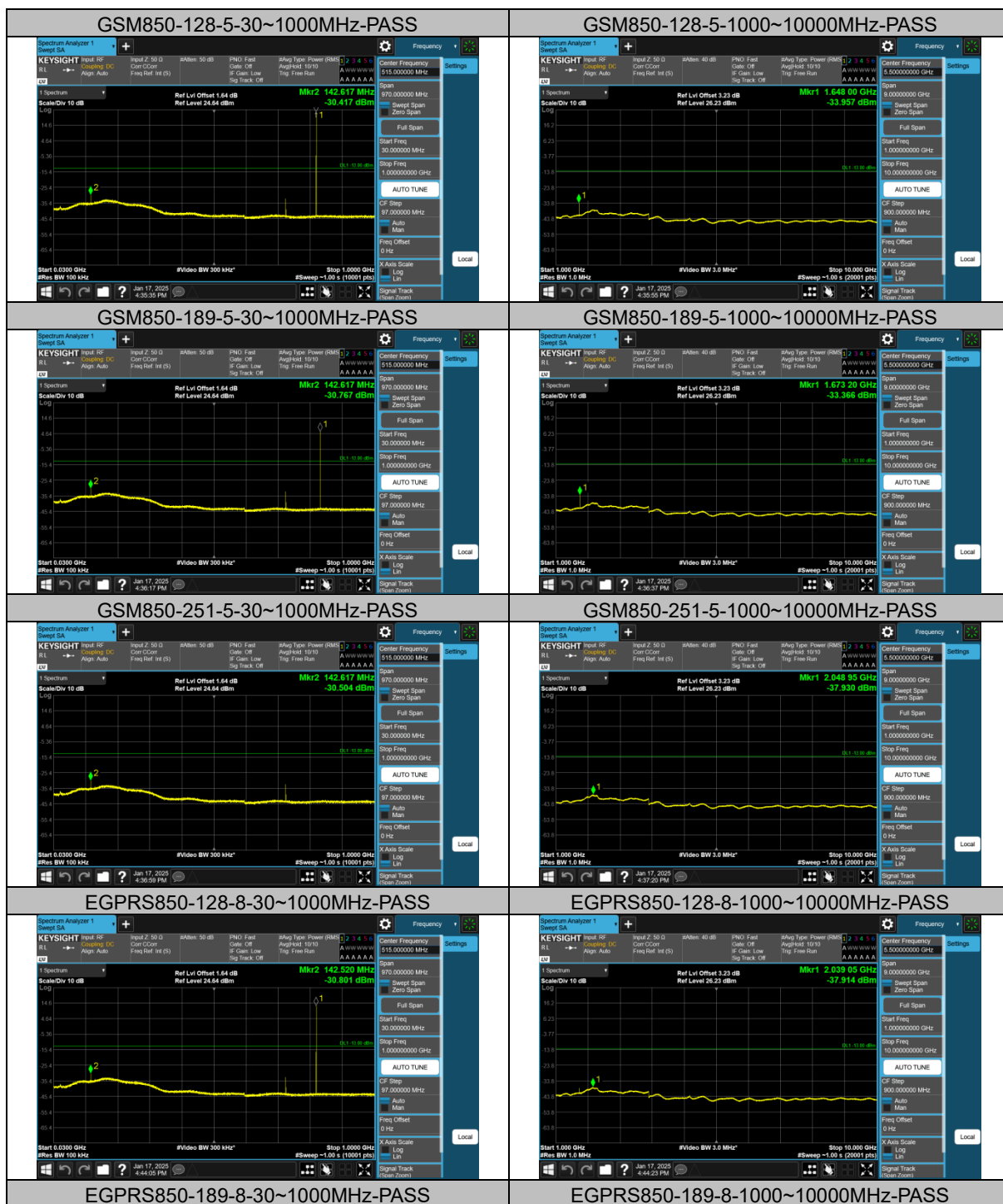


**CONDUCTED SPURIOUS EMISSION****Test Result**

Band	Channel	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GSM850	128	30~1000MHz	142.62	-30.42	-13	PASS
GSM850	128	1000~10000MHz	1648	-33.96	-13	PASS
GSM850	189	30~1000MHz	142.62	-30.77	-13	PASS
GSM850	189	1000~10000MHz	1673.2	-33.37	-13	PASS
GSM850	251	30~1000MHz	142.62	-30.5	-13	PASS
GSM850	251	1000~10000MHz	2048.95	-37.93	-13	PASS
EGPRS850	128	30~1000MHz	142.52	-30.8	-13	PASS
EGPRS850	128	1000~10000MHz	2039.05	-37.91	-13	PASS
EGPRS850	189	30~1000MHz	142.62	-30.52	-13	PASS
EGPRS850	189	1000~10000MHz	2012.05	-37.98	-13	PASS
EGPRS850	251	30~1000MHz	142.62	-30.57	-13	PASS
EGPRS850	251	1000~10000MHz	2028.25	-37.89	-13	PASS

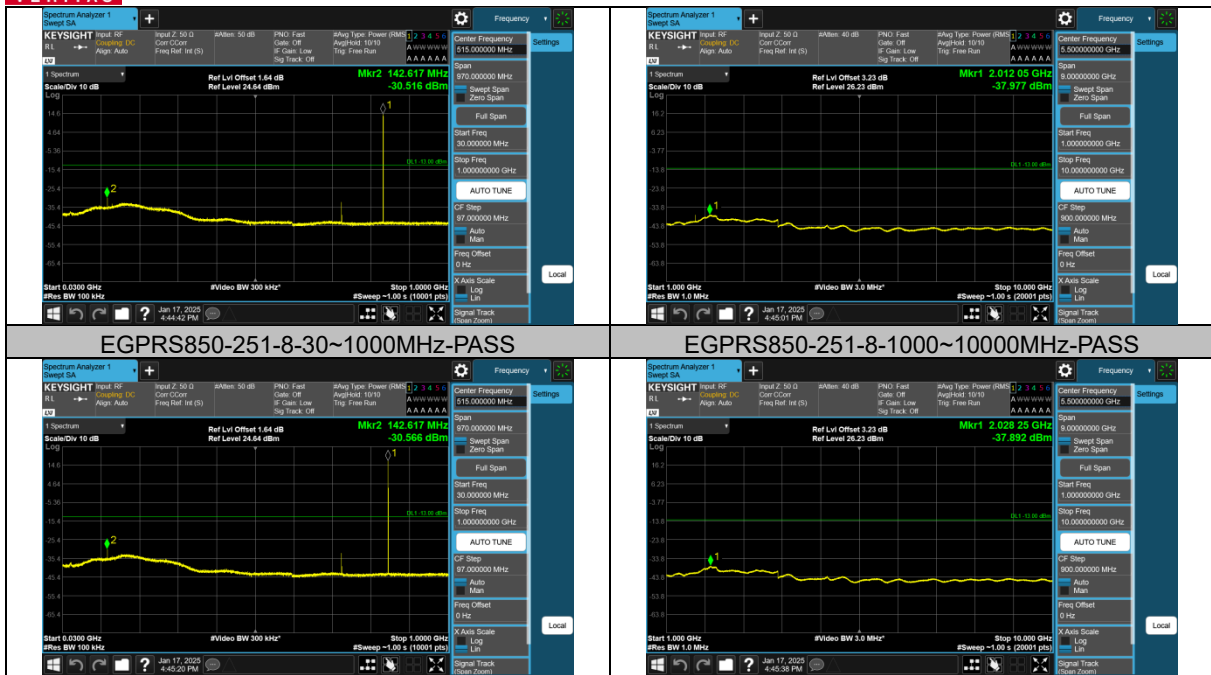


Test Graphs





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FREQUENCY STABILITY

Test Result

Voltage							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	VN	NT	100.00	0.121330	±2.5	PASS
GSM850	128	VL	NT	-460.00	-0.558117	±2.5	PASS
GSM850	128	VH	NT	-180.00	-0.218394	±2.5	PASS
GSM850	251	VN	NT	520.00	0.612630	±2.5	PASS
GSM850	251	VL	NT	-250.00	-0.294533	±2.5	PASS
GSM850	251	VH	NT	1410.00	1.661169	±2.5	PASS

Temperature							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	NV	-30	1290.00	1.565154	±2.5	PASS
GSM850	128	NV	-20	-630.00	-0.764378	±2.5	PASS
GSM850	128	NV	-10	470.00	0.570250	±2.5	PASS
GSM850	128	NV	0	-300.00	-0.363989	±2.5	PASS
GSM850	128	NV	10	140.00	0.169862	±2.5	PASS
GSM850	128	NV	20	-810.00	-0.982771	±2.5	PASS
GSM850	128	NV	30	270.00	0.327590	±2.5	PASS
GSM850	128	NV	40	40.00	0.048532	±2.5	PASS
GSM850	128	NV	50	-10.00	-0.012133	±2.5	PASS
GSM850	251	NV	-30	420.00	0.494816	±2.5	PASS
GSM850	251	NV	-20	-100.00	-0.117813	±2.5	PASS
GSM850	251	NV	-10	-190.00	-0.223845	±2.5	PASS
GSM850	251	NV	0	170.00	0.200283	±2.5	PASS
GSM850	251	NV	10	750.00	0.883600	±2.5	PASS
GSM850	251	NV	20	560.00	0.659755	±2.5	PASS
GSM850	251	NV	30	180.00	0.212064	±2.5	PASS
GSM850	251	NV	40	-830.00	-0.977851	±2.5	PASS
GSM850	251	NV	50	-30.00	-0.035344	±2.5	PASS



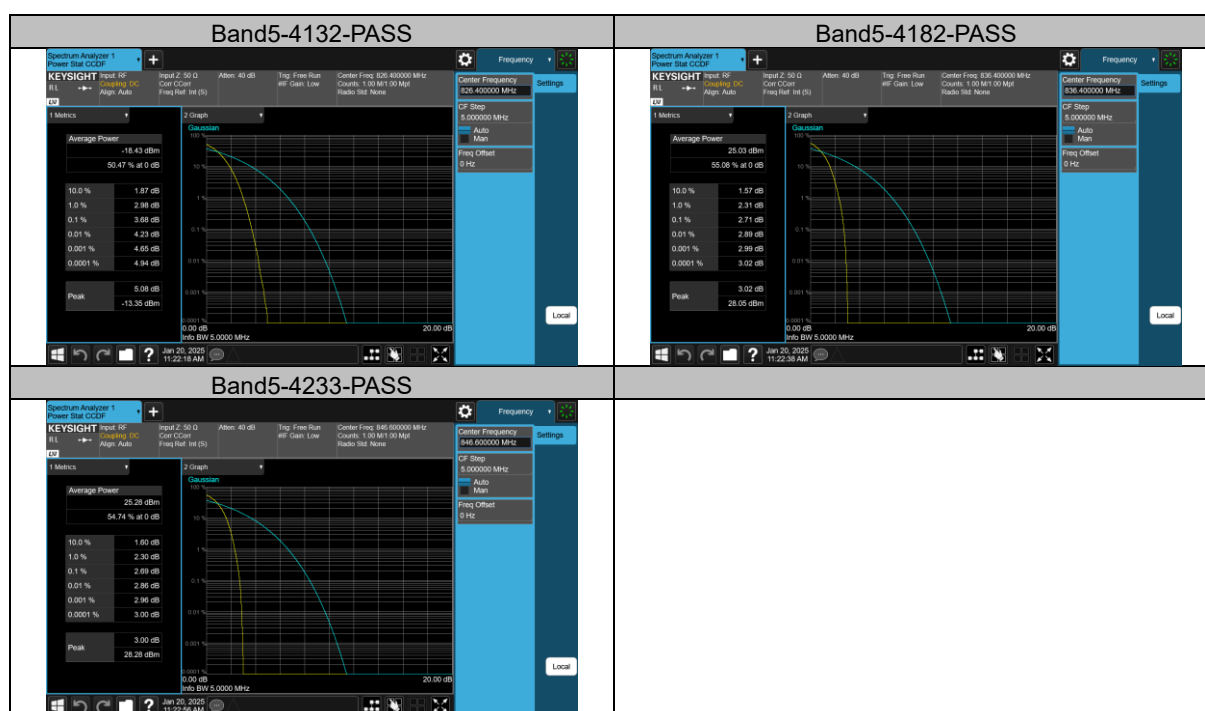
WCDMA B5

PEAK-TO-AVERAGE RATIO

Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band5	4132	3.68	13	PASS
Band5	4182	2.71	13	PASS
Band5	4233	2.69	13	PASS

Test Graphs



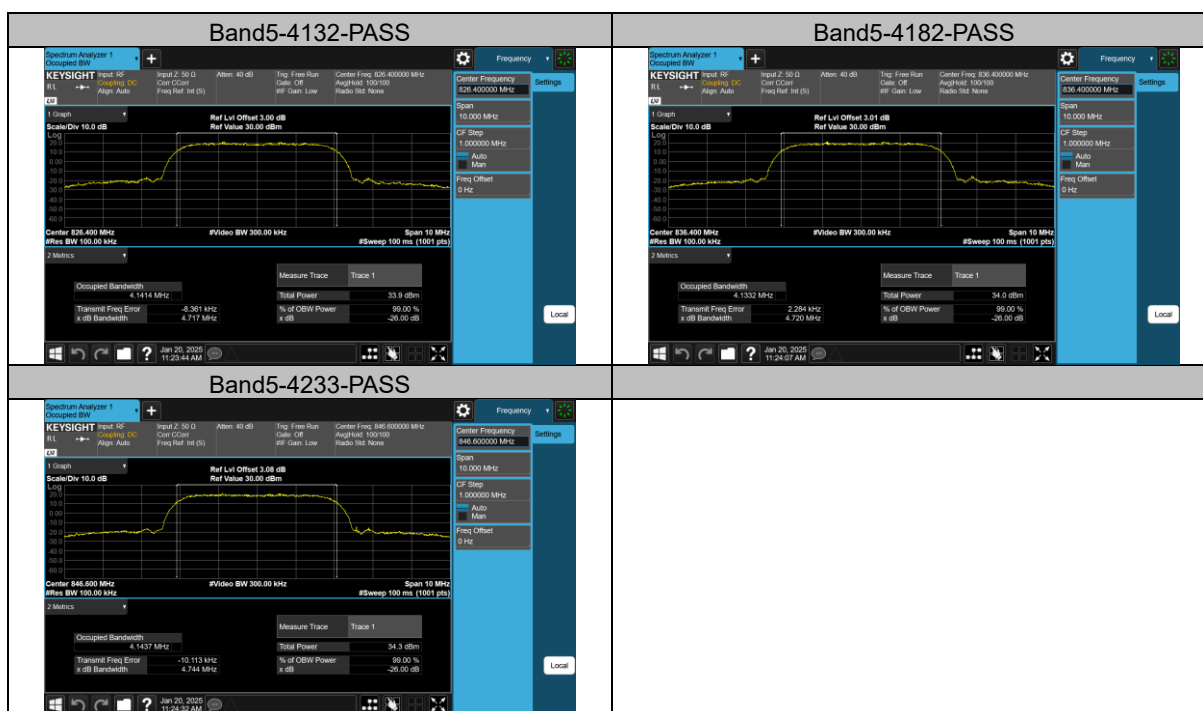


26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(kHz)	Verdict
Band5	4132	4.1414	4.717	---	PASS
Band5	4182	4.1332	4.720	---	PASS
Band5	4233	4.1437	4.744	---	PASS

Test Graphs



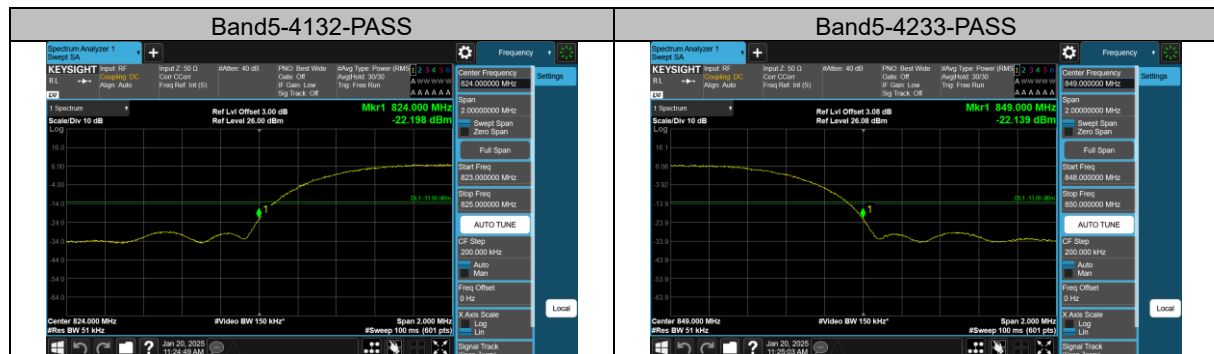


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BAND EDGE

Test Result

Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band5	4132	824.00	-22.20	-13	PASS
Band5	4233	849.00	-22.14	-13	PASS

Test Graphs





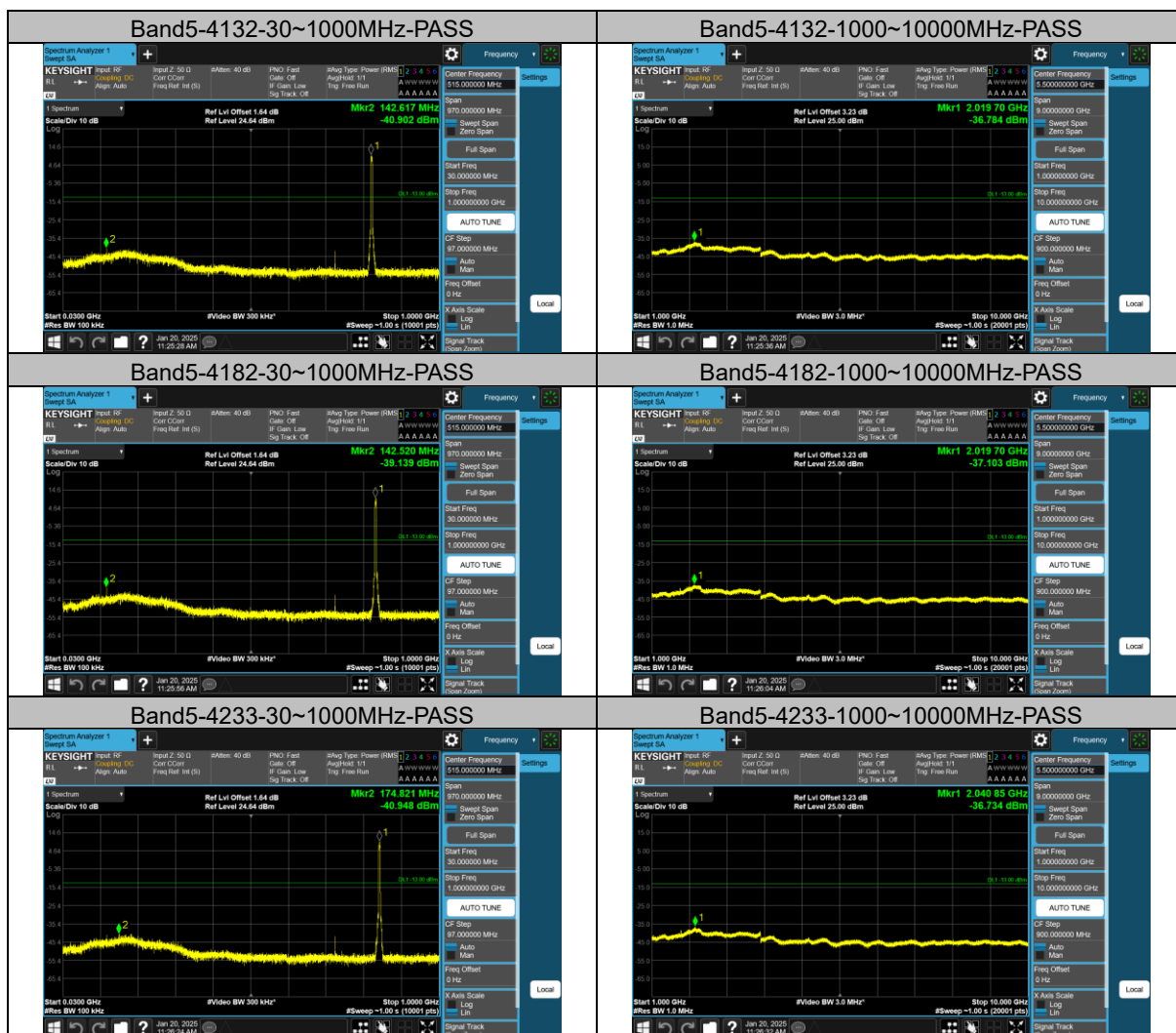
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CONDUCTED SPURIOUS EMISSION

Test Result

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

Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band5	4132	30~1000MHz	142.62	-40.90	-13	PASS
Band5	4132	1000~10000MHz	2019.7	-36.78	-13	PASS
Band5	4182	30~1000MHz	142.52	-39.14	-13	PASS
Band5	4182	1000~10000MHz	2019.7	-37.10	-13	PASS
Band5	4233	30~1000MHz	174.82	-40.95	-13	PASS
Band5	4233	1000~10000MHz	2040.85	-36.73	-13	PASS

Test Graphs



**FREQUENCY STABILITY****Test Result**

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	4132	VN	NT	-960.00	-1.1617	±2.5	PASS
Band5	4132	VL	NT	-914.00	-1.1060	±2.5	PASS
Band5	4132	VH	NT	-1193.00	-1.4436	±2.5	PASS
Band5	4182	VN	NT	475.00	-1.4264	±2.5	PASS
Band5	4182	VL	NT	288.00	0.5679	±2.5	PASS
Band5	4182	VH	NT	640.00	0.3443	±2.5	PASS
Band5	4233	VN	NT	-672.00	-0.7938	±2.5	PASS
Band5	4233	VL	NT	-976.00	-1.1528	±2.5	PASS
Band5	4233	VH	NT	-1231.00	-1.4541	±2.5	PASS

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	4132	NV	-30	-703.00	-0.8507	±2.5	PASS
Band5	4132	NV	-20	-739.00	-0.8942	±2.5	PASS
Band5	4132	NV	-10	-999.00	-1.2089	±2.5	PASS
Band5	4132	NV	0	-751.00	-0.9088	±2.5	PASS
Band5	4132	NV	10	-408.00	-0.4937	±2.5	PASS
Band5	4132	NV	20	-1169.00	-1.4146	±2.5	PASS
Band5	4132	NV	30	-562.00	-0.6801	±2.5	PASS
Band5	4132	NV	40	-465.00	-0.5627	±2.5	PASS
Band5	4132	NV	50	-1017.00	-1.2306	±2.5	PASS
Band5	4182	NV	-30	586.00	0.7006	±2.5	PASS
Band5	4182	NV	-20	-22.00	-0.0263	±2.5	PASS
Band5	4182	NV	-10	543.00	0.6492	±2.5	PASS
Band5	4182	NV	0	158.00	0.1889	±2.5	PASS
Band5	4182	NV	10	216.00	0.2582	±2.5	PASS
Band5	4182	NV	20	175.00	0.2092	±2.5	PASS
Band5	4182	NV	30	589.00	0.7042	±2.5	PASS
Band5	4182	NV	40	170.00	0.2033	±2.5	PASS
Band5	4182	NV	50	328.00	0.3922	±2.5	PASS
Band5	4233	NV	-30	-941.00	-1.1115	±2.5	PASS
Band5	4233	NV	-20	-1161.00	-1.3714	±2.5	PASS
Band5	4233	NV	-10	-999.00	-1.1800	±2.5	PASS
Band5	4233	NV	0	-1376.00	-1.6253	±2.5	PASS
Band5	4233	NV	10	-885.00	-1.0454	±2.5	PASS
Band5	4233	NV	20	-867.00	-1.0241	±2.5	PASS
Band5	4233	NV	30	-1050.00	-1.2403	±2.5	PASS
Band5	4233	NV	40	-978.00	-1.1552	±2.5	PASS
Band5	4233	NV	50	-682.00	-0.8056	±2.5	PASS



LTE BAND 5

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band5	1.4MHz	QPSK	20407	1RB#0	4.70	13	PASS
Band5	1.4MHz	QPSK	20407	6RB#0	5.17	13	PASS
Band5	1.4MHz	QPSK	20525	1RB#0	4.89	13	PASS
Band5	1.4MHz	QPSK	20525	6RB#0	5.27	13	PASS
Band5	1.4MHz	QPSK	20643	1RB#0	4.79	13	PASS
Band5	1.4MHz	QPSK	20643	6RB#0	5.11	13	PASS
Band5	1.4MHz	16QAM	20407	1RB#0	5.59	13	PASS
Band5	1.4MHz	16QAM	20407	6RB#0	5.99	13	PASS
Band5	1.4MHz	16QAM	20525	1RB#0	5.79	13	PASS
Band5	1.4MHz	16QAM	20525	6RB#0	6.04	13	PASS
Band5	1.4MHz	16QAM	20643	1RB#0	5.66	13	PASS
Band5	1.4MHz	16QAM	20643	6RB#0	5.94	13	PASS
Band5	3MHz	QPSK	20415	1RB#0	4.70	13	PASS
Band5	3MHz	QPSK	20415	15RB#0	5.27	13	PASS
Band5	3MHz	QPSK	20525	1RB#0	4.97	13	PASS
Band5	3MHz	QPSK	20525	15RB#0	5.26	13	PASS
Band5	3MHz	QPSK	20635	1RB#0	4.90	13	PASS
Band5	3MHz	QPSK	20635	15RB#0	5.20	13	PASS
Band5	3MHz	16QAM	20415	1RB#0	5.54	13	PASS
Band5	3MHz	16QAM	20415	15RB#0	6.05	13	PASS
Band5	3MHz	16QAM	20525	1RB#0	5.85	13	PASS
Band5	3MHz	16QAM	20525	15RB#0	6.07	13	PASS
Band5	3MHz	16QAM	20635	1RB#0	5.73	13	PASS
Band5	3MHz	16QAM	20635	15RB#0	6.02	13	PASS
Band5	5MHz	QPSK	20425	1RB#0	4.68	13	PASS
Band5	5MHz	QPSK	20425	25RB#0	5.31	13	PASS
Band5	5MHz	QPSK	20525	1RB#0	4.96	13	PASS
Band5	5MHz	QPSK	20525	25RB#0	5.26	13	PASS
Band5	5MHz	QPSK	20625	1RB#0	4.74	13	PASS
Band5	5MHz	QPSK	20625	25RB#0	5.27	13	PASS
Band5	5MHz	16QAM	20425	1RB#0	5.52	13	PASS
Band5	5MHz	16QAM	20425	25RB#0	6.07	13	PASS
Band5	5MHz	16QAM	20525	1RB#0	5.81	13	PASS
Band5	5MHz	16QAM	20525	25RB#0	6.04	13	PASS
Band5	5MHz	16QAM	20625	1RB#0	5.60	13	PASS
Band5	5MHz	16QAM	20625	25RB#0	6.05	13	PASS
Band5	10MHz	QPSK	20450	1RB#0	4.68	13	PASS
Band5	10MHz	QPSK	20450	50RB#0	5.49	13	PASS
Band5	10MHz	QPSK	20525	1RB#0	4.87	13	PASS
Band5	10MHz	QPSK	20525	50RB#0	5.39	13	PASS
Band5	10MHz	QPSK	20600	1RB#0	4.72	13	PASS
Band5	10MHz	QPSK	20600	50RB#0	5.36	13	PASS
Band5	10MHz	16QAM	20450	1RB#0	5.49	13	PASS
Band5	10MHz	16QAM	20450	50RB#0	6.33	13	PASS
Band5	10MHz	16QAM	20525	1RB#0	5.74	13	PASS

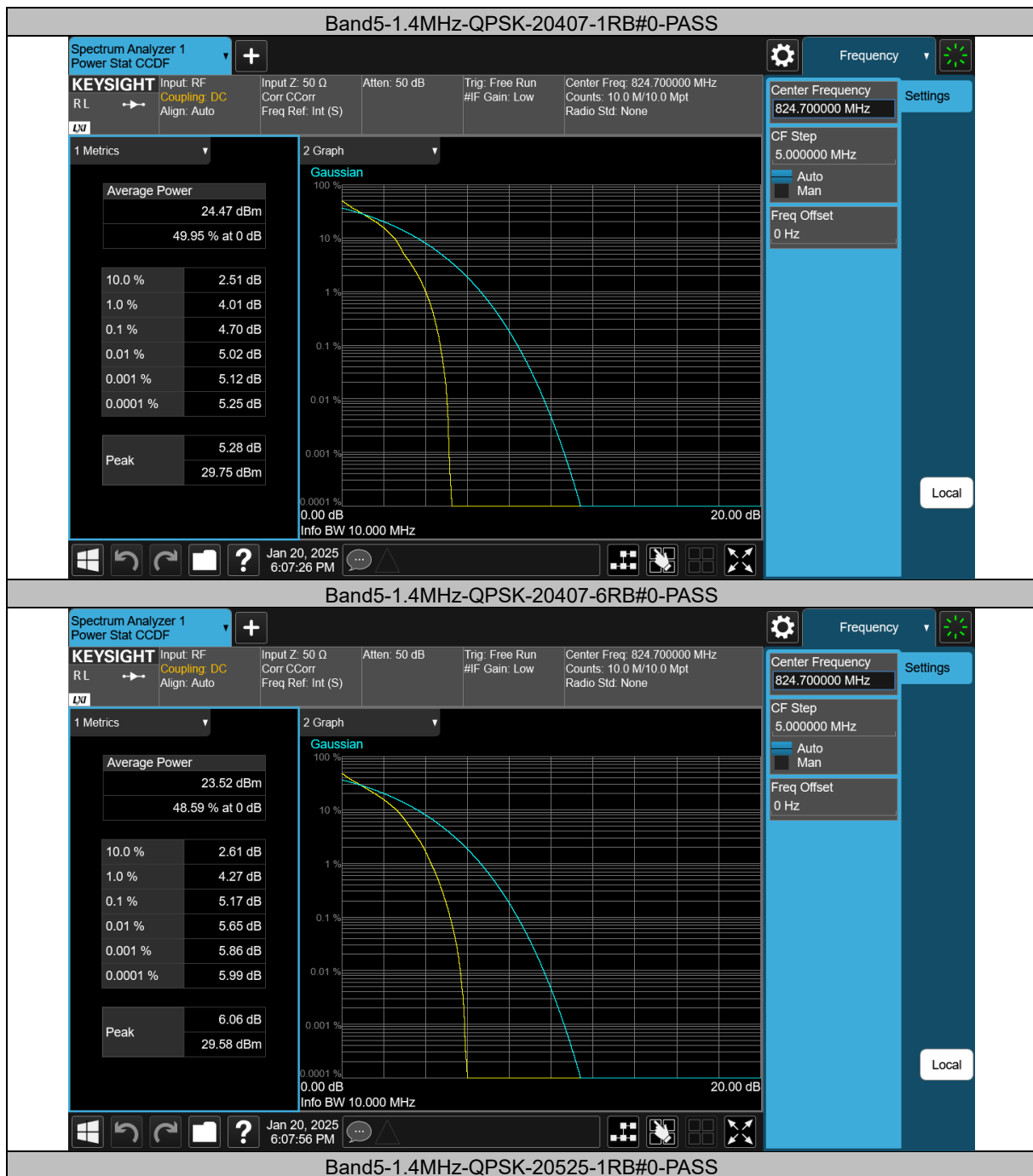


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Band5	10MHz	16QAM	20525	50RB#0	6.13	13	PASS
Band5	10MHz	16QAM	20600	1RB#0	5.53	13	PASS
Band5	10MHz	16QAM	20600	50RB#0	6.13	13	PASS

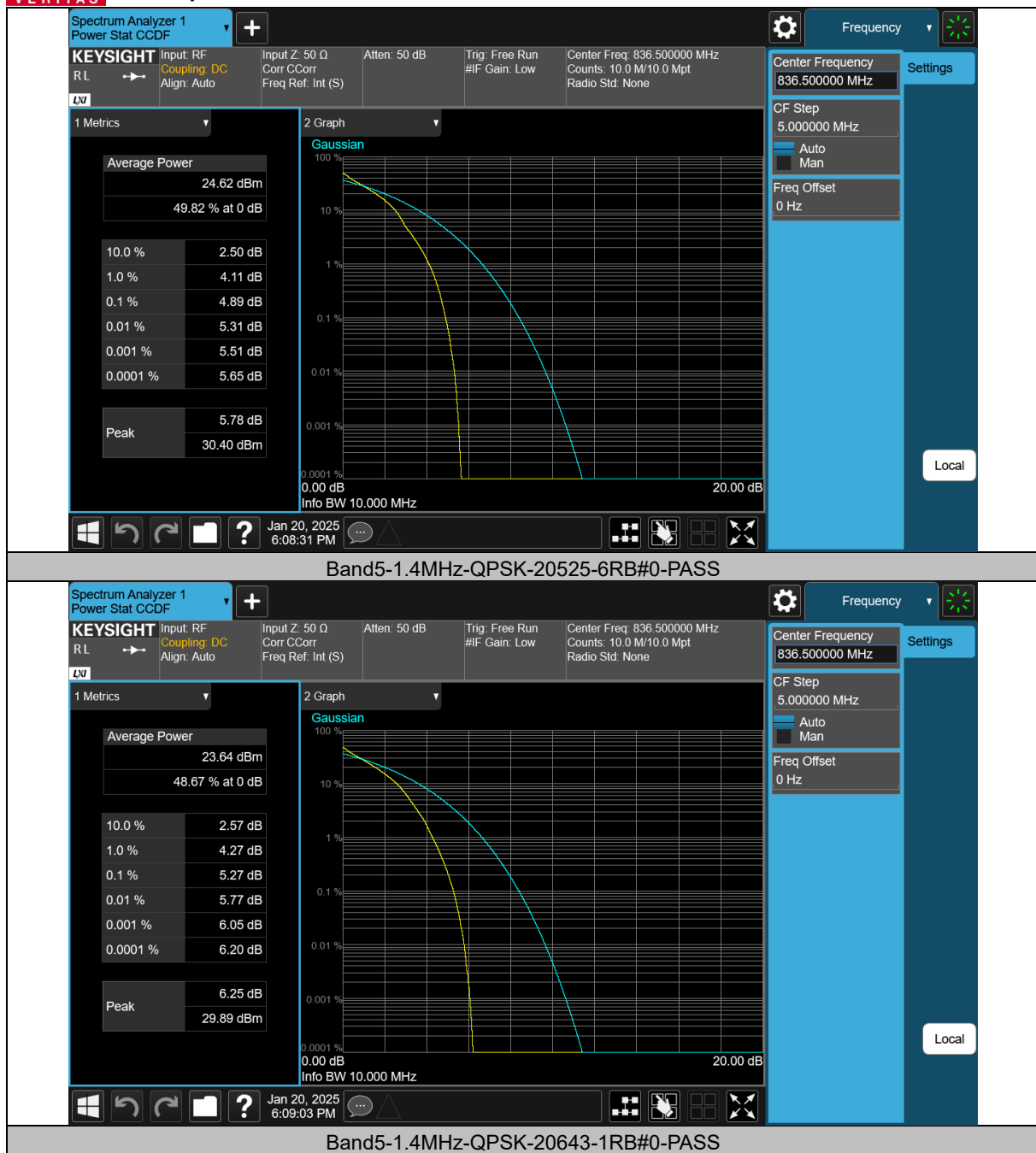


Test Graphs



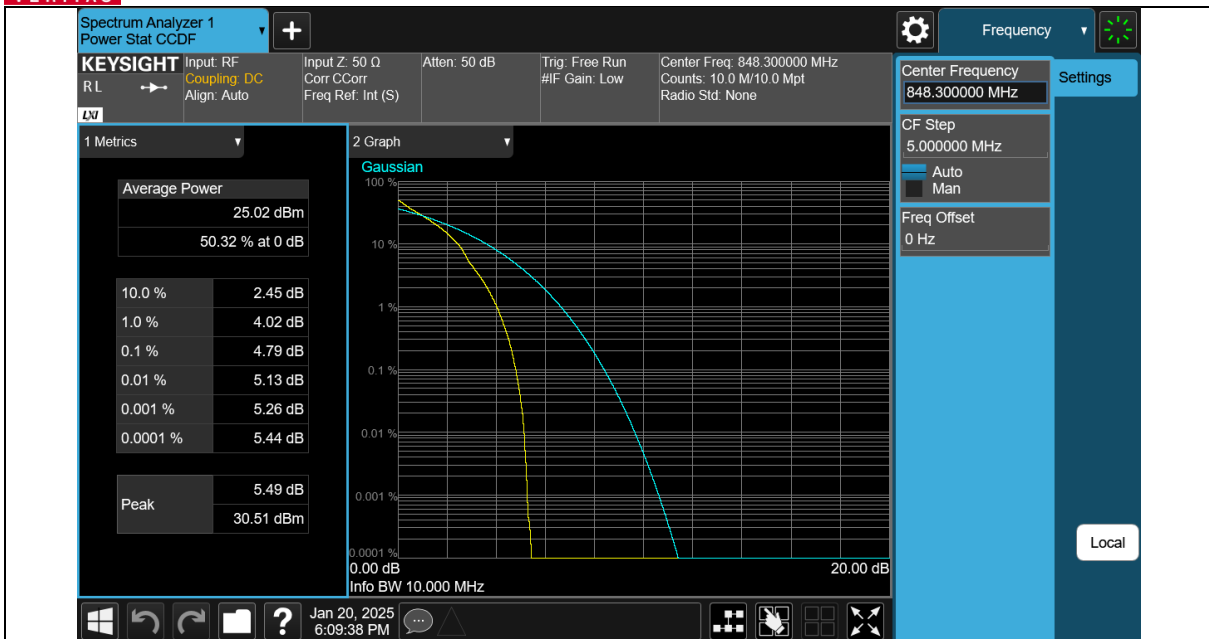


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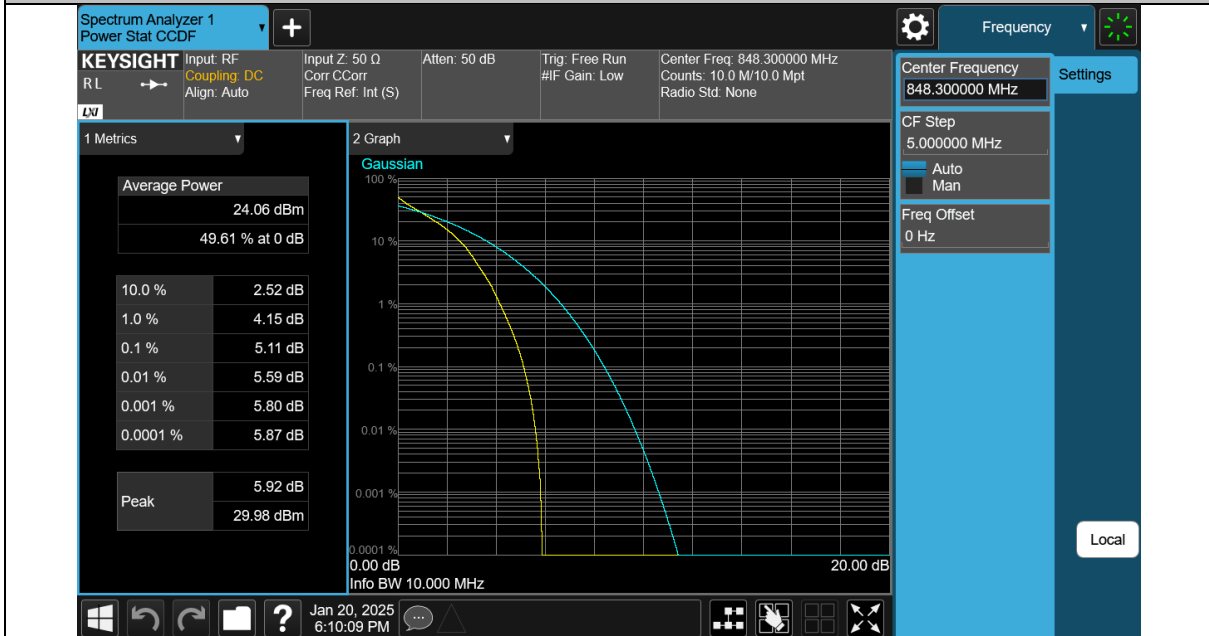




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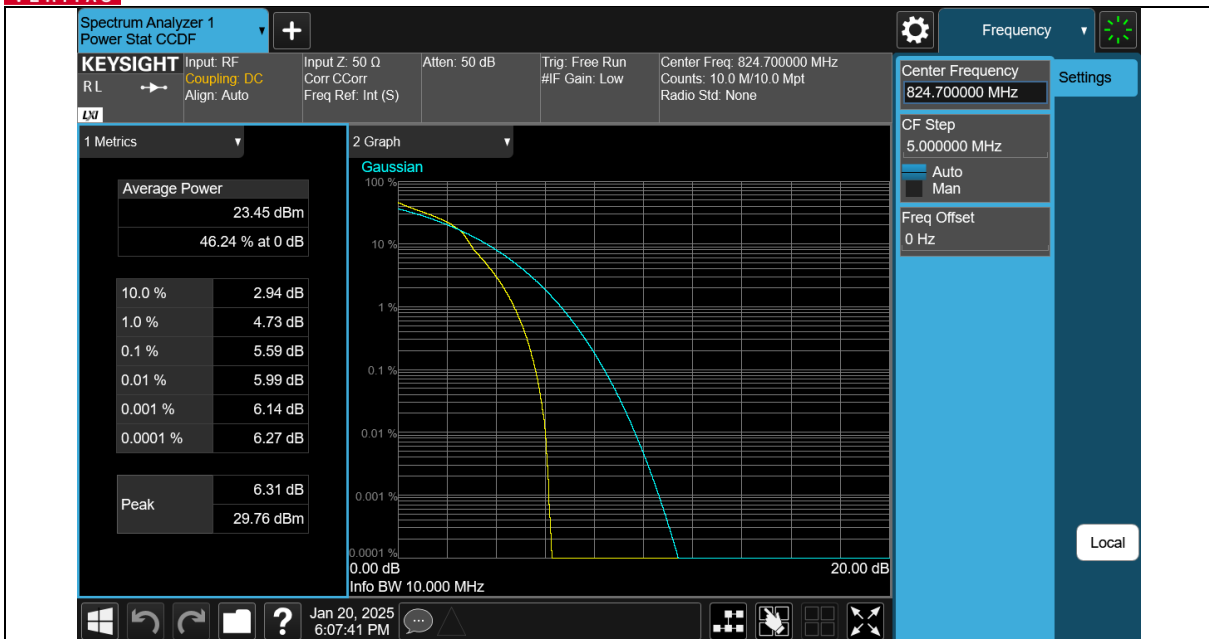
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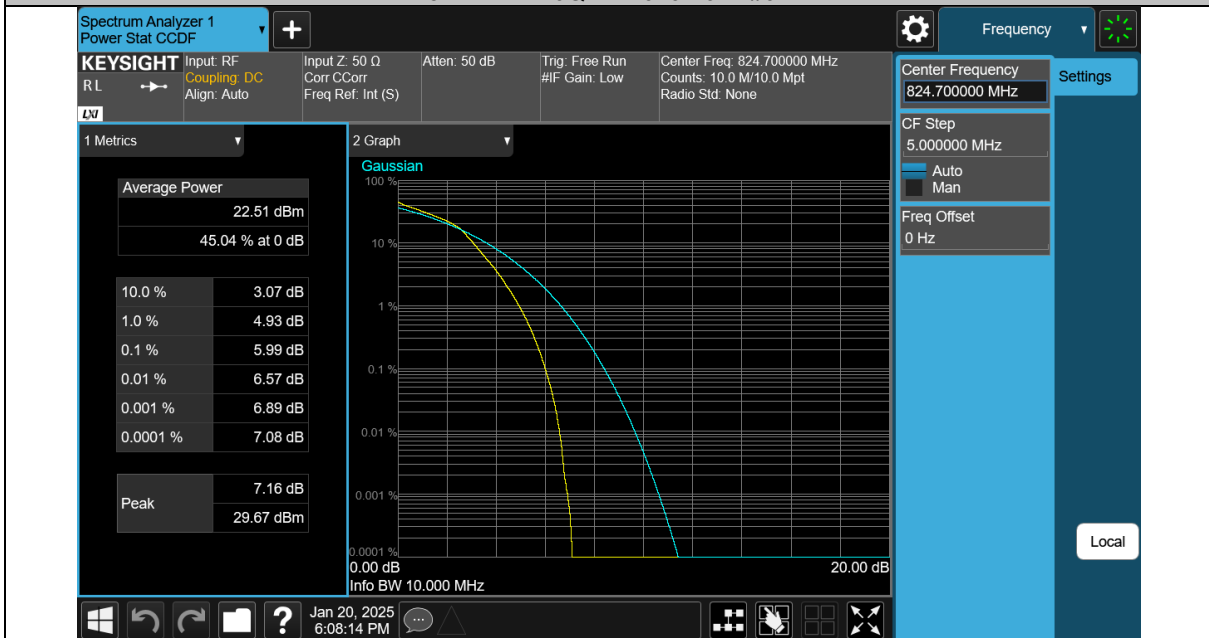
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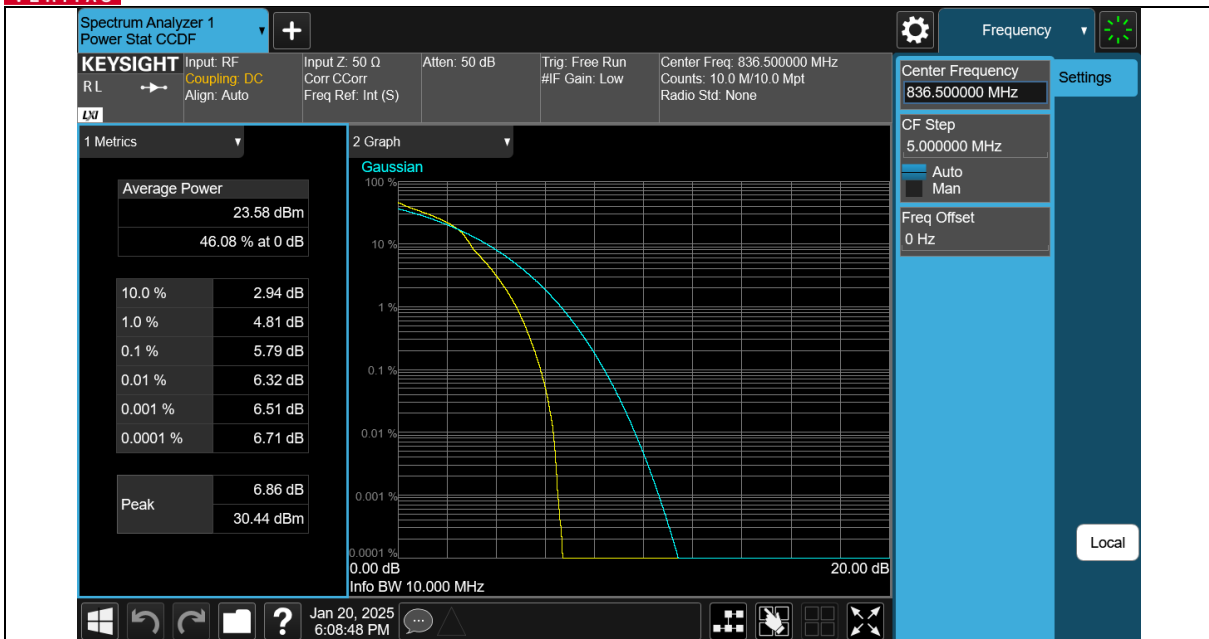
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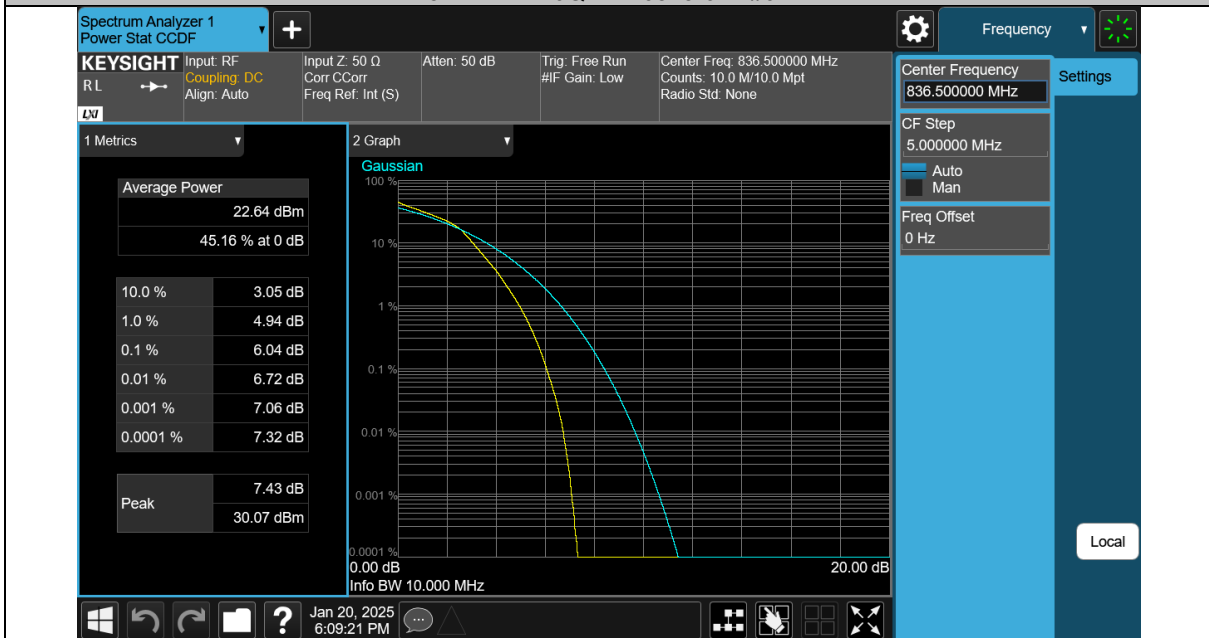
Band5-1.4MHz-16QAM-20525-1RB#0-PASS



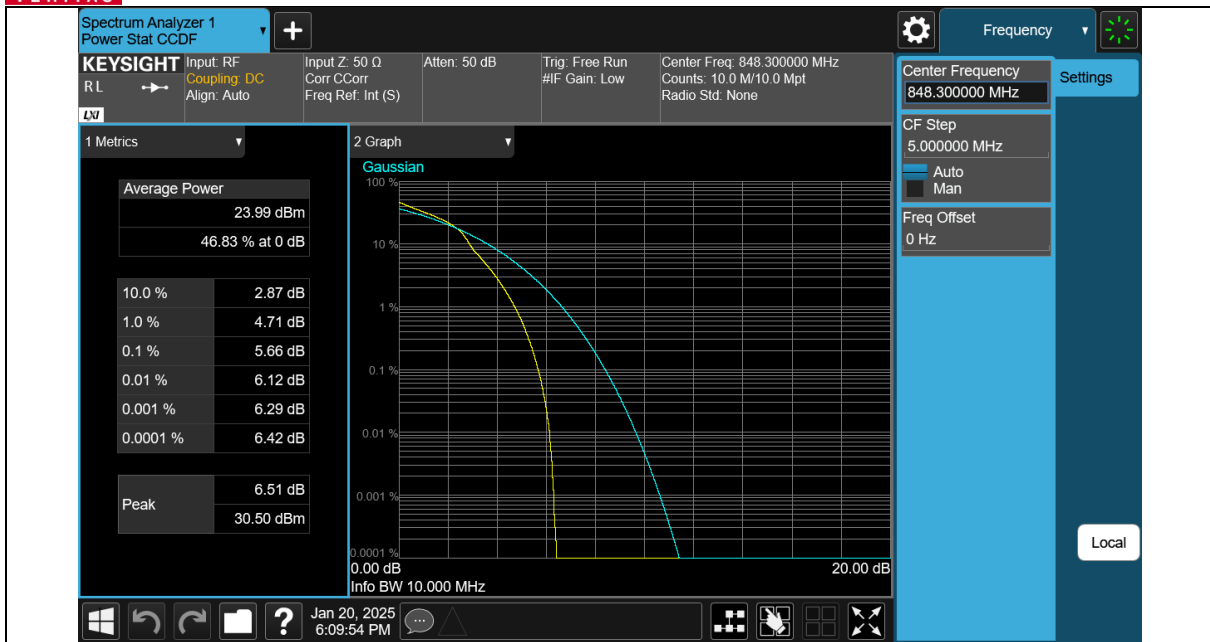
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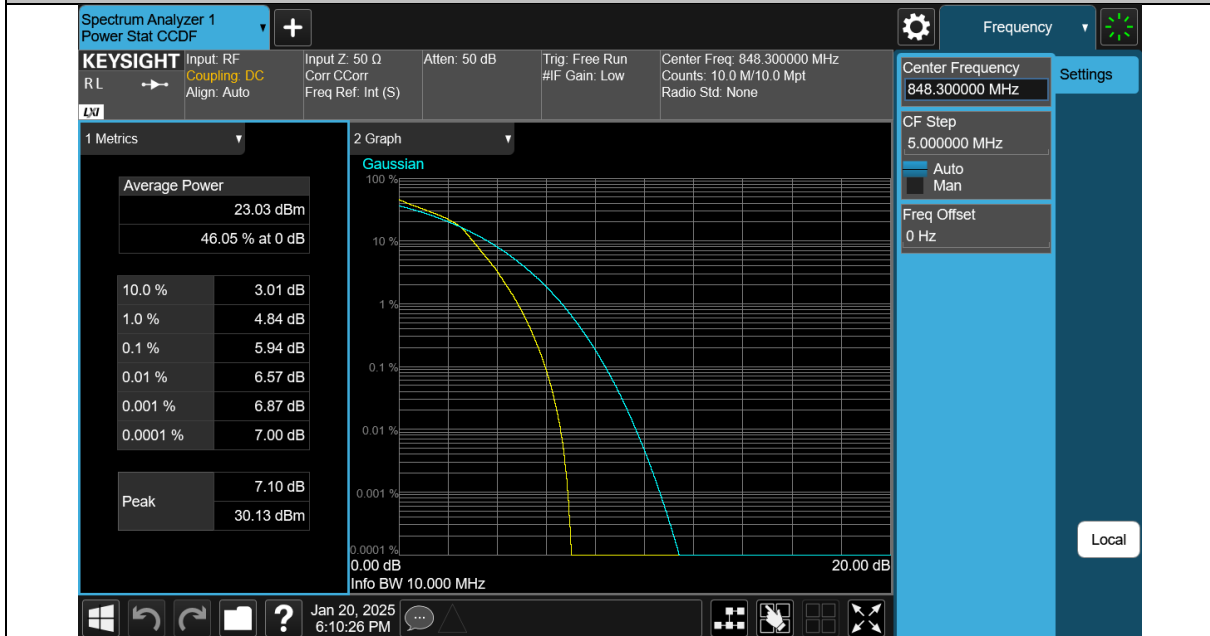
Band5-1.4MHz-16QAM-20525-6RB#0-PASS



Band5-1.4MHz-16QAM-20643-1RB#0-PASS



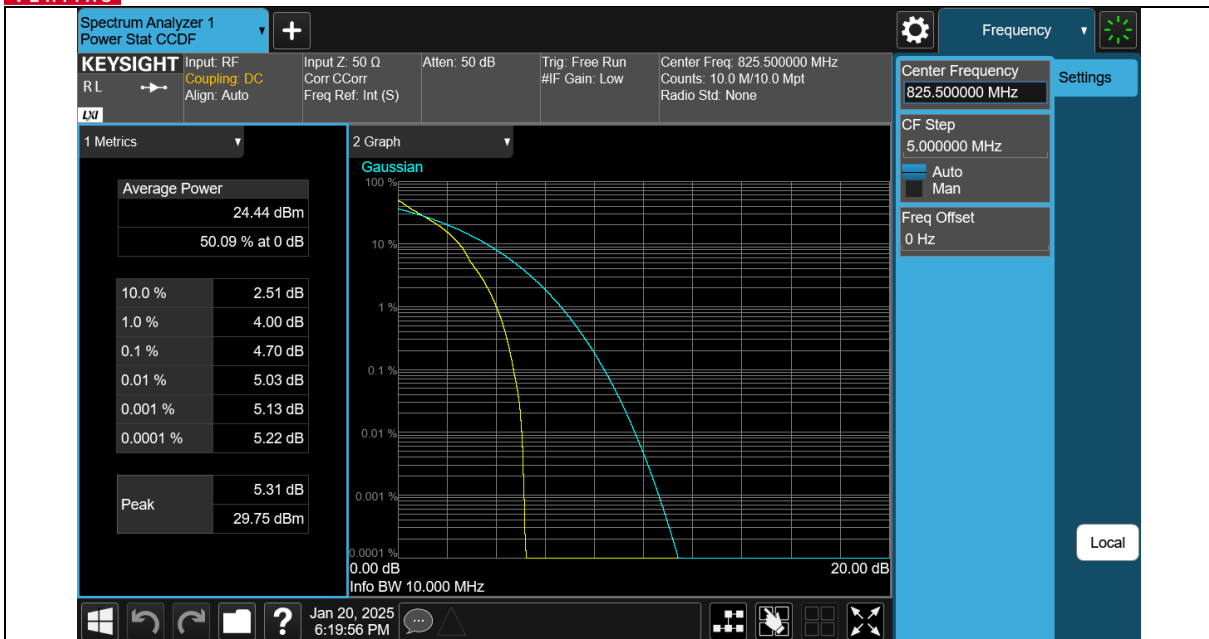
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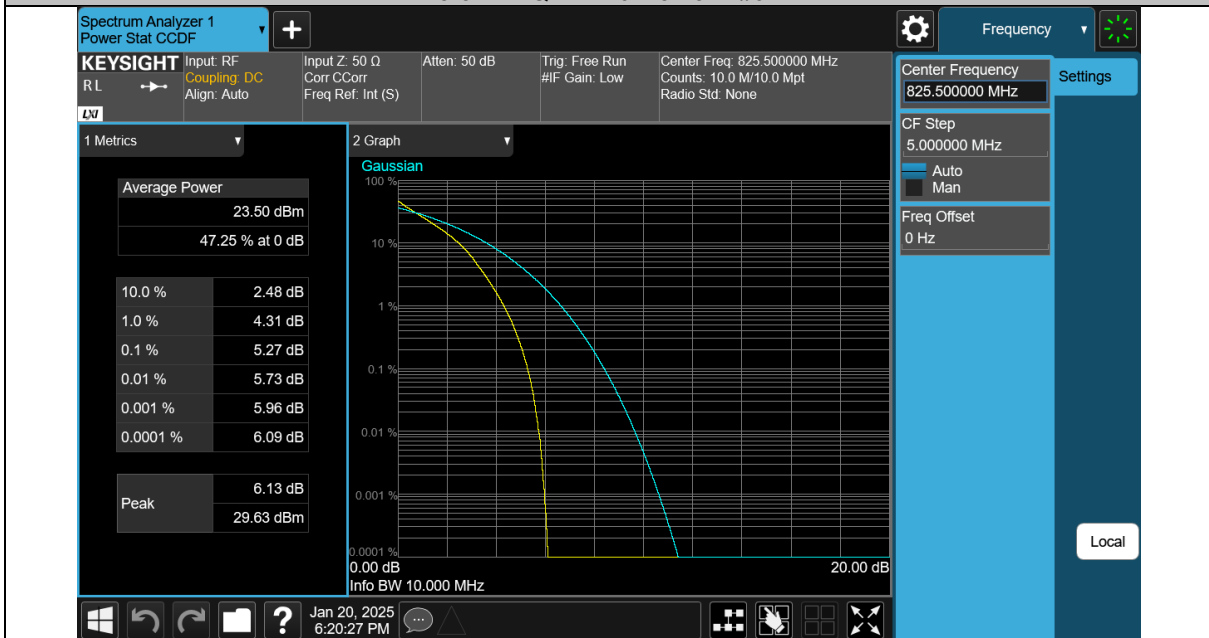
Band5-3MHz-QPSK-20415-1RB#0-PASS



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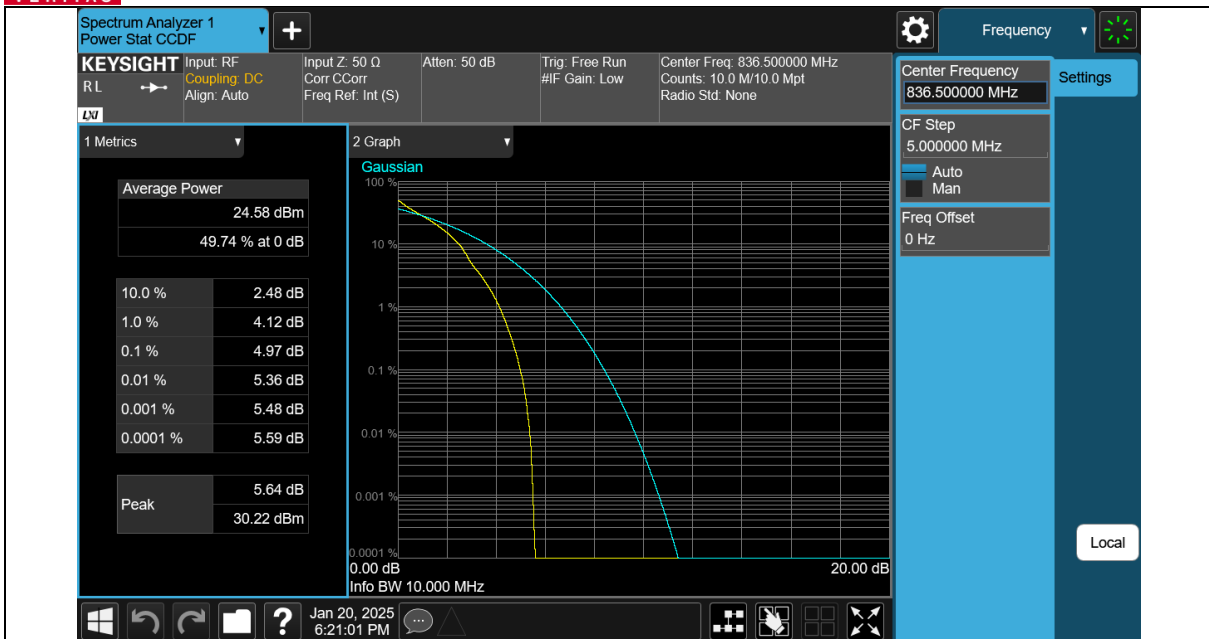
Band5-3MHz-QPSK-20415-15RB#0-PASS



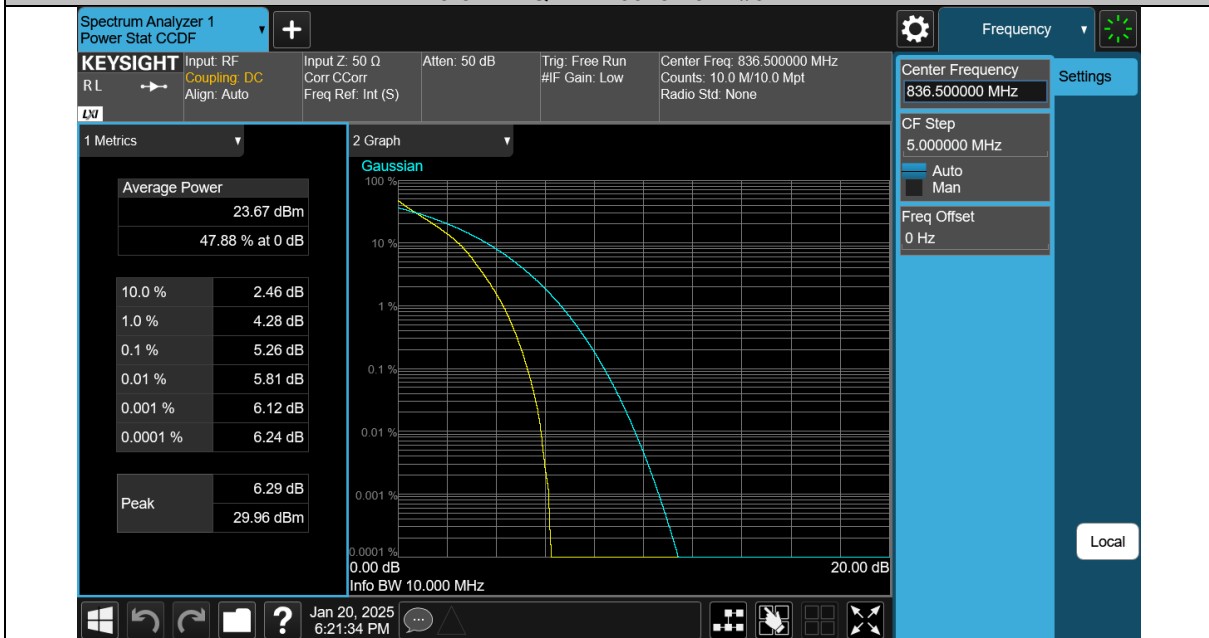
Band5-3MHz-QPSK-20525-1RB#0-PASS



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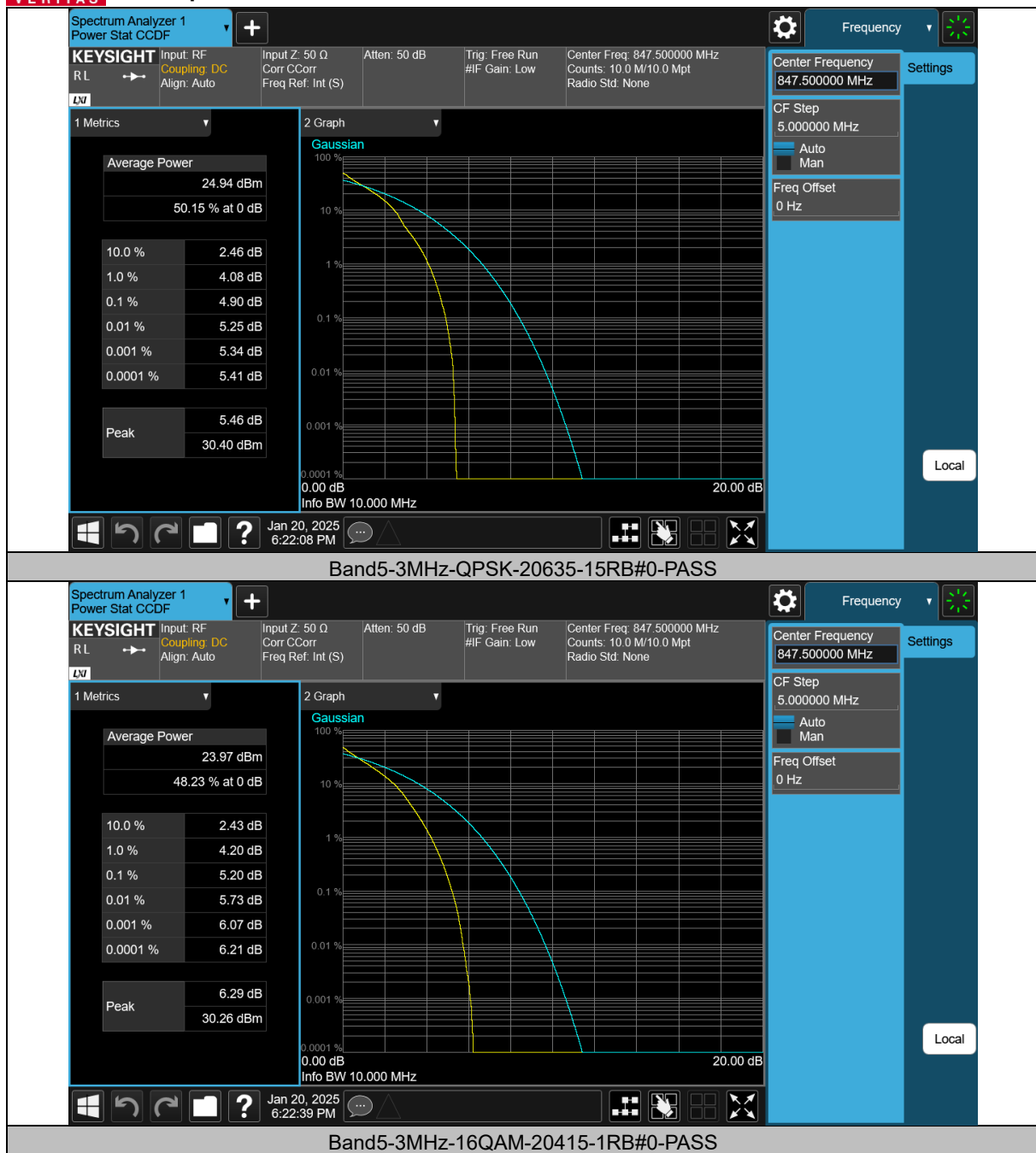
Band5-3MHz-QPSK-20525-15RB#0-PASS



Band5-3MHz-QPSK-20635-1RB#0-PASS

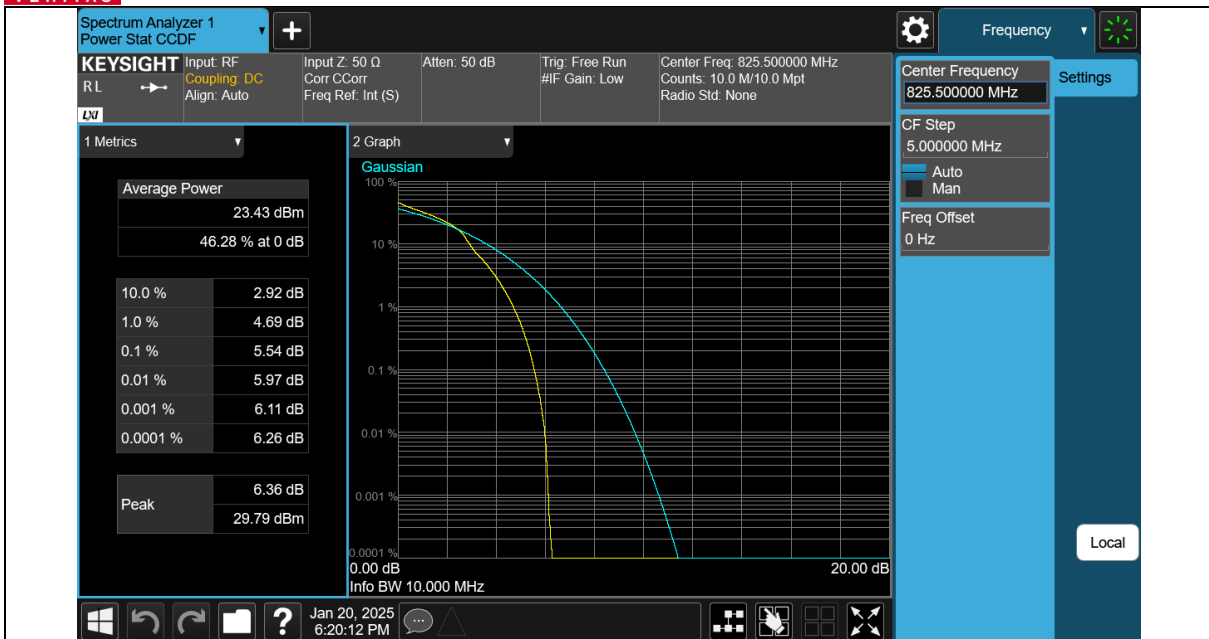


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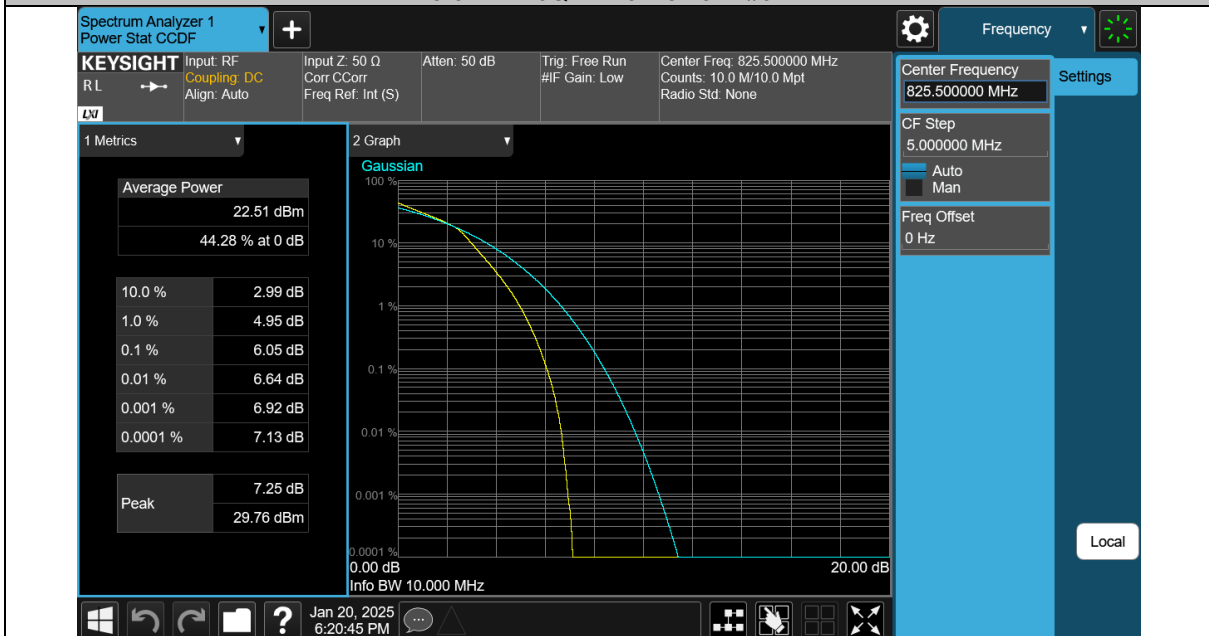




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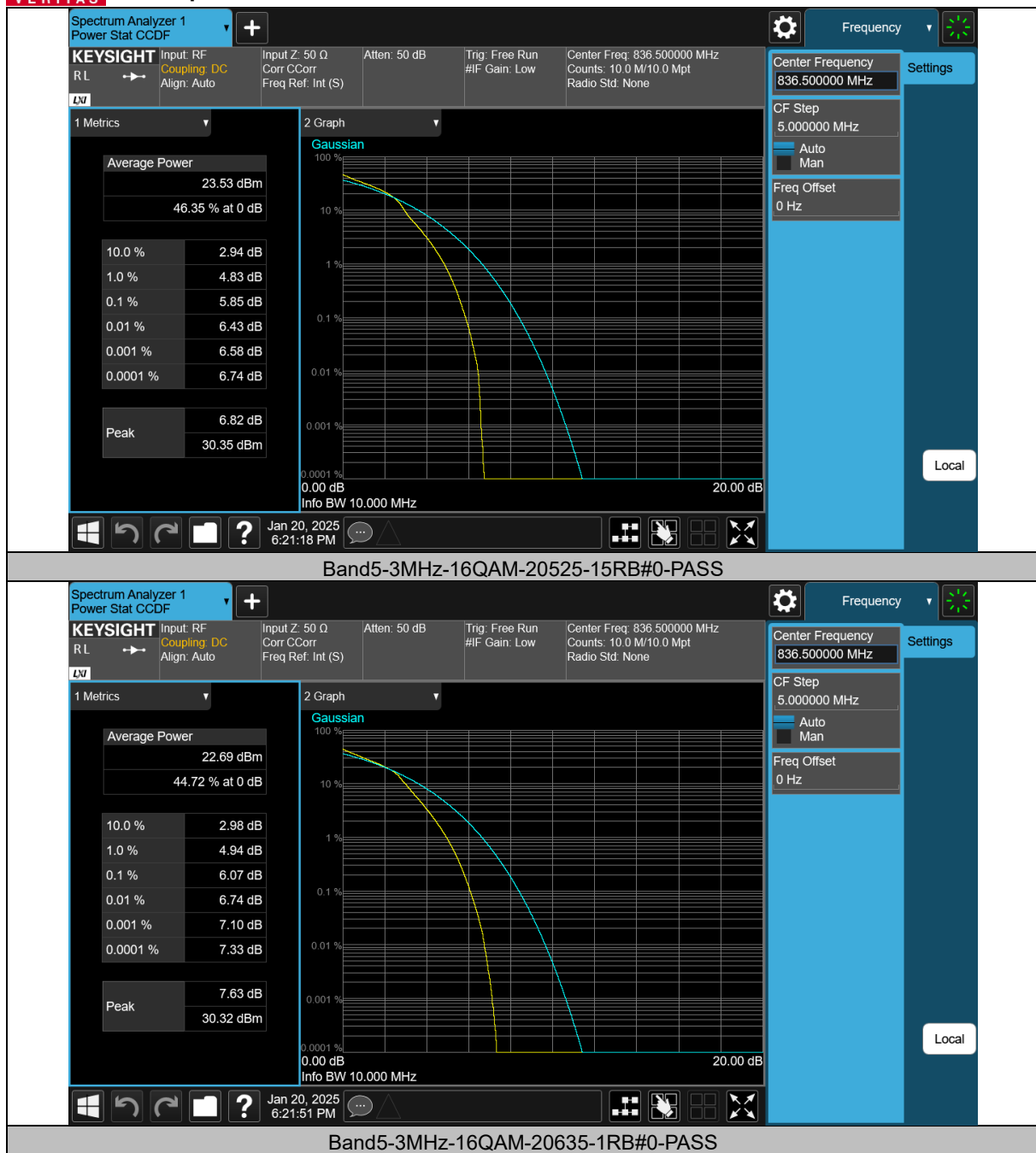
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Band5-3MHz-16QAM-20525-1RB#0-PASS

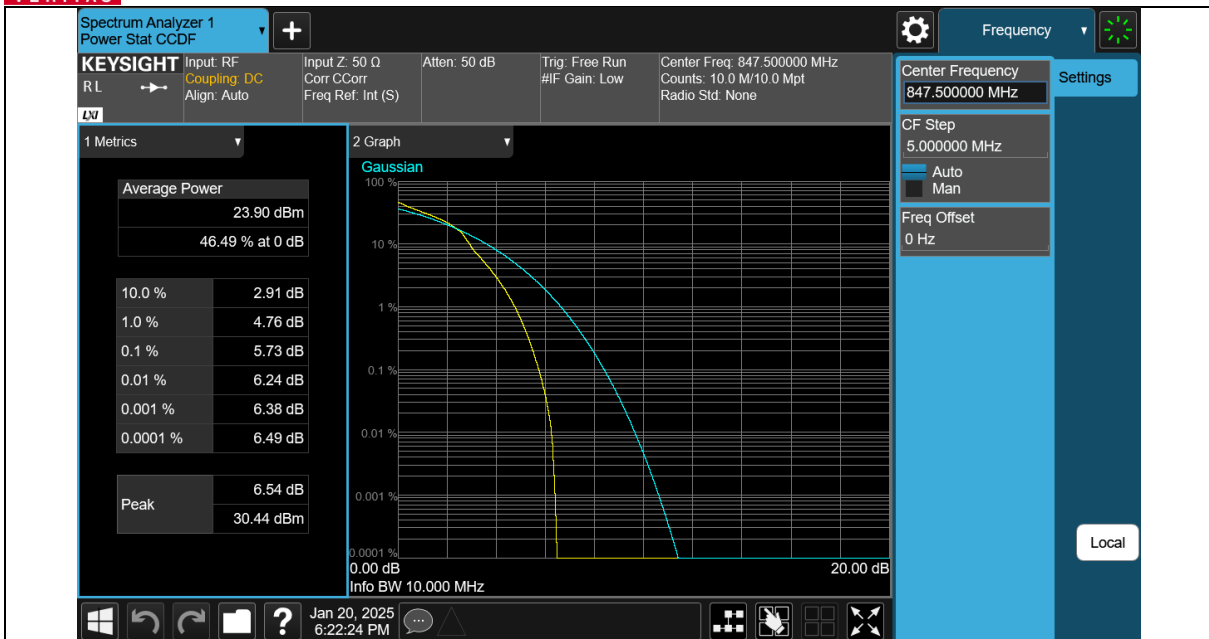


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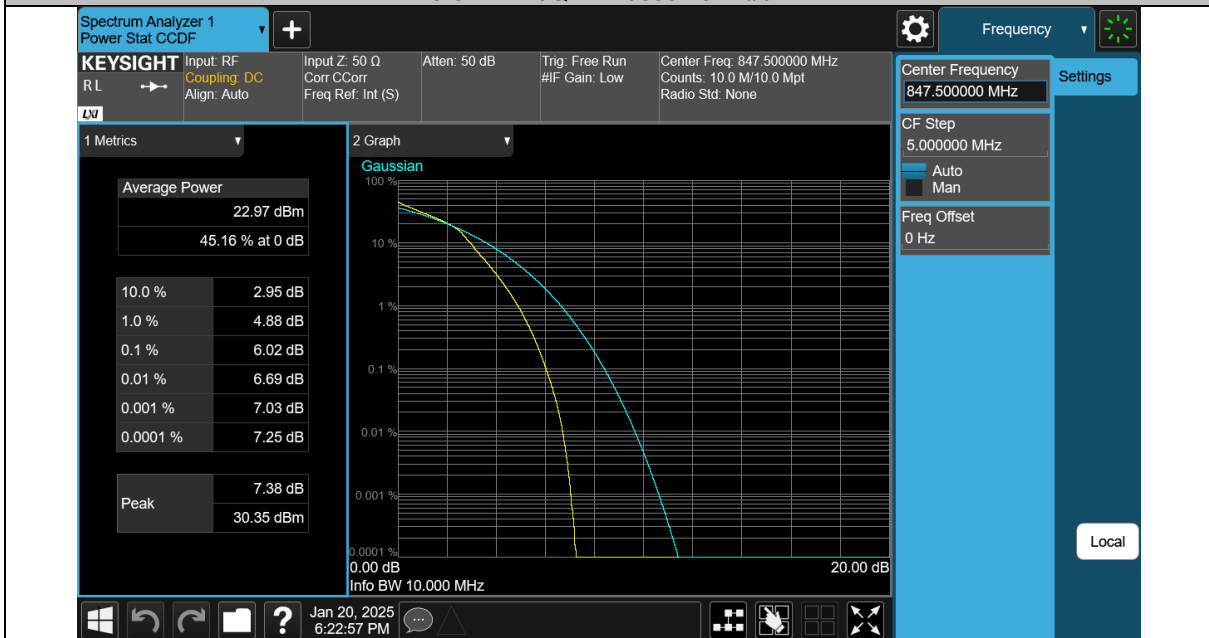




BUREAU VERITAS Test Report No.: PSU-NQN2412090110RF01



Band5-3MHz-16QAM-20635-15RB#0-PASS



Band5-5MHz-QPSK-20425-1RB#0-PASS