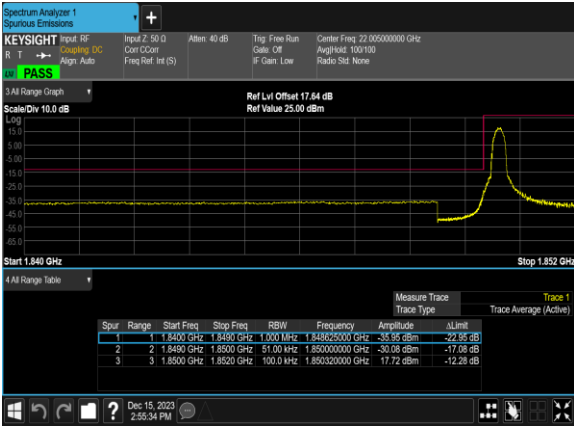
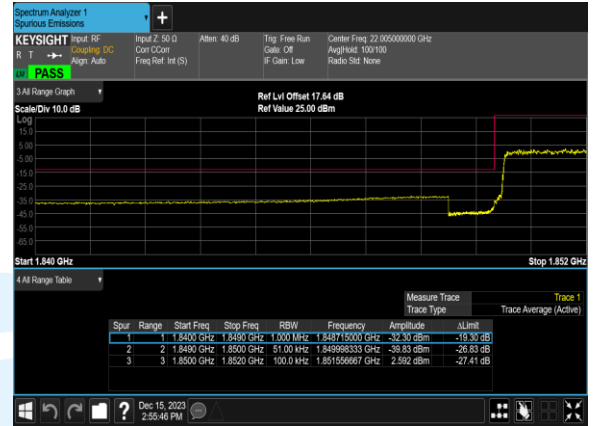


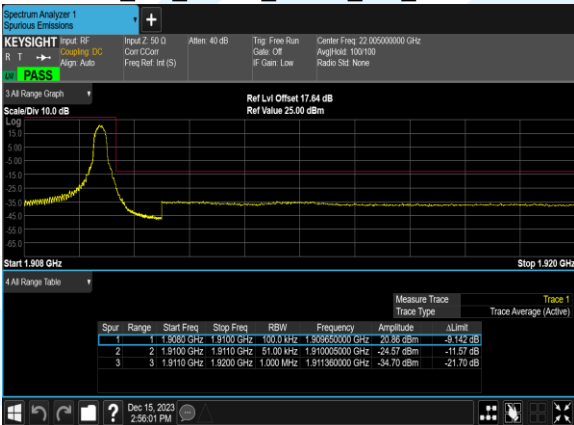
B2\_5M\_16QAM\_1@0\_CH\_18625



B2\_5M\_16QAM\_25@0\_CH\_18625



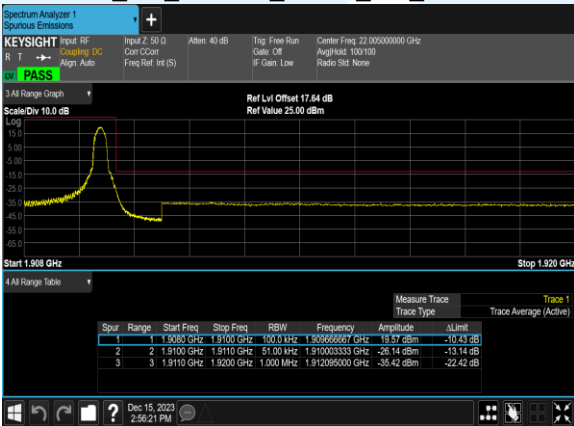
B2\_5M\_QPSK\_1@24\_CH\_19175



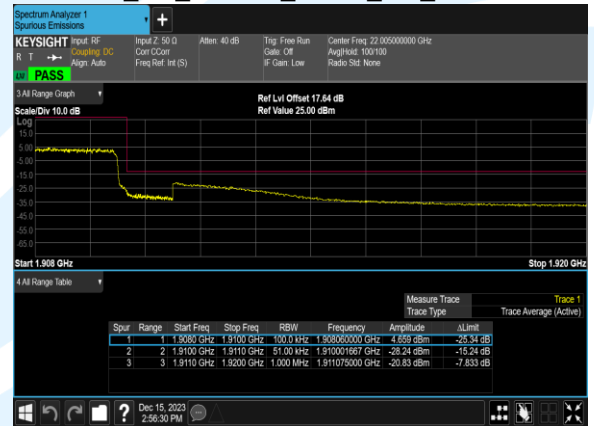
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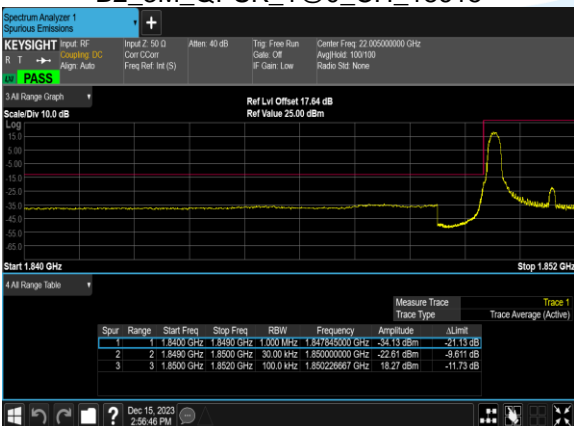
B2\_5M\_16QAM\_1@24\_CH\_19175



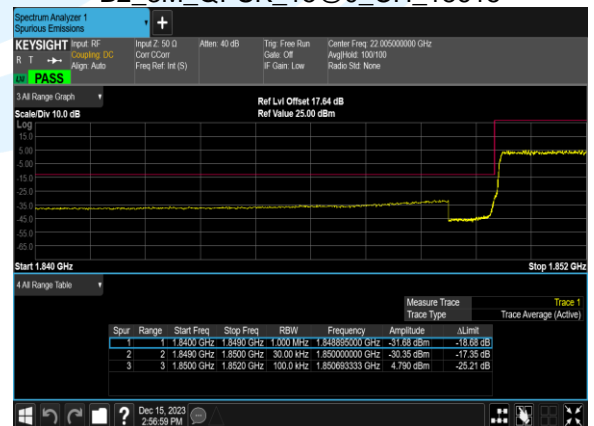
B2\_5M\_16QAM\_25@0\_CH\_19175



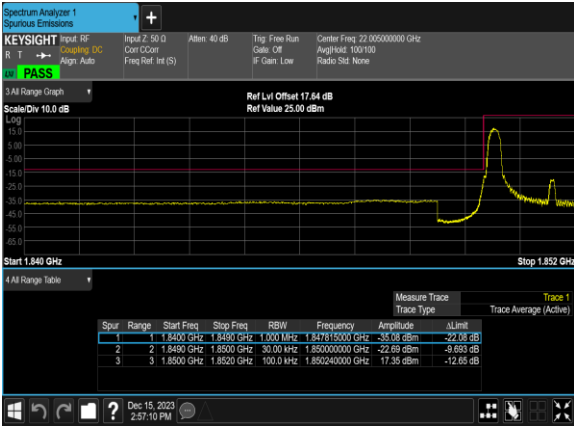
B2\_3M\_QPSK\_1@0\_CH\_18615



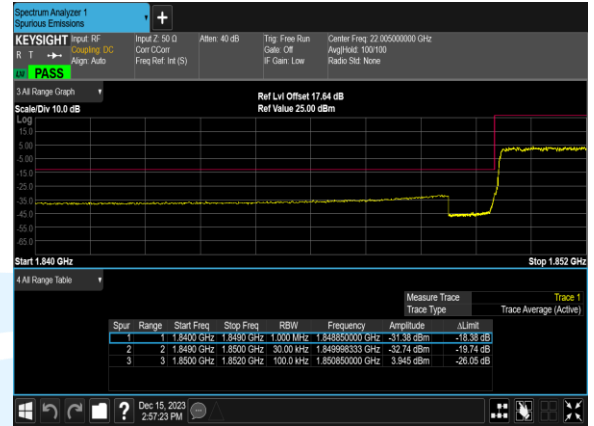
B2\_3M\_QPSK\_15@0\_CH\_18615



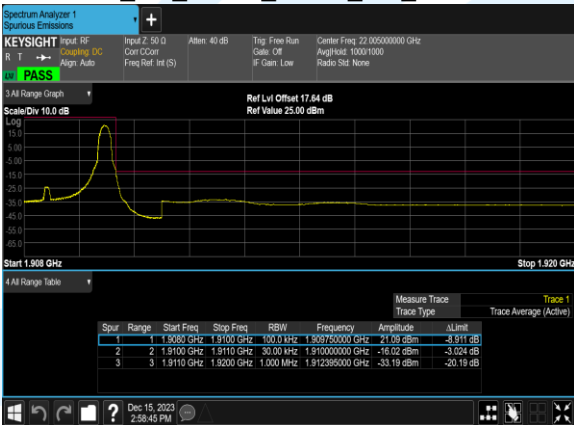
B2\_3M\_16QAM\_1@0\_CH\_18615



B2\_3M\_16QAM\_15@0\_CH\_18615



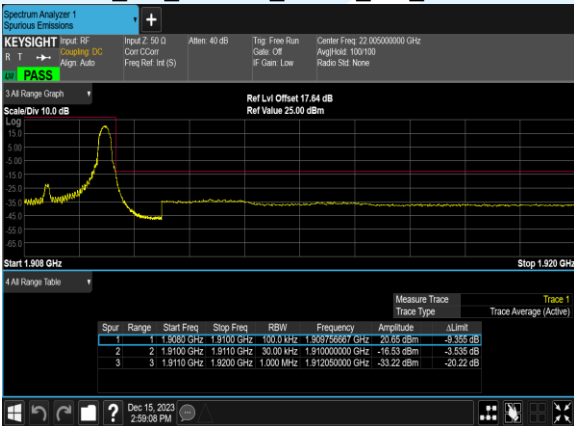
B2\_3M\_QPSK\_1@14\_CH\_19185



B2\_3M\_QPSK\_15@0\_CH\_19185



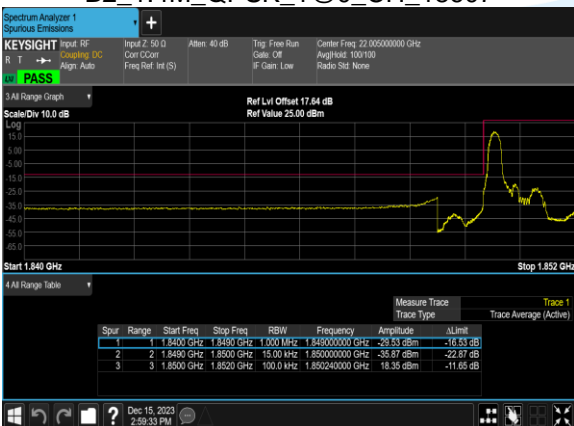
B2\_3M\_16QAM\_1@14\_CH\_19185



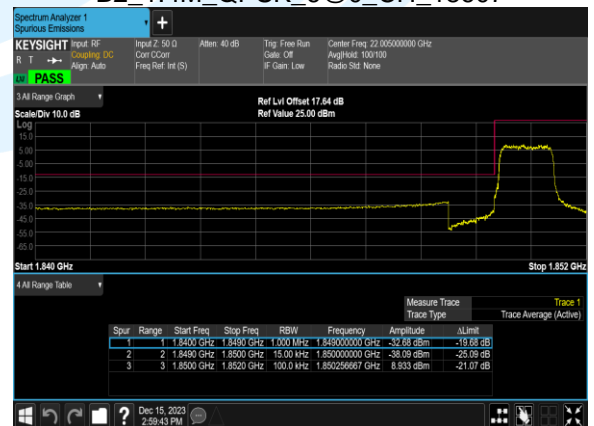
B2\_3M\_16QAM\_15@0\_CH\_19185



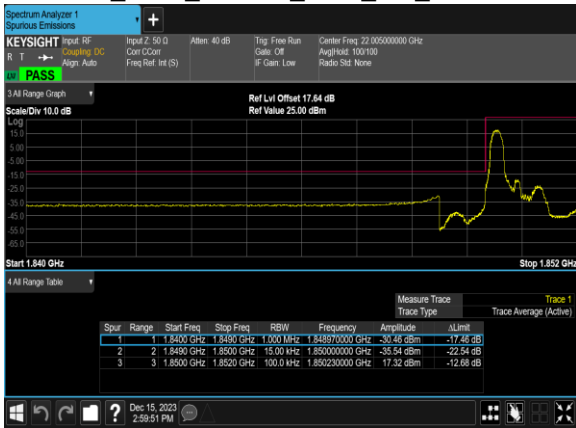
B2\_1.4M\_QPSK\_1@0\_CH\_18607



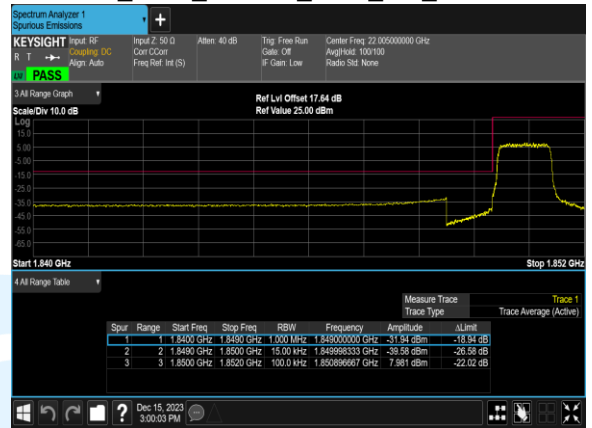
B2\_1.4M\_QPSK\_6@0\_CH\_18607



B2\_1.4M\_16QAM\_1@0\_CH\_18607



B2\_1.4M\_16QAM\_6@0\_CH\_18607



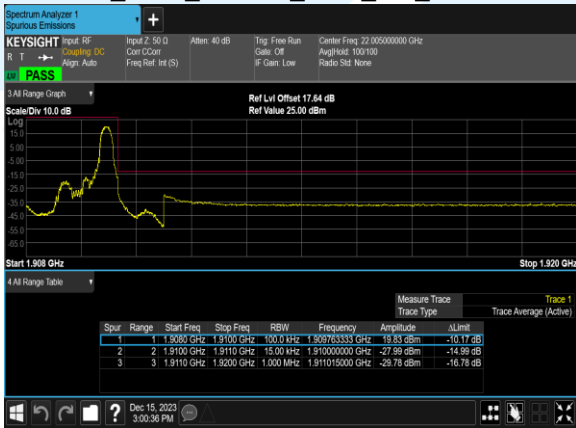
B2\_1.4M\_QPSK\_1@5\_CH\_19193



B2\_1.4M\_QPSK\_6@0\_CH\_19193



B2\_1.4M\_16QAM\_1@5\_CH\_19193



B2\_1.4M\_16QAM\_6@0\_CH\_19193



## A.2 LTE BAND 4

### Peak to Average Ratio

Band	Bandwidth (MHz)	Channel	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
4	20.0	20050	1720.0	QPSK	100@0	5.77	13	PASS
4	20.0	20050	1720.0	16QAM	100@0	6.37	13	PASS
4	20.0	20175	1732.5	QPSK	100@0	5.15	13	PASS
4	20.0	20175	1732.5	16QAM	100@0	5.92	13	PASS
4	20.0	20300	1745.0	QPSK	100@0	5.38	13	PASS
4	20.0	20300	1745.0	16QAM	100@0	6.14	13	PASS
4	15.0	20025	1717.5	QPSK	75@0	5.58	13	PASS
4	15.0	20025	1717.5	16QAM	75@0	6.26	13	PASS
4	15.0	20175	1732.5	QPSK	75@0	5.11	13	PASS
4	15.0	20175	1732.5	16QAM	75@0	5.93	13	PASS
4	15.0	20325	1747.5	QPSK	75@0	5.30	13	PASS
4	15.0	20325	1747.5	16QAM	75@0	6.08	13	PASS
4	10.0	20000	1715.0	QPSK	50@0	5.74	13	PASS
4	10.0	20000	1715.0	16QAM	50@0	6.48	13	PASS
4	10.0	20175	1732.5	QPSK	50@0	5.14	13	PASS
4	10.0	20175	1732.5	16QAM	50@0	5.95	13	PASS
4	10.0	20350	1750.0	QPSK	50@0	5.64	13	PASS
4	10.0	20350	1750.0	16QAM	50@0	6.38	13	PASS
4	5.0	19975	1712.5	QPSK	25@0	5.75	13	PASS
4	5.0	19975	1712.5	16QAM	25@0	6.20	13	PASS
4	5.0	20175	1732.5	QPSK	25@0	5.10	13	PASS
4	5.0	20175	1732.5	16QAM	25@0	5.89	13	PASS
4	5.0	20375	1752.5	QPSK	25@0	5.72	13	PASS
4	5.0	20375	1752.5	16QAM	25@0	6.47	13	PASS
4	3.0	19965	1711.5	QPSK	15@0	5.47	13	PASS
4	3.0	19965	1711.5	16QAM	15@0	6.22	13	PASS
4	3.0	20175	1732.5	QPSK	15@0	5.07	13	PASS
4	3.0	20175	1732.5	16QAM	15@0	5.85	13	PASS
4	3.0	20385	1753.5	QPSK	15@0	5.82	13	PASS
4	3.0	20385	1753.5	16QAM	15@0	6.60	13	PASS
4	1.4	19957	1710.7	QPSK	6@0	5.32	13	PASS
4	1.4	19957	1710.7	16QAM	6@0	5.96	13	PASS
4	1.4	20175	1732.5	QPSK	6@0	4.97	13	PASS
4	1.4	20175	1732.5	16QAM	6@0	5.76	13	PASS
4	1.4	20393	1754.3	QPSK	6@0	5.84	13	PASS
4	1.4	20393	1754.3	16QAM	6@0	6.57	13	PASS

### Test Graphs

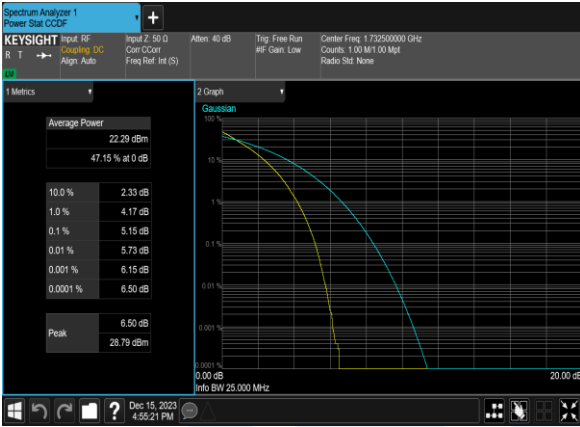
B4\_20M\_QPSK\_100@0\_CH\_20050



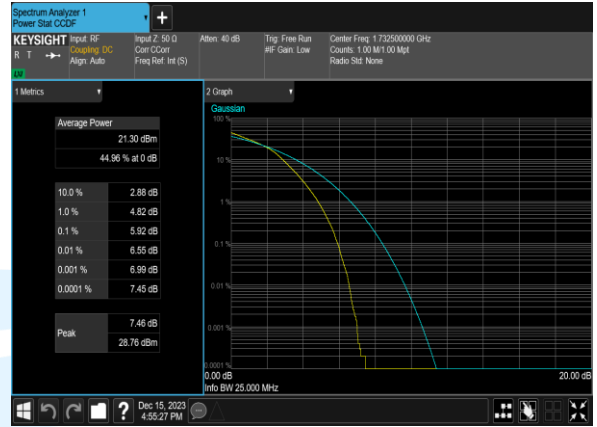
B4\_20M\_16QAM\_100@0\_CH\_20050



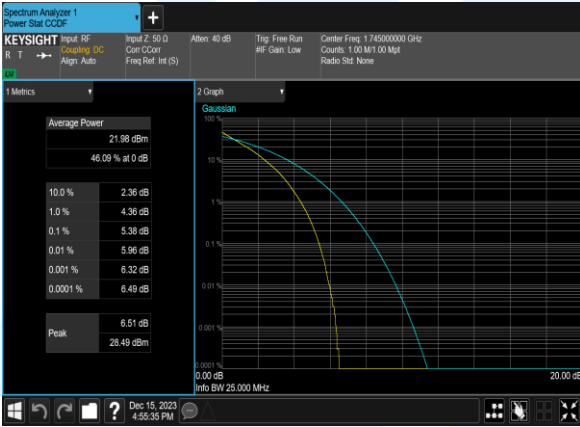
B4\_20M\_QPSK\_100@0\_CH\_20175



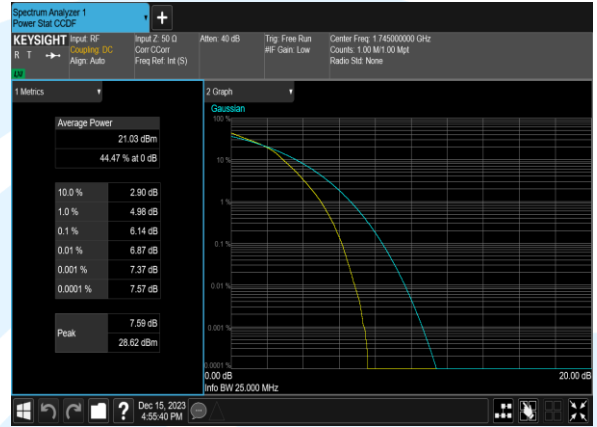
B4\_20M\_16QAM\_100@0\_CH\_20175



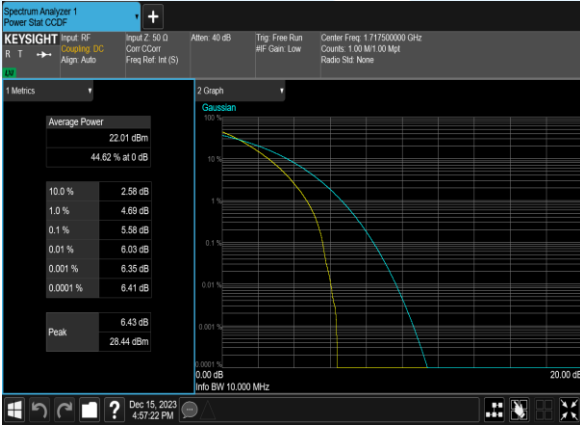
B4\_20M\_QPSK\_100@0\_CH\_20300



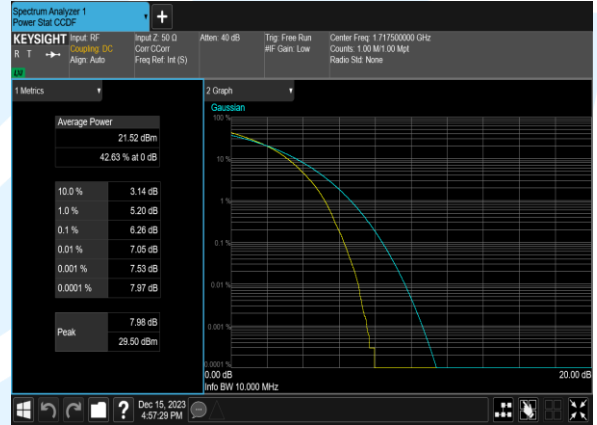
B4\_20M\_16QAM\_100@0\_CH\_20300



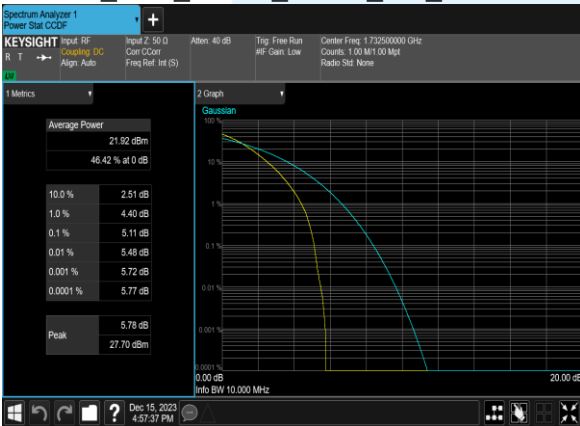
B4\_15M\_QPSK\_75@0\_CH\_20025



B4\_15M\_16QAM\_75@0\_CH\_20025



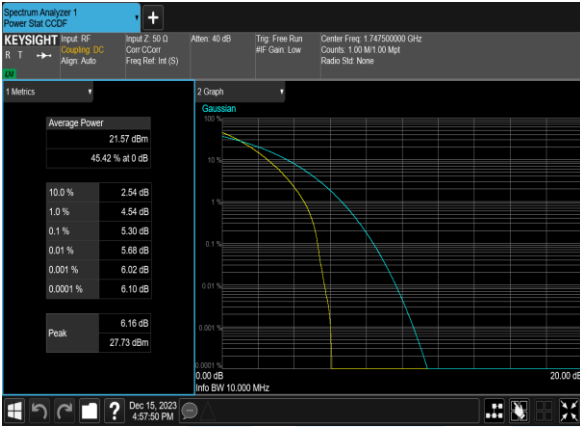
B4\_15M\_QPSK\_75@0\_CH\_20175



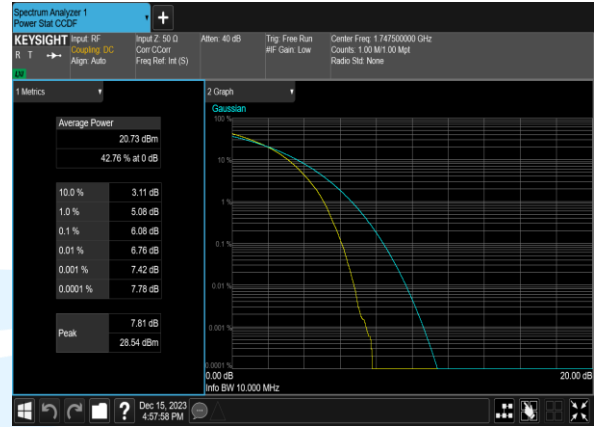
B4\_15M\_16QAM\_75@0\_CH\_20175



B4\_15M\_QPSK\_75@0\_CH\_20325



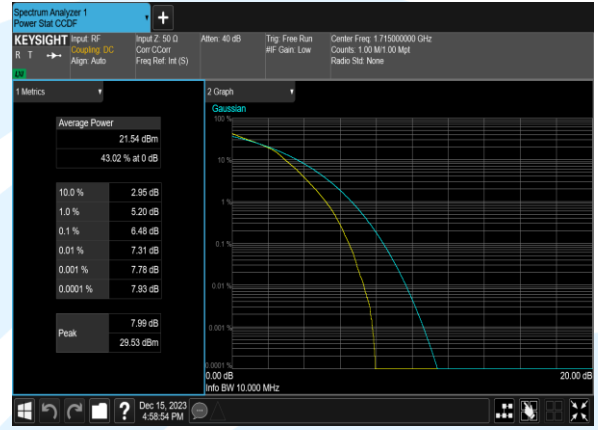
B4\_15M\_16QAM\_75@0\_CH\_20325



B4\_10M\_QPSK\_50@0\_CH\_20000



B4\_10M\_16QAM\_50@0\_CH\_20000



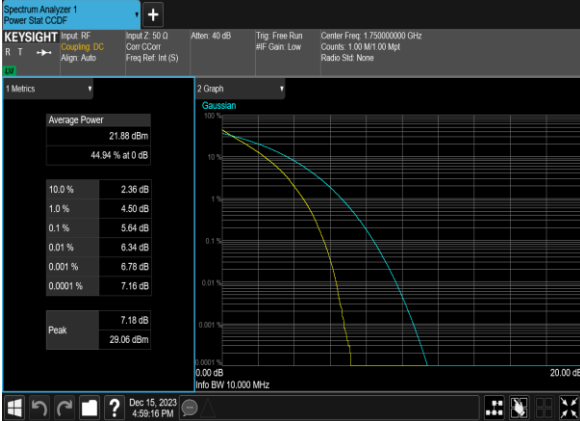
B4\_10M\_QPSK\_50@0\_CH\_20175



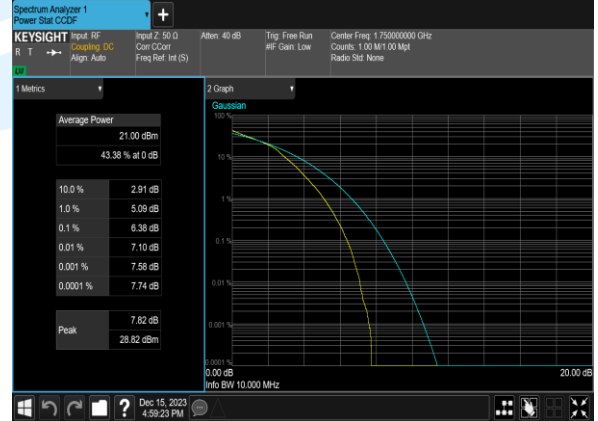
B4\_10M\_16QAM\_50@0\_CH\_20175



B4\_10M\_QPSK\_50@0\_CH\_20350



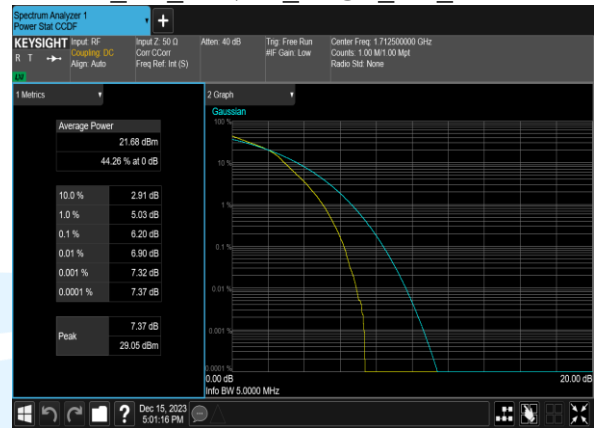
B4\_10M\_16QAM\_50@0\_CH\_20350



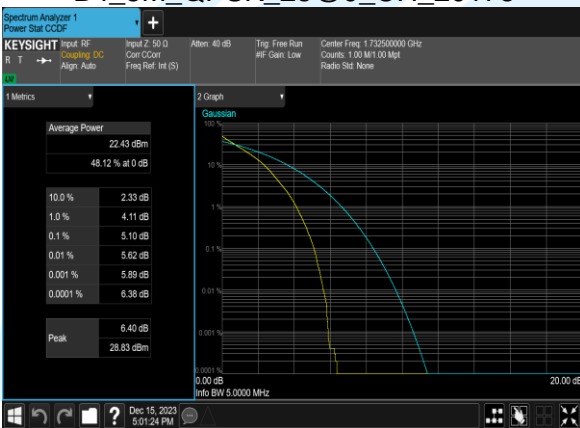
B4\_5M\_QPSK\_25@0\_CH\_19975



B4\_5M\_16QAM\_25@0\_CH\_19975



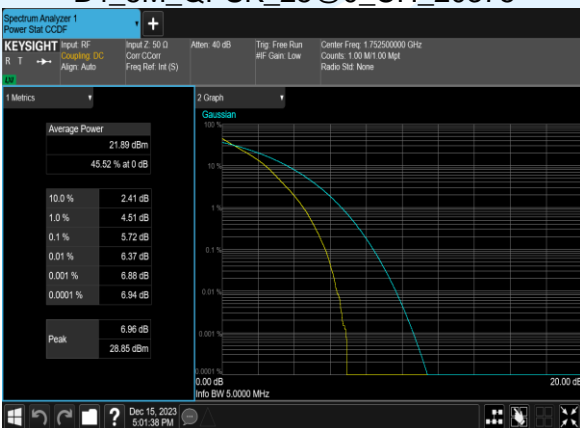
B4\_5M\_QPSK\_25@0\_CH\_20175



B4\_5M\_16QAM\_25@0\_CH\_20175



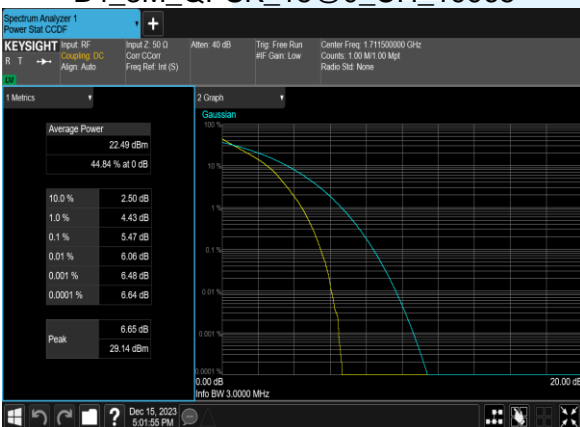
B4\_5M\_QPSK\_25@0\_CH\_20375



B4\_5M\_16QAM\_25@0\_CH\_20375



B4\_3M\_QPSK\_15@0\_CH\_19965

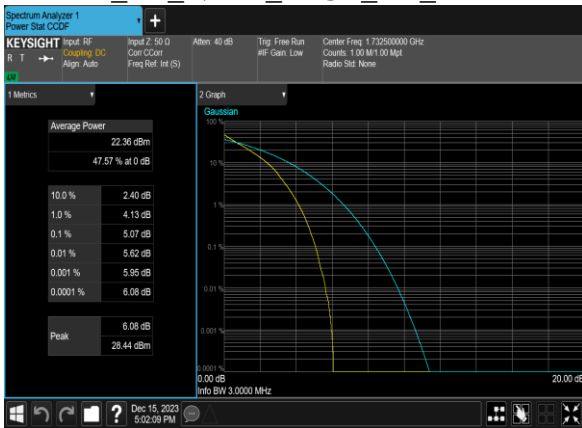


B4\_3M\_16QAM\_15@0\_CH\_19965

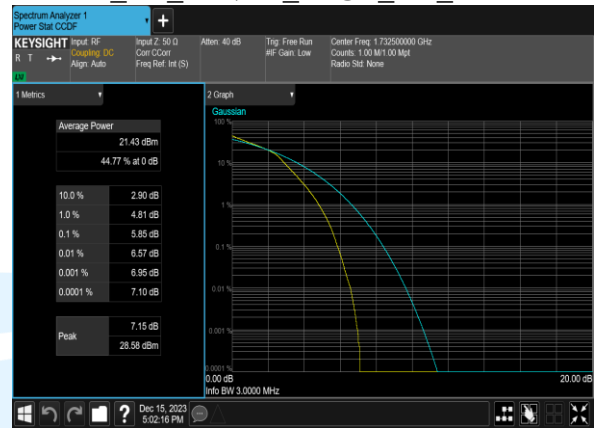




B4\_3M\_QPSK\_15@0\_CH\_20175



B4\_3M\_16QAM\_15@0\_CH\_20175



B4\_3M\_QPSK\_15@0\_CH\_20385



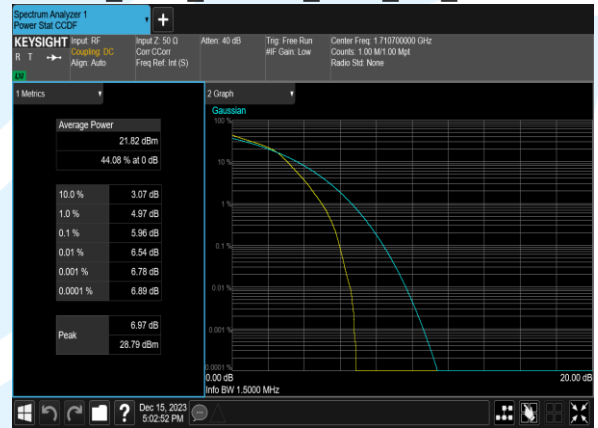
B4\_3M\_16QAM\_15@0\_CH\_20385



B4\_1.4M\_QPSK\_6@0\_CH\_19957



B4\_1.4M\_16QAM\_6@0\_CH\_19957



B4\_1.4M\_QPSK\_6@0\_CH\_20175

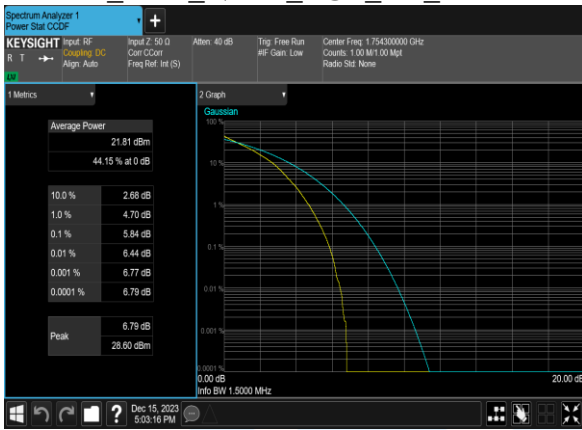


B4\_1.4M\_16QAM\_6@0\_CH\_20175

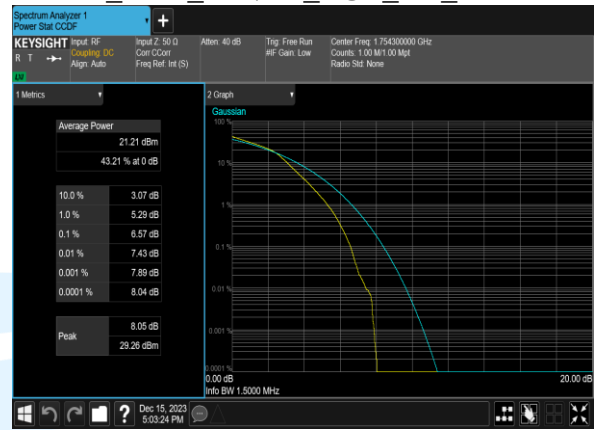




B4\_1.4M\_QPSK\_6@0\_CH\_20393



B4\_1.4M\_16QAM\_6@0\_CH\_20393



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<http://www.uttlab.com>

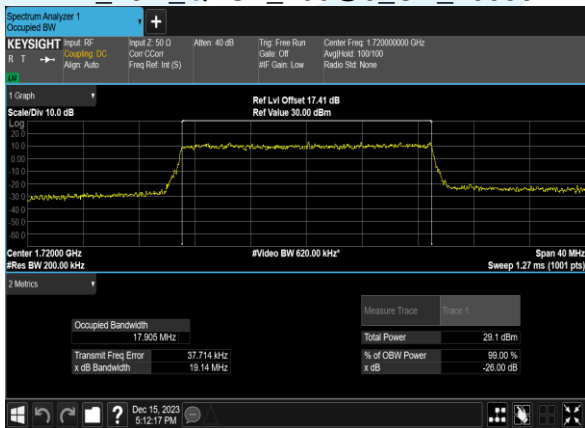
UTTR-RF-FCC4G-V1.1

## Occupied Bandwidth

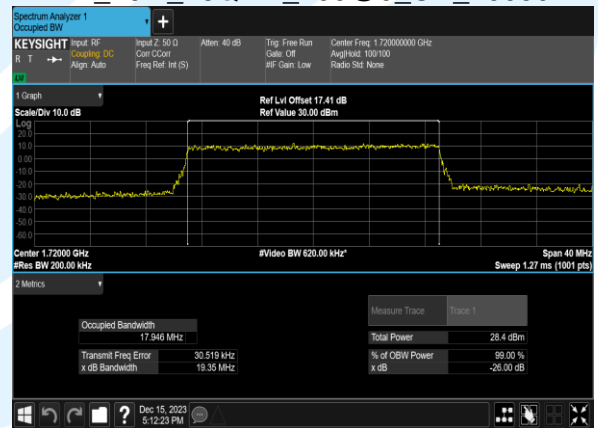
Band	Bandwidth (MHz)	Channel	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
4	20.0	20050	1720.0	QPSK	100@0	17.905	19.14
4	20.0	20050	1720.0	16QAM	100@0	17.946	19.35
4	20.0	20175	1732.5	QPSK	100@0	17.871	19.01
4	20.0	20175	1732.5	16QAM	100@0	17.855	18.88
4	20.0	20300	1745.0	QPSK	100@0	17.893	19.19
4	20.0	20300	1745.0	16QAM	100@0	17.911	18.99
4	15.0	20025	1717.5	QPSK	75@0	13.410	14.65
4	15.0	20025	1717.5	16QAM	75@0	13.413	14.41
4	15.0	20175	1732.5	QPSK	75@0	13.439	14.57
4	15.0	20175	1732.5	16QAM	75@0	13.407	14.48
4	15.0	20325	1747.5	QPSK	75@0	13.389	14.43
4	15.0	20325	1747.5	16QAM	75@0	13.417	14.83
4	10.0	20000	1715.0	QPSK	50@0	8.9518	9.666
4	10.0	20000	1715.0	16QAM	50@0	8.9418	9.488
4	10.0	20175	1732.5	QPSK	50@0	8.9381	9.604
4	10.0	20175	1732.5	16QAM	50@0	8.9516	9.600
4	10.0	20350	1750.0	QPSK	50@0	8.9484	9.710
4	10.0	20350	1750.0	16QAM	50@0	8.9416	9.573
4	5.0	19975	1712.5	QPSK	25@0	4.4633	4.876
4	5.0	19975	1712.5	16QAM	25@0	4.4566	4.876
4	5.0	20175	1732.5	QPSK	25@0	4.4559	4.862
4	5.0	20175	1732.5	16QAM	25@0	4.4558	4.878
4	5.0	20375	1752.5	QPSK	25@0	4.4489	4.841
4	5.0	20375	1752.5	16QAM	25@0	4.4613	4.887
4	3.0	19965	1711.5	QPSK	15@0	2.6814	2.981
4	3.0	19965	1711.5	16QAM	15@0	2.6893	2.984
4	3.0	20175	1732.5	QPSK	15@0	2.6851	2.958
4	3.0	20175	1732.5	16QAM	15@0	2.6819	2.968
4	3.0	20385	1753.5	QPSK	15@0	2.6860	2.973
4	3.0	20385	1753.5	16QAM	15@0	2.6803	2.956
4	1.4	19957	1710.7	QPSK	6@0	1.0761	1.229
4	1.4	19957	1710.7	16QAM	6@0	1.0783	1.230
4	1.4	20175	1732.5	QPSK	6@0	1.0791	1.227
4	1.4	20175	1732.5	16QAM	6@0	1.0772	1.217
4	1.4	20393	1754.3	QPSK	6@0	1.0807	1.224
4	1.4	20393	1754.3	16QAM	6@0	1.0799	1.224

## Test Graphs

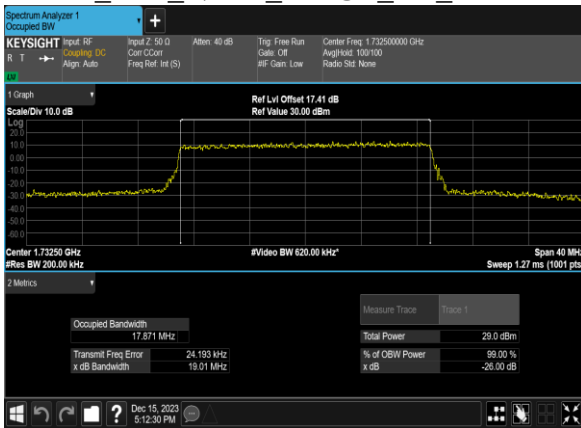
B4\_20M\_QPSK\_100@0\_CH\_20050



B4\_20M\_16QAM\_100@0\_CH\_20050



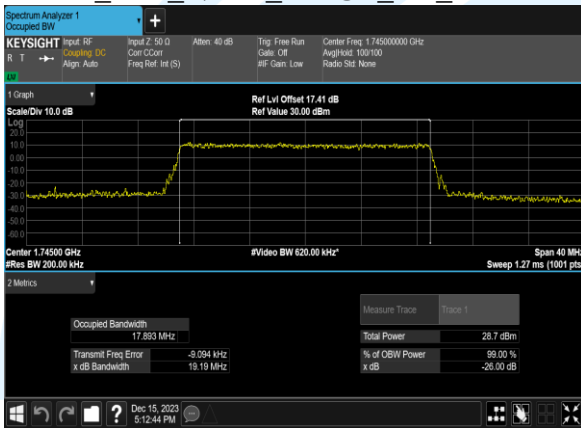
B4\_20M\_QPSK\_100@0\_CH\_20175



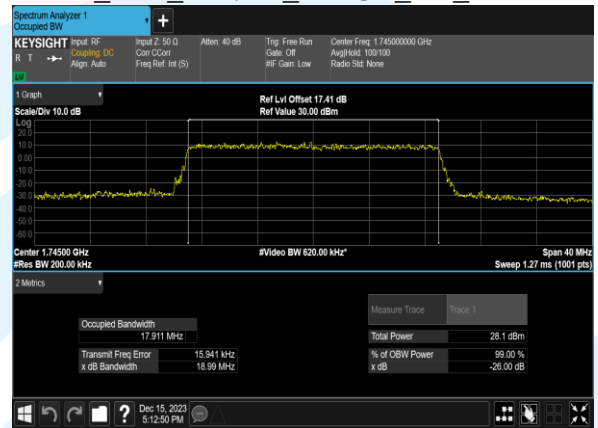
B4\_20M\_16QAM\_100@0\_CH\_20175



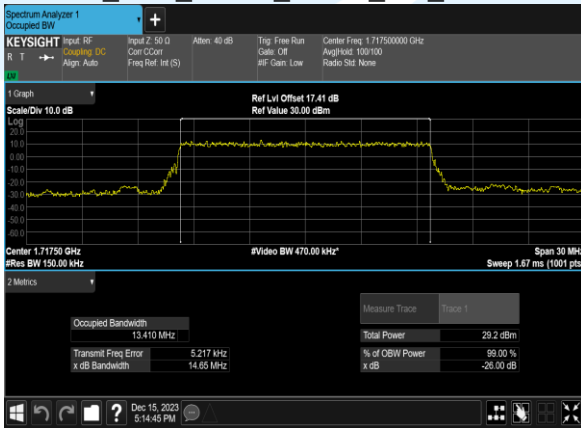
B4\_20M\_QPSK\_100@0\_CH\_20300



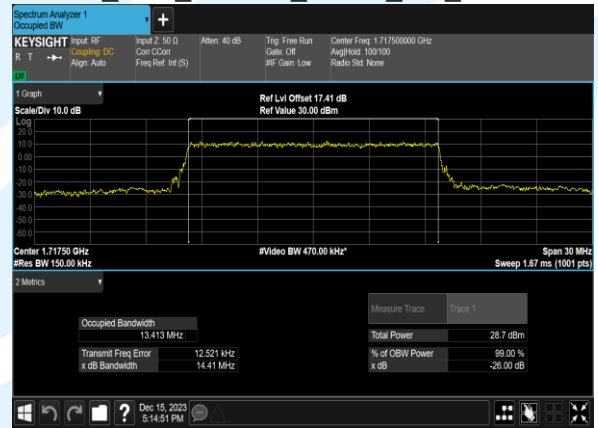
B4\_20M\_16QAM\_100@0\_CH\_20300



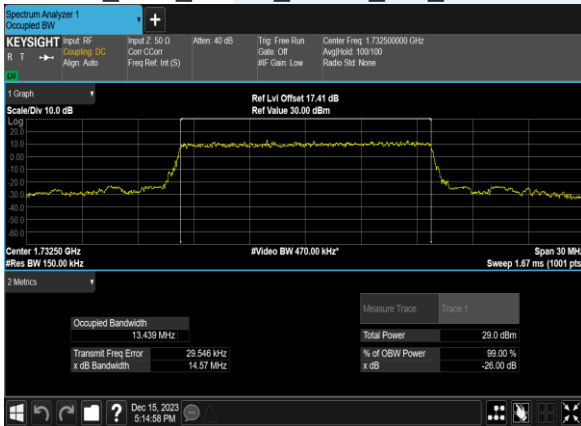
B4\_15M\_QPSK\_75@0\_CH\_20025



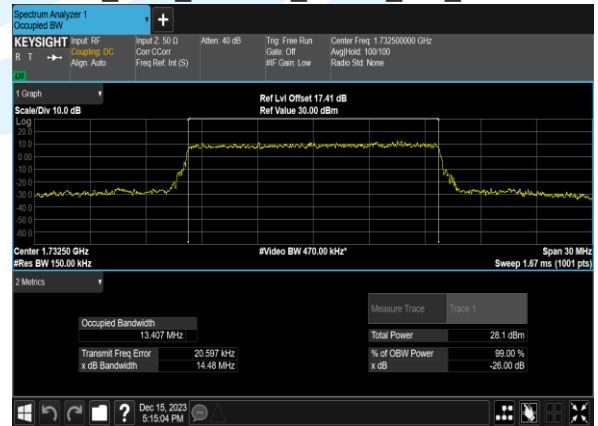
B4\_15M\_16QAM\_75@0\_CH\_20025



B4\_15M\_QPSK\_75@0\_CH\_20175



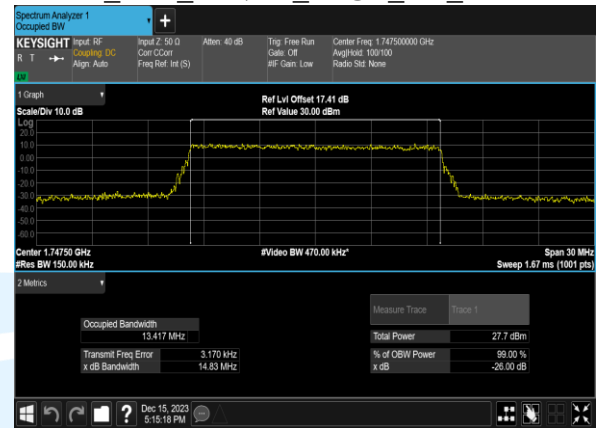
B4\_15M\_16QAM\_75@0\_CH\_20175



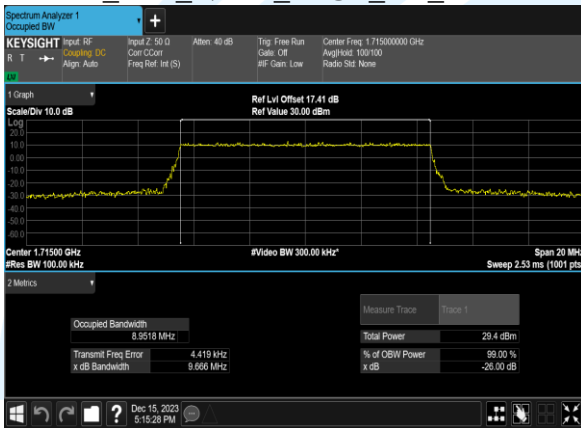
B4\_15M\_QPSK\_75@0\_CH\_20325



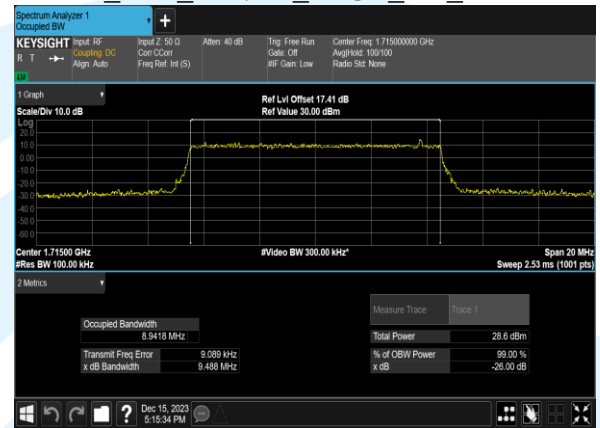
B4\_15M\_16QAM\_75@0\_CH\_20325



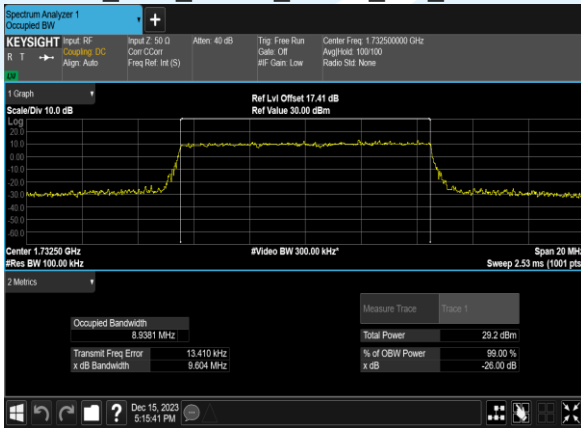
B4\_10M\_QPSK\_50@0\_CH\_20000



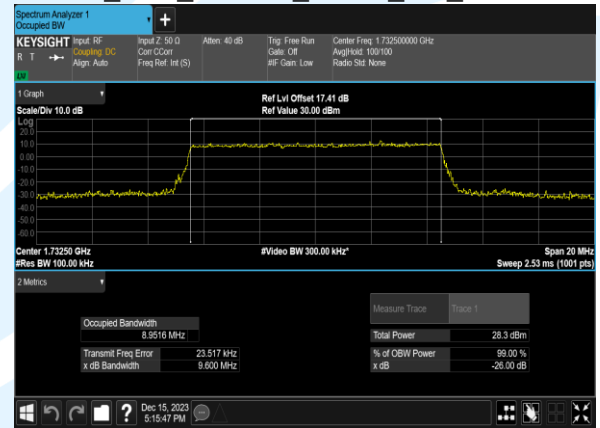
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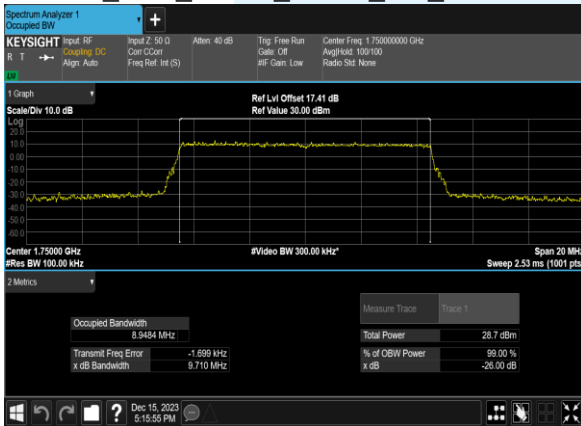
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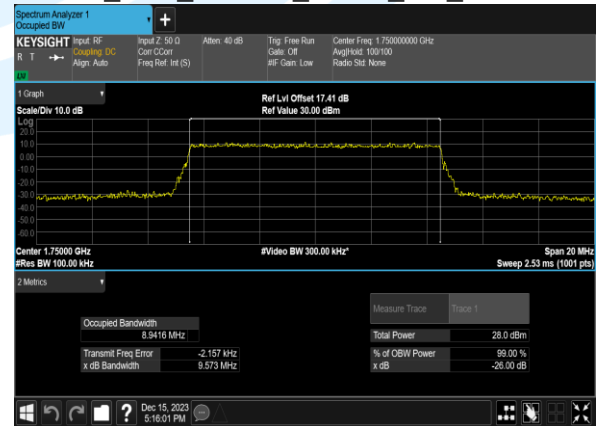
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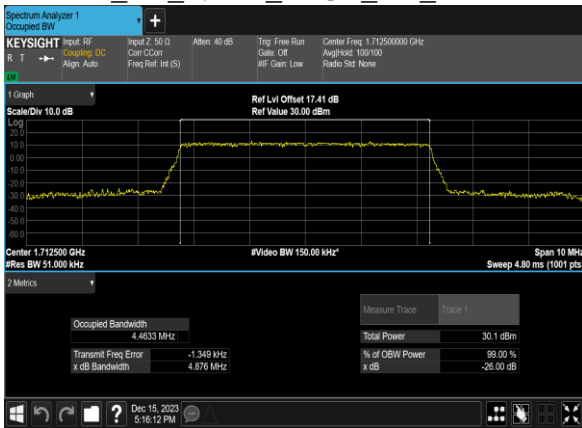
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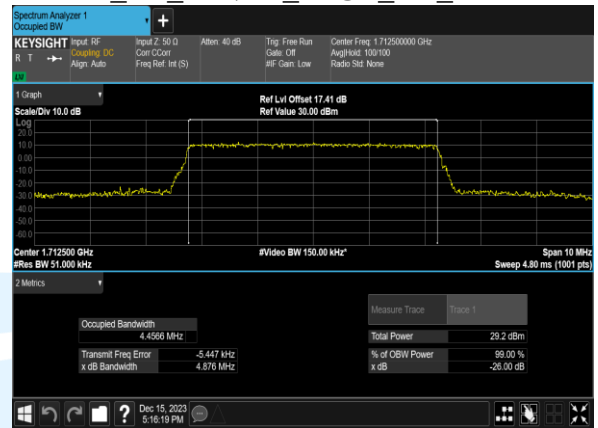
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B4\_5M\_QPSK\_25@0\_CH\_19975



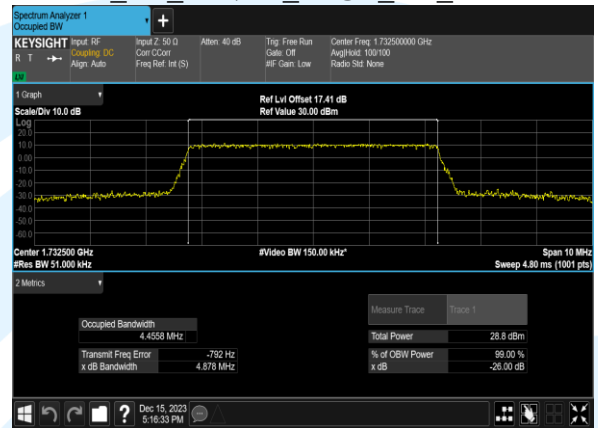
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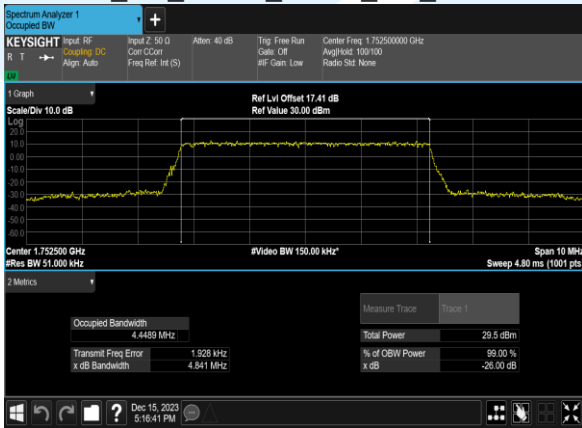
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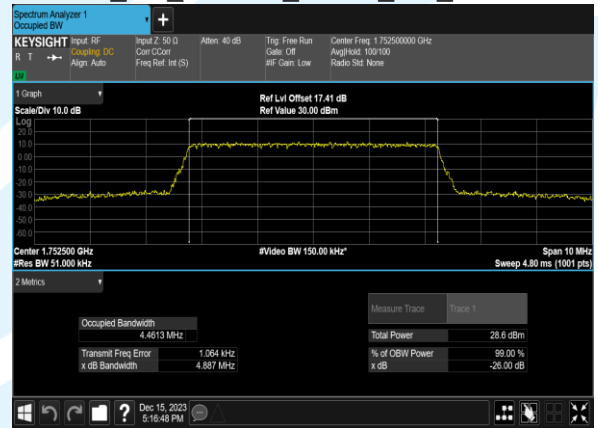
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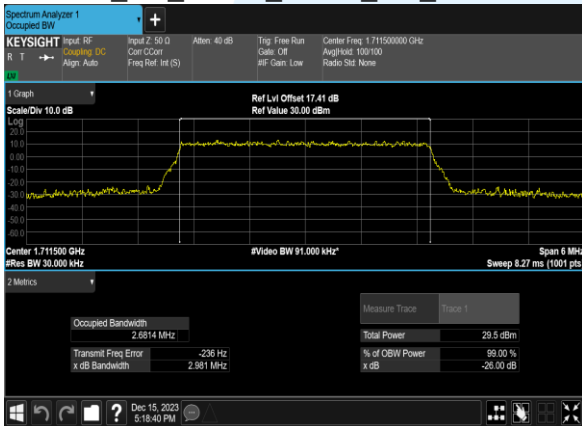
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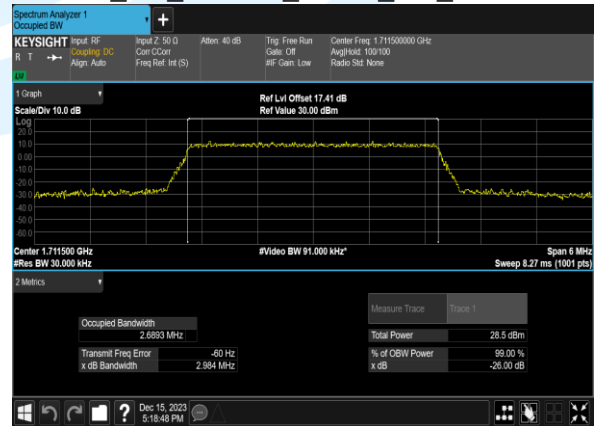
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B4\_3M\_QPSK\_15@0\_CH\_19965



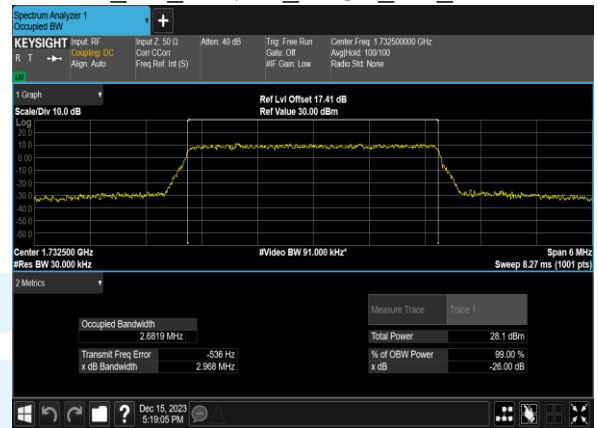
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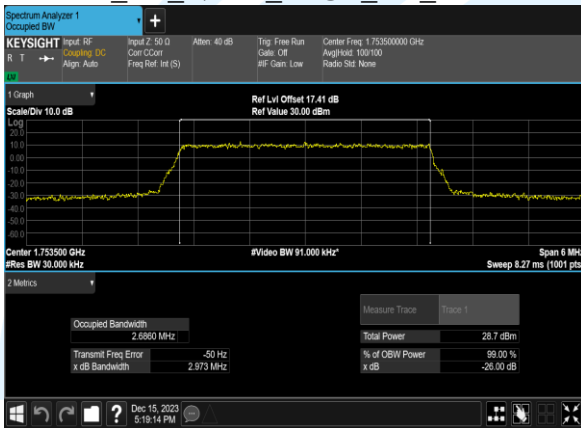
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B4\_3M\_16QAM\_15@0\_CH\_20175



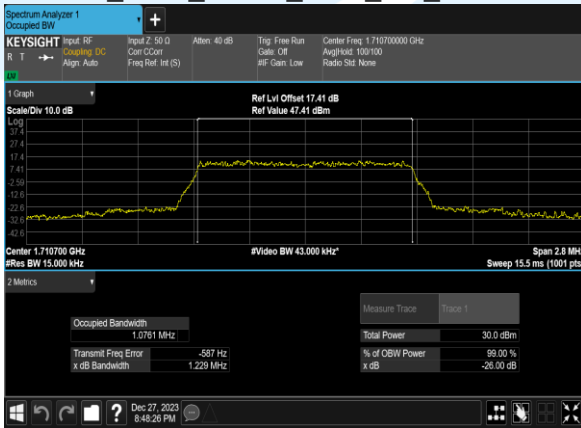
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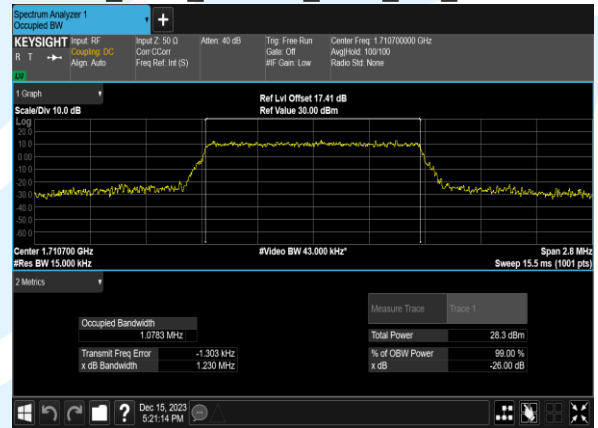
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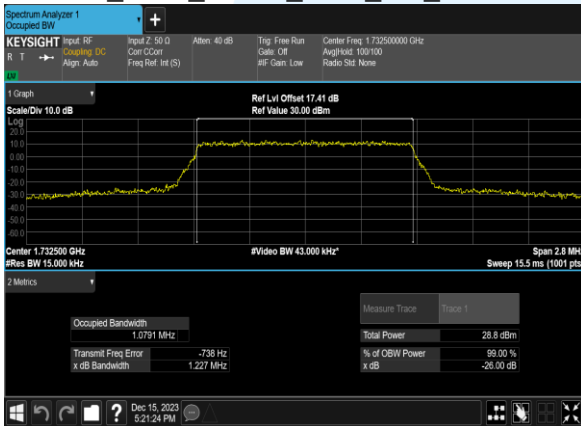
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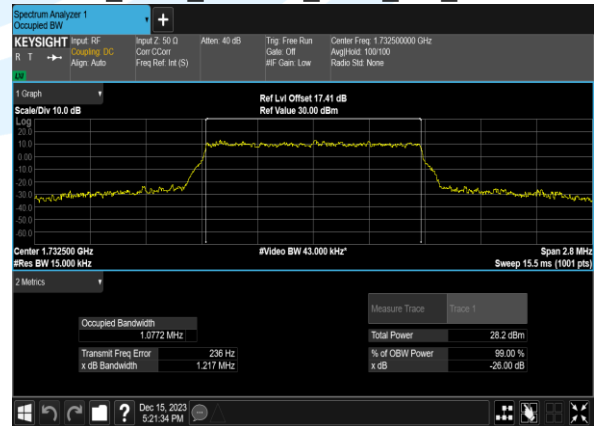
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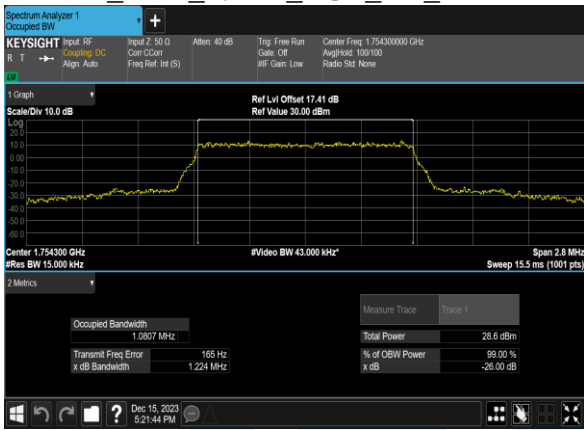
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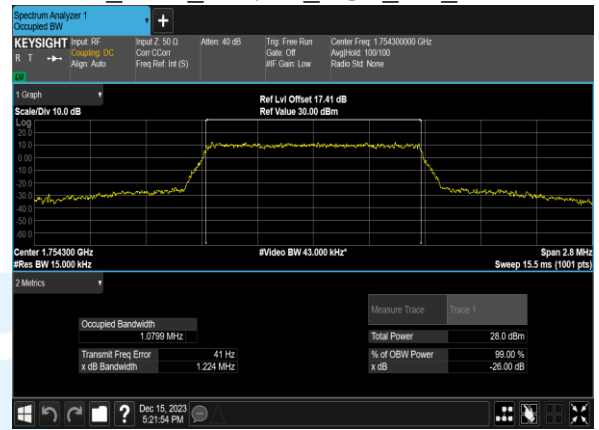
B4\_1.4M\_16QAM\_6@0\_CH\_20175



B4\_1.4M\_QPSK\_6@0\_CH\_20393



B4\_1.4M\_16QAM\_6@0\_CH\_20393



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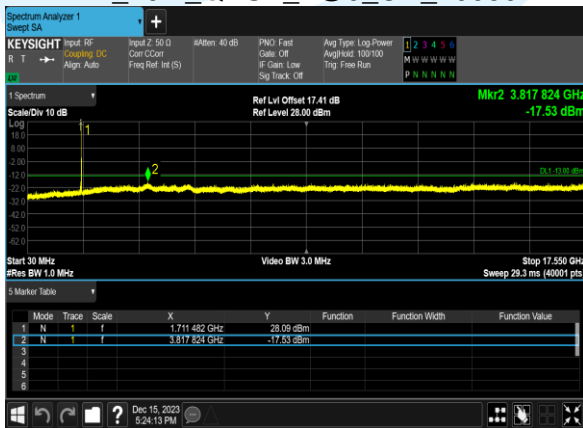


## Conducted Spurious Emissions

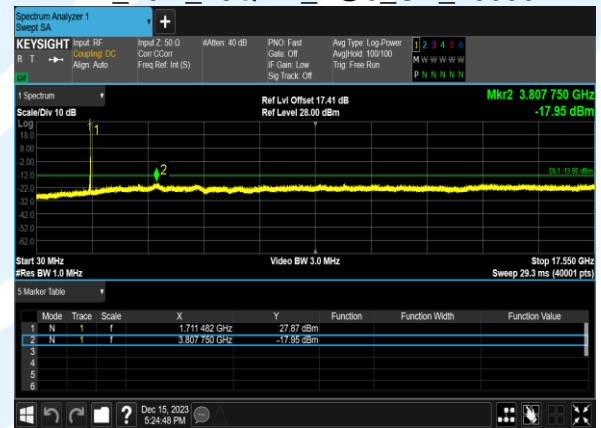
Band	Bandwidth (MHz)	Channel	Freq (MHz)	Modulation	RB	Result (dBm)	Limit (dBm)	Verdict
4	20.0	20050	1720.0	QPSK	1@0	-17.53	-13	PASS
4	20.0	20050	1720.0	16QAM	1@0	-17.95	-13	PASS
4	20.0	20175	1732.5	QPSK	1@0	-17.97	-13	PASS
4	20.0	20175	1732.5	16QAM	1@0	-17.91	-13	PASS
4	20.0	20300	1745.0	QPSK	1@0	-18.29	-13	PASS
4	20.0	20300	1745.0	16QAM	1@0	-17.93	-13	PASS
4	15.0	20025	1717.5	QPSK	1@0	-18.15	-13	PASS
4	15.0	20025	1717.5	16QAM	1@0	-18.22	-13	PASS
4	15.0	20175	1732.5	QPSK	1@0	-17.97	-13	PASS
4	15.0	20175	1732.5	16QAM	1@0	-18.08	-13	PASS
4	15.0	20325	1747.5	QPSK	1@0	-17.86	-13	PASS
4	15.0	20325	1747.5	16QAM	1@0	-17.74	-13	PASS
4	10.0	20000	1715.0	QPSK	1@0	-17.93	-13	PASS
4	10.0	20000	1715.0	16QAM	1@0	-17.09	-13	PASS
4	10.0	20175	1732.5	QPSK	1@0	-18.0	-13	PASS
4	10.0	20175	1732.5	16QAM	1@0	-18.45	-13	PASS
4	10.0	20350	1750.0	QPSK	1@0	-17.23	-13	PASS
4	10.0	20350	1750.0	16QAM	1@0	-18.0	-13	PASS
4	5.0	19975	1712.5	QPSK	1@0	-17.99	-13	PASS
4	5.0	19975	1712.5	16QAM	1@0	-18.02	-13	PASS
4	5.0	20175	1732.5	QPSK	1@0	-17.64	-13	PASS
4	5.0	20175	1732.5	16QAM	1@0	-18.01	-13	PASS
4	5.0	20375	1752.5	QPSK	1@0	-18.21	-13	PASS
4	5.0	20375	1752.5	16QAM	1@0	-17.75	-13	PASS
4	3.0	19965	1711.5	QPSK	1@0	-18.5	-13	PASS
4	3.0	19965	1711.5	16QAM	1@0	-18.3	-13	PASS
4	3.0	20175	1732.5	QPSK	1@0	-17.52	-13	PASS
4	3.0	20175	1732.5	16QAM	1@0	-18.38	-13	PASS
4	3.0	20385	1753.5	QPSK	1@0	-18.1	-13	PASS
4	3.0	20385	1753.5	16QAM	1@0	-17.09	-13	PASS
4	1.4	19957	1710.7	QPSK	1@0	-17.3	-13	PASS
4	1.4	19957	1710.7	16QAM	1@0	-18.56	-13	PASS
4	1.4	20175	1732.5	QPSK	1@0	-18.26	-13	PASS
4	1.4	20175	1732.5	16QAM	1@0	-17.81	-13	PASS
4	1.4	20393	1754.3	QPSK	1@0	-17.73	-13	PASS
4	1.4	20393	1754.3	16QAM	1@0	-18.0	-13	PASS

## Test Graphs

B4\_20M\_QPSK\_1@0\_CH\_20050



B4\_20M\_16QAM\_1@0\_CH\_20050



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