



Appendix D: Test Data for CatM1 Band 5

Product Name: Scorpion M Series Tracking System
Test Model: STMLT01

Environmental Conditions

Temperature:	23.5° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li huan





D.1 Conducted Power Output Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dBm)	Verdict
Band5	1.4MHz	20407	QPSK	1	0	Low	20.16	PASS
Band5	1.4MHz	20407	QPSK	1	5	Low	20.09	PASS
Band5	1.4MHz	20407	QPSK	6	0	Low	17.89	PASS
Band5	1.4MHz	20525	QPSK	1	0	Low	20.72	PASS
Band5	1.4MHz	20525	QPSK	1	5	Low	20.70	PASS
Band5	1.4MHz	20525	QPSK	6	0	Low	18.84	PASS
Band5	1.4MHz	20643	QPSK	1	0	High	20.47	PASS
Band5	1.4MHz	20643	QPSK	1	5	High	20.36	PASS
Band5	1.4MHz	20643	QPSK	6	0	High	17.93	PASS
Band5	1.4MHz	20407	16QAM	1	0	Low	18.69	PASS
Band5	1.4MHz	20407	16QAM	1	5	Low	18.63	PASS
Band5	1.4MHz	20407	16QAM	6	0	Low	18.00	PASS
Band5	1.4MHz	20525	16QAM	1	0	Low	19.89	PASS
Band5	1.4MHz	20525	16QAM	1	5	Low	19.88	PASS
Band5	1.4MHz	20525	16QAM	6	0	Low	18.68	PASS
Band5	1.4MHz	20643	16QAM	1	0	High	18.99	PASS
Band5	1.4MHz	20643	16QAM	1	5	High	18.90	PASS
Band5	1.4MHz	20643	16QAM	6	0	High	18.12	PASS
Band5	3MHz	20415	QPSK	1	0	Low	20.24	PASS
Band5	3MHz	20415	QPSK	1	5	Low	20.02	PASS
Band5	3MHz	20415	QPSK	6	0	Low	18.11	PASS
Band5	3MHz	20525	QPSK	1	0	Low	20.73	PASS
Band5	3MHz	20525	QPSK	1	5	Low	20.86	PASS
Band5	3MHz	20525	QPSK	6	0	Low	18.80	PASS
Band5	3MHz	20635	QPSK	1	0	High	20.46	PASS
Band5	3MHz	20635	QPSK	1	5	High	20.20	PASS
Band5	3MHz	20635	QPSK	6	0	High	18.14	PASS
Band5	3MHz	20415	16QAM	1	0	Low	19.04	PASS
Band5	3MHz	20415	16QAM	1	5	Low	19.02	PASS
Band5	3MHz	20415	16QAM	6	0	Low	18.16	PASS
Band5	3MHz	20525	16QAM	1	0	Low	19.78	PASS
Band5	3MHz	20525	16QAM	1	5	Low	19.73	PASS
Band5	3MHz	20525	16QAM	6	0	Low	18.63	PASS
Band5	3MHz	20635	16QAM	1	0	High	19.22	PASS
Band5	3MHz	20635	16QAM	1	5	High	19.09	PASS



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Band5	3MHz	20635	16QAM	6	0	High	18.15	PASS
Band5	5MHz	20425	QPSK	1	0	Low	20.07	PASS
Band5	5MHz	20425	QPSK	1	5	Low	20.00	PASS
Band5	5MHz	20425	QPSK	6	0	Low	18.88	PASS
Band5	5MHz	20525	QPSK	1	0	Low	20.68	PASS
Band5	5MHz	20525	QPSK	1	5	Low	20.49	PASS
Band5	5MHz	20525	QPSK	6	0	Low	19.57	PASS
Band5	5MHz	20625	QPSK	1	0	High	20.09	PASS
Band5	5MHz	20625	QPSK	1	5	High	19.94	PASS
Band5	5MHz	20625	QPSK	6	0	High	19.08	PASS
Band5	5MHz	20425	16QAM	1	0	Low	19.74	PASS
Band5	5MHz	20425	16QAM	1	5	Low	19.57	PASS
Band5	5MHz	20425	16QAM	6	0	Low	18.97	PASS
Band5	5MHz	20525	16QAM	1	0	Low	20.76	PASS
Band5	5MHz	20525	16QAM	1	5	Low	20.76	PASS
Band5	5MHz	20525	16QAM	6	0	Low	19.58	PASS
Band5	5MHz	20625	16QAM	1	0	High	20.23	PASS
Band5	5MHz	20625	16QAM	1	5	High	20.30	PASS
Band5	5MHz	20625	16QAM	6	0	High	19.09	PASS
Band5	10MHz	20450	QPSK	1	0	Low	20.09	PASS
Band5	10MHz	20450	QPSK	1	5	Low	19.86	PASS
Band5	10MHz	20450	QPSK	6	0	Low	19.11	PASS
Band5	10MHz	20525	QPSK	1	0	Low	20.71	PASS
Band5	10MHz	20525	QPSK	1	5	Low	20.48	PASS
Band5	10MHz	20525	QPSK	6	0	Low	19.45	PASS
Band5	10MHz	20600	QPSK	1	0	High	20.31	PASS
Band5	10MHz	20600	QPSK	1	5	High	19.78	PASS
Band5	10MHz	20600	QPSK	6	0	High	19.21	PASS
Band5	10MHz	20450	16QAM	1	0	Low	20.09	PASS
Band5	10MHz	20450	16QAM	1	5	Low	19.98	PASS
Band5	10MHz	20450	16QAM	6	0	Low	19.12	PASS
Band5	10MHz	20525	16QAM	1	0	Low	20.77	PASS
Band5	10MHz	20525	16QAM	1	5	Low	20.70	PASS
Band5	10MHz	20525	16QAM	6	0	Low	19.54	PASS
Band5	10MHz	20600	16QAM	1	0	High	20.10	PASS
Band5	10MHz	20600	16QAM	1	5	High	20.17	PASS
Band5	10MHz	20600	16QAM	6	0	High	19.21	PASS



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D.2 Peak-to-Average Ratio(CCDF)

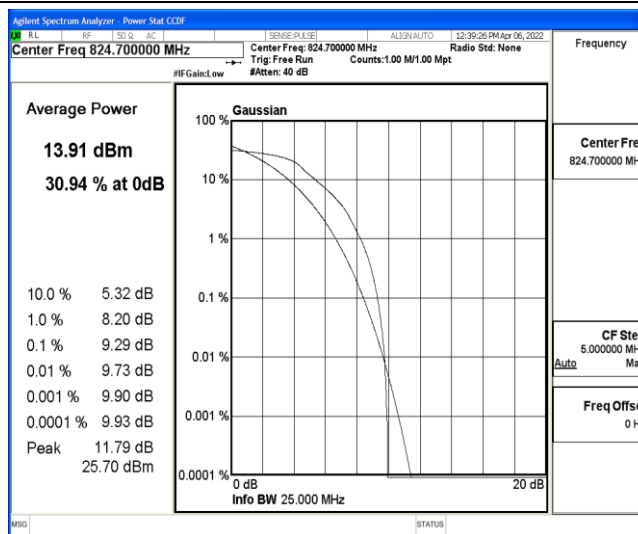
Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band5	1.4MHz	20407	QPSK	6	0	Low	9.29	<=13	PASS
Band5	1.4MHz	20525	QPSK	6	0	Low	8.50	<=13	PASS
Band5	1.4MHz	20643	QPSK	6	0	Low	9.79	<=13	PASS
Band5	1.4MHz	20407	16QAM	6	0	Low	10.04	<=13	PASS
Band5	1.4MHz	20525	16QAM	6	0	Low	9.89	<=13	PASS
Band5	1.4MHz	20643	16QAM	6	0	Low	9.96	<=13	PASS
Band5	3MHz	20415	QPSK	6	0	Low	9.08	<=13	PASS
Band5	3MHz	20525	QPSK	6	0	Low	10.47	<=13	PASS
Band5	3MHz	20635	QPSK	6	0	Low	9.82	<=13	PASS
Band5	3MHz	20415	16QAM	6	0	Low	10.50	<=13	PASS
Band5	3MHz	20525	16QAM	6	0	Low	10.71	<=13	PASS
Band5	3MHz	20635	16QAM	6	0	Low	9.51	<=13	PASS
Band5	5MHz	20425	QPSK	6	0	Low	9.14	<=13	PASS
Band5	5MHz	20525	QPSK	6	0	Low	8.39	<=13	PASS
Band5	5MHz	20625	QPSK	6	0	Low	12.36	<=13	PASS
Band5	5MHz	20425	16QAM	6	0	Low	11.09	<=13	PASS
Band5	5MHz	20525	16QAM	6	0	Low	8.79	<=13	PASS
Band5	5MHz	20625	16QAM	6	0	Low	9.18	<=13	PASS
Band5	10MHz	20450	QPSK	6	0	Low	8.97	<=13	PASS
Band5	10MHz	20525	QPSK	6	0	Low	8.87	<=13	PASS
Band5	10MHz	20600	QPSK	6	0	Low	9.96	<=13	PASS
Band5	10MHz	20450	16QAM	6	0	Low	10.70	<=13	PASS
Band5	10MHz	20525	16QAM	6	0	Low	9.62	<=13	PASS
Band5	10MHz	20600	16QAM	6	0	Low	10.26	<=13	PASS

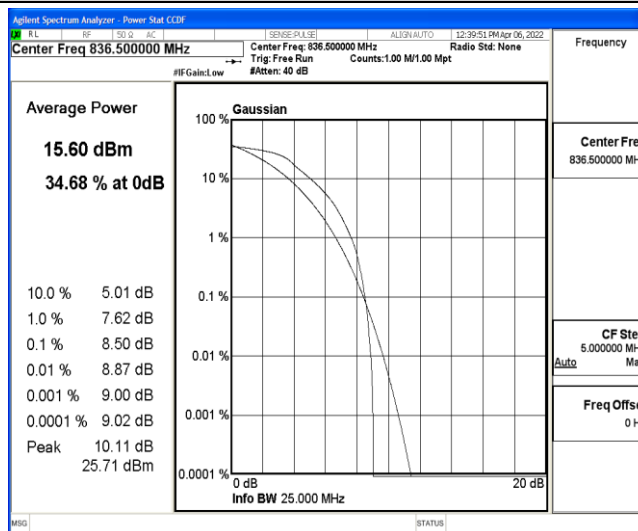




Test Graphs



Band5-1.4MHz-QPSK-20407-6-0-Low-9.29-<=13-PASS



Band5-1.4MHz-QPSK-20525-6-0-Low-8.50-<=13-PASS

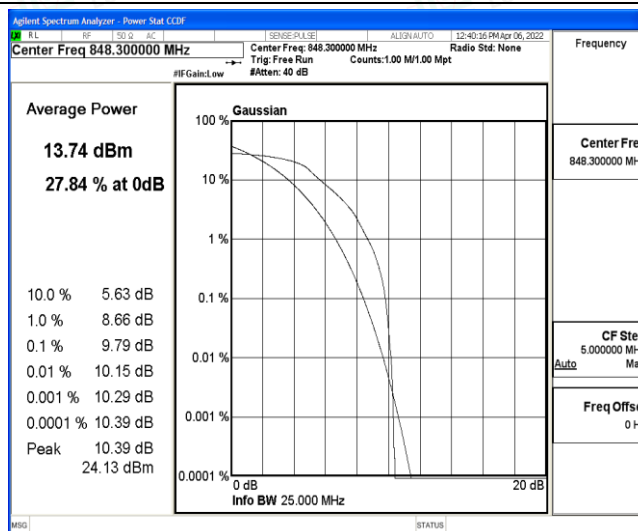


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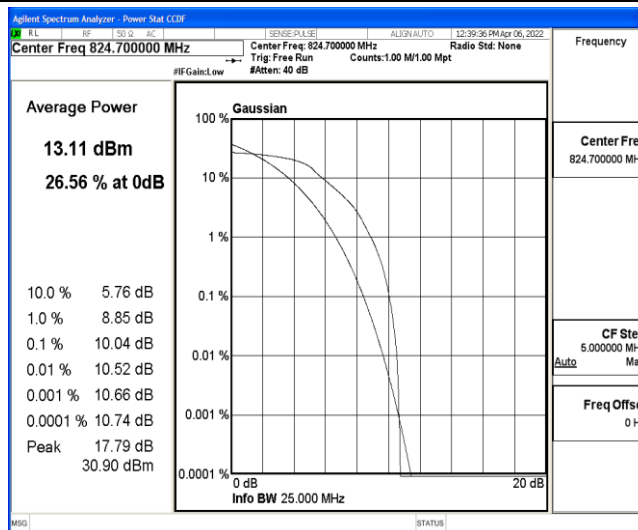
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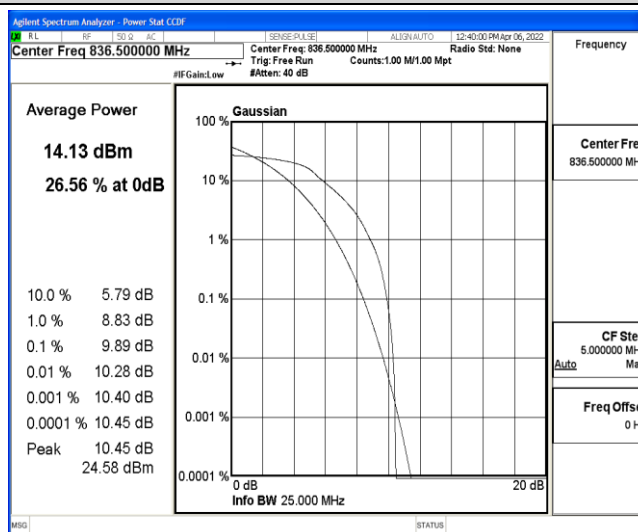
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Band5-1.4MHz-QPSK-20643-6-0-Low-9.79-<=13-PASS

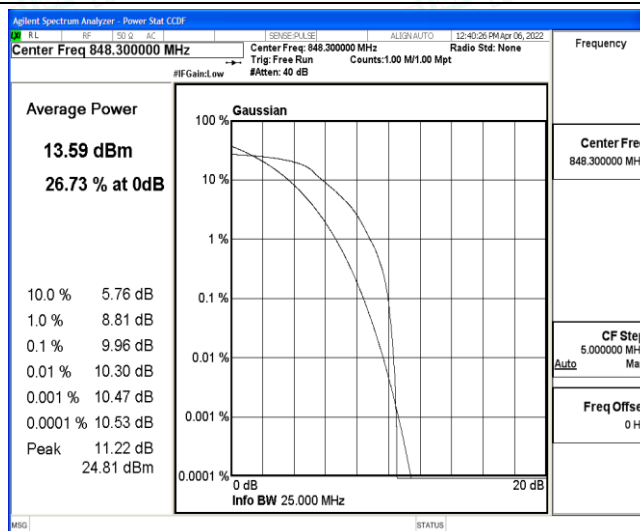


Band5-1.4MHz-16QAM-20407-6-0-Low-10.04-<=13-PASS

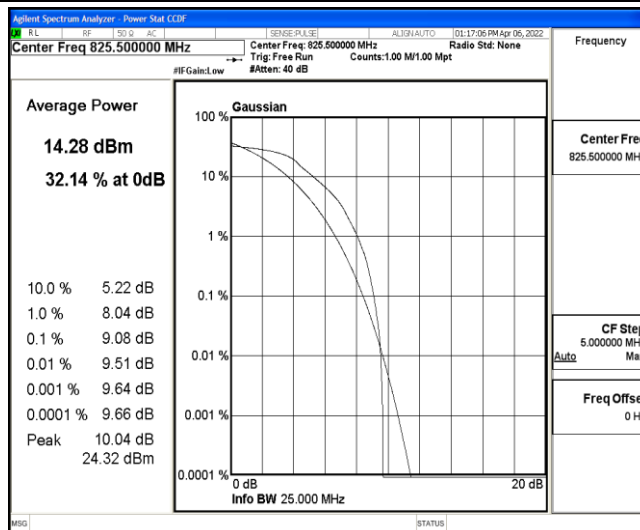


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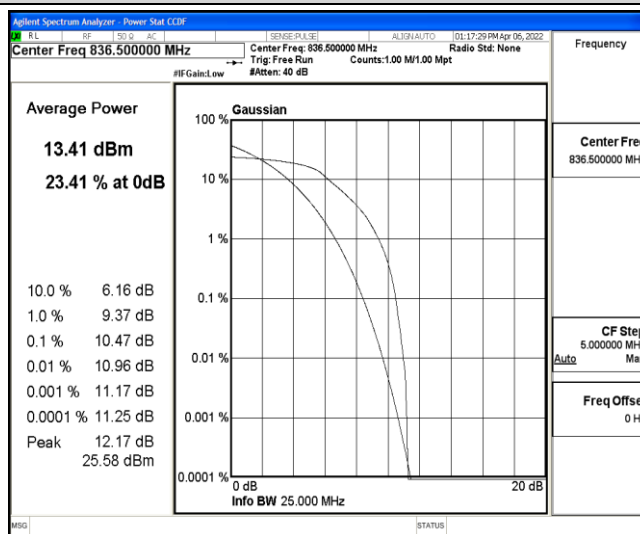




Band5-1.4MHz-16QAM-20643-6-0-Low-9.96-<=13-PASS

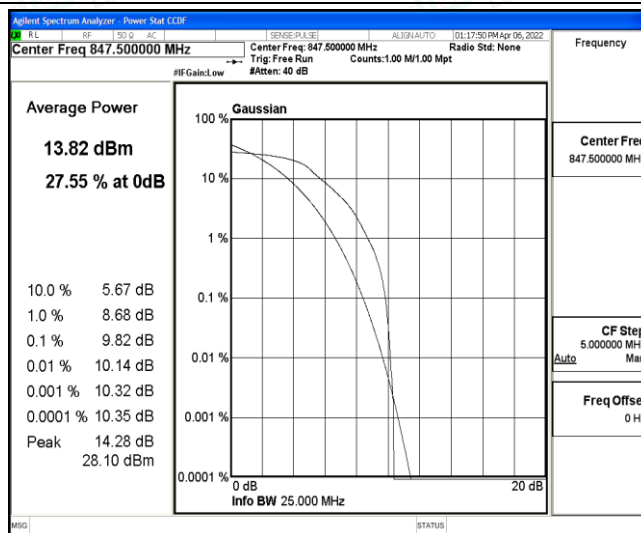


Band5-3MHz-QPSK-20415-6-0-Low-9.08-<=13-PASS

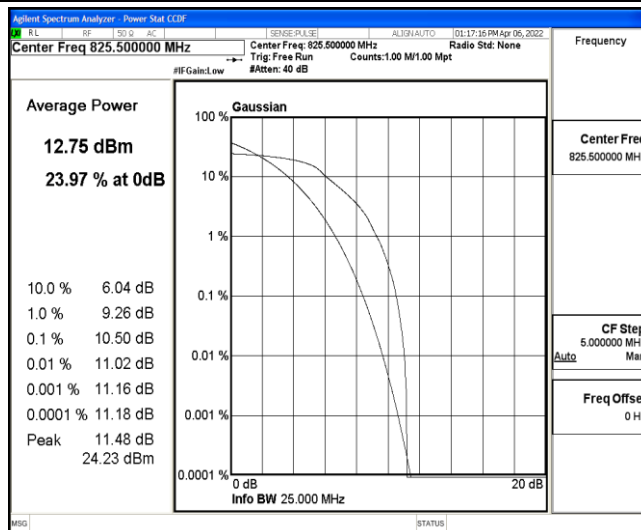


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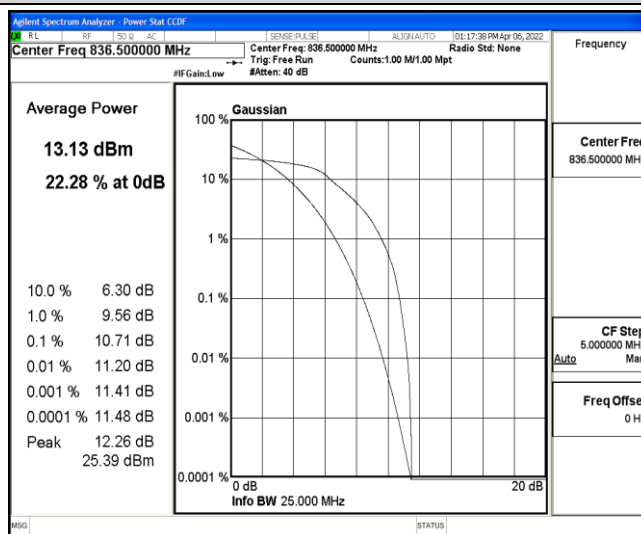




Band5-3MHz-QPSK-20635-6-0-Low-9.82-<=13-PASS



Band5-3MHz-16QAM-20415-6-0-Low-10.50-<=13-PASS



Band5-3MHz-16QAM-20525-6-0-Low-10.71-<=13-PASS

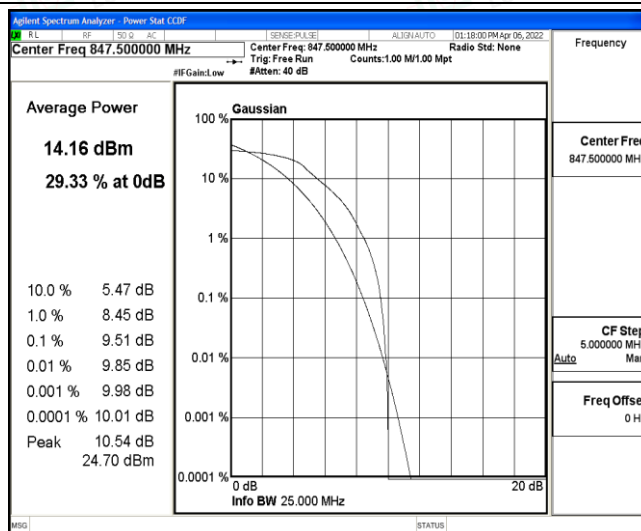


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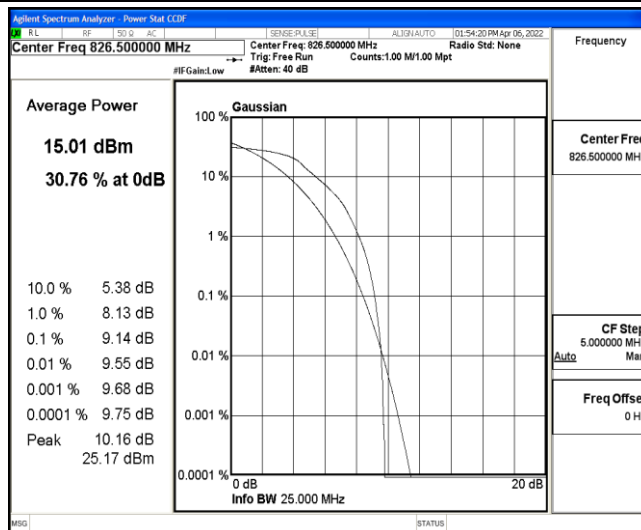
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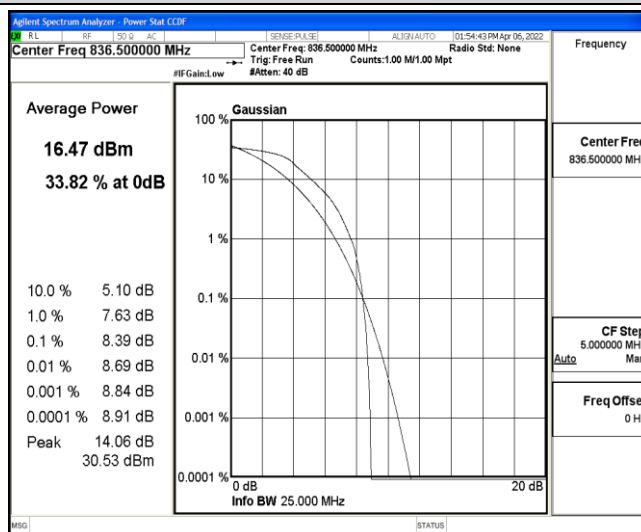
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Band5-3MHz-16QAM-20635-6-0-Low-9.51-<=13-PASS



Band5-5MHz-QPSK-20425-6-0-Low-9.14-<=13-PASS



Band5-5MHz-QPSK-20525-6-0-Low-8.39-<=13-PASS

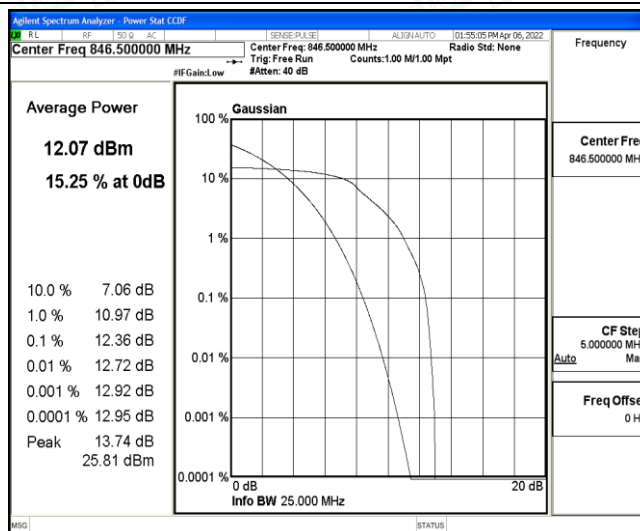


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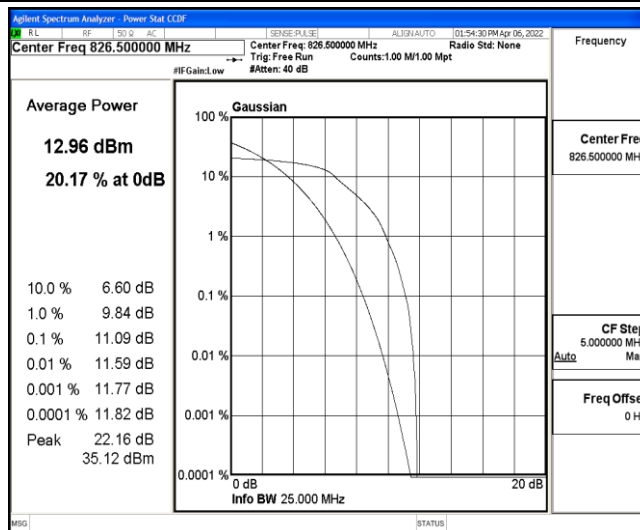
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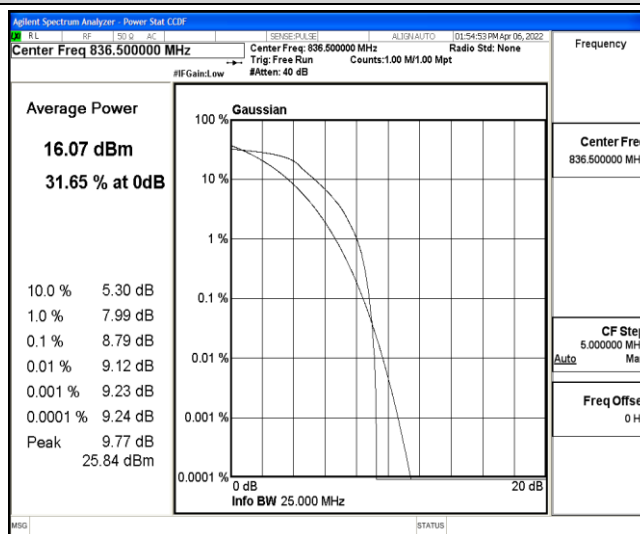
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Band5-5MHz-QPSK-20625-6-0-Low-12.36-<=13-PASS



Band5-5MHz-16QAM-20425-6-0-Low-11.09-<=13-PASS



Band5-5MHz-16QAM-20525-6-0-Low-8.79-<=13-PASS

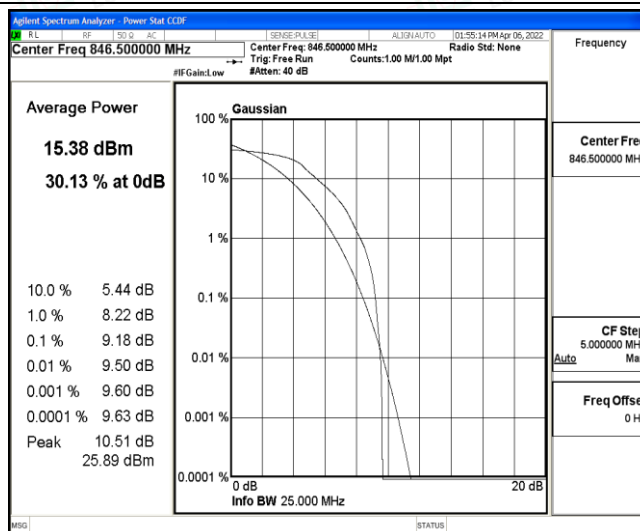


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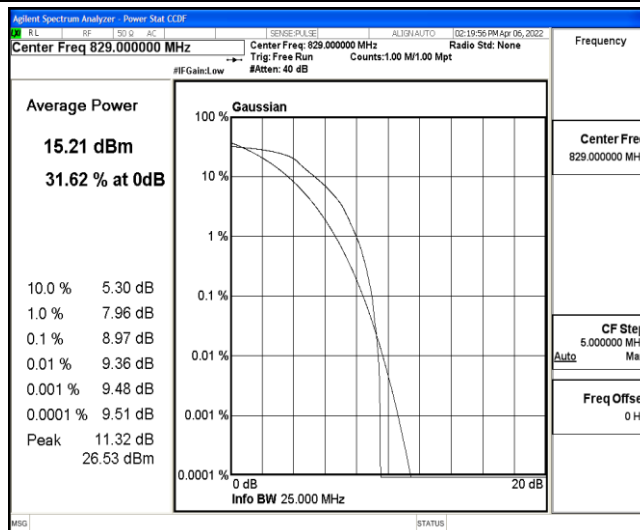
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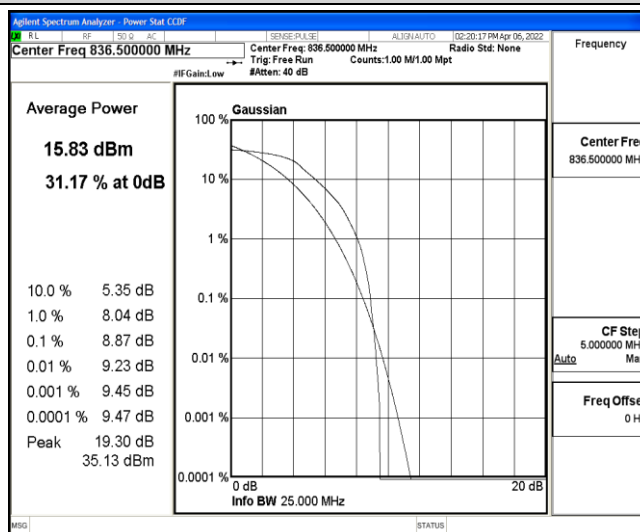
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Band5-5MHz-16QAM-20625-6-0-Low-9.18-<=13-PASS



Band5-10MHz-QPSK-20450-6-0-Low-8.97-<=13-PASS



Band5-10MHz-QPSK-20525-6-0-Low-8.87-<=13-PASS

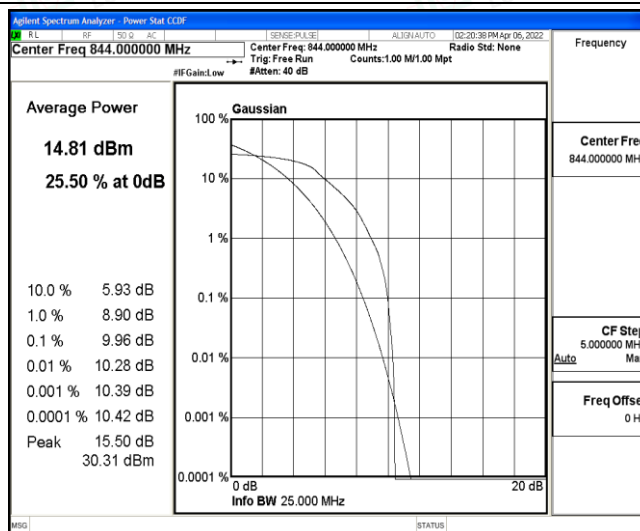


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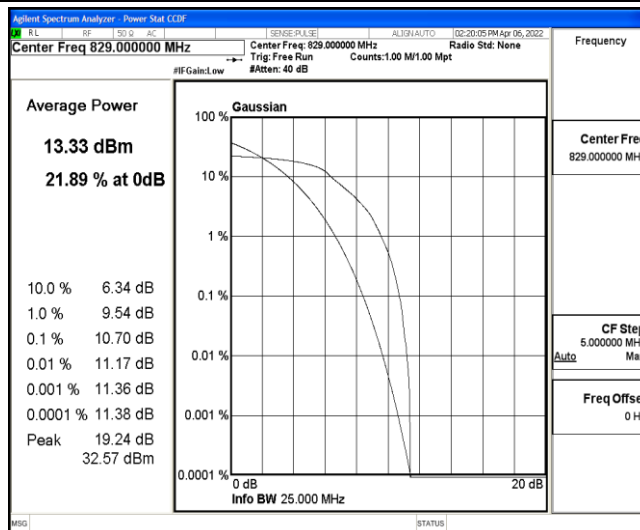
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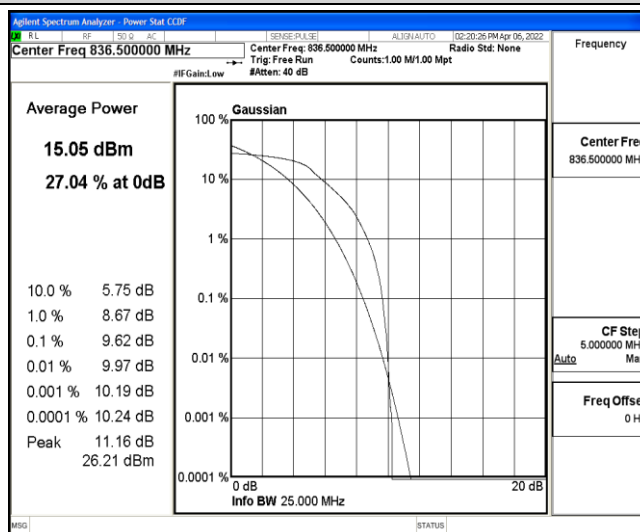
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Band5-10MHz-QPSK-20600-6-0-Low-9.96-<=13-PASS

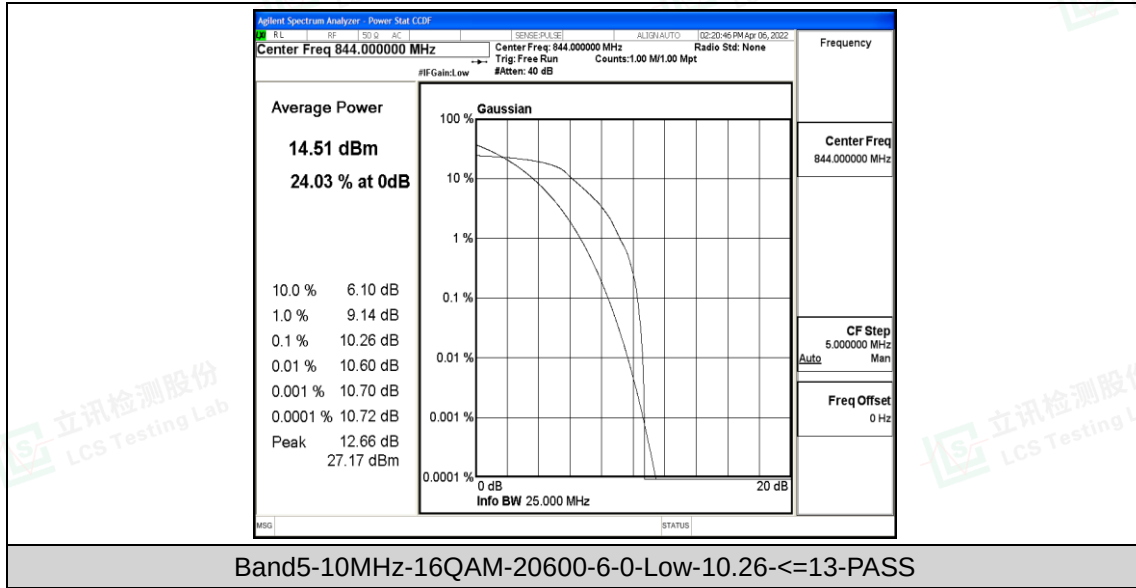


Band5-10MHz-16QAM-20450-6-0-Low-10.70-<=13-PASS



Band5-10MHz-16QAM-20525-6-0-Low-9.62-<=13-PASS







D.3 26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band5	1.4MHz	20407	QPSK	6	0	Low	1.0875	1.274	PASS
Band5	1.4MHz	20525	QPSK	6	0	Low	1.0918	1.262	PASS
Band5	1.4MHz	20643	QPSK	6	0	High	1.0984	1.270	PASS
Band5	1.4MHz	20407	16QAM	6	0	Low	1.0900	1.265	PASS
Band5	1.4MHz	20525	16QAM	6	0	Low	1.0858	1.265	PASS
Band5	1.4MHz	20643	16QAM	6	0	High	1.1002	1.281	PASS
Band5	3MHz	20415	QPSK	6	0	Low	1.1069	1.322	PASS
Band5	3MHz	20525	QPSK	6	0	Low	1.1073	1.318	PASS
Band5	3MHz	20635	QPSK	6	0	High	1.1213	1.341	PASS
Band5	3MHz	20415	16QAM	6	0	Low	1.1059	1.339	PASS
Band5	3MHz	20525	16QAM	6	0	Low	1.1107	1.323	PASS
Band5	3MHz	20635	16QAM	6	0	High	1.1182	1.334	PASS
Band5	5MHz	20425	QPSK	6	0	Low	1.1798	1.588	PASS
Band5	5MHz	20525	QPSK	6	0	Low	1.1712	1.579	PASS
Band5	5MHz	20625	QPSK	6	0	High	1.1831	1.410	PASS
Band5	5MHz	20425	16QAM	6	0	Low	1.1770	1.515	PASS
Band5	5MHz	20525	16QAM	6	0	Low	1.1728	1.571	PASS
Band5	5MHz	20625	16QAM	6	0	High	1.1904	1.427	PASS
Band5	10MHz	20450	QPSK	6	0	Low	1.3479	2.153	PASS
Band5	10MHz	20525	QPSK	6	0	Low	1.3447	2.042	PASS
Band5	10MHz	20600	QPSK	6	0	High	1.3269	1.664	PASS
Band5	10MHz	20450	16QAM	6	0	Low	1.3337	2.161	PASS
Band5	10MHz	20525	16QAM	6	0	Low	1.3307	1.875	PASS
Band5	10MHz	20600	16QAM	6	0	High	1.3429	1.736	PASS



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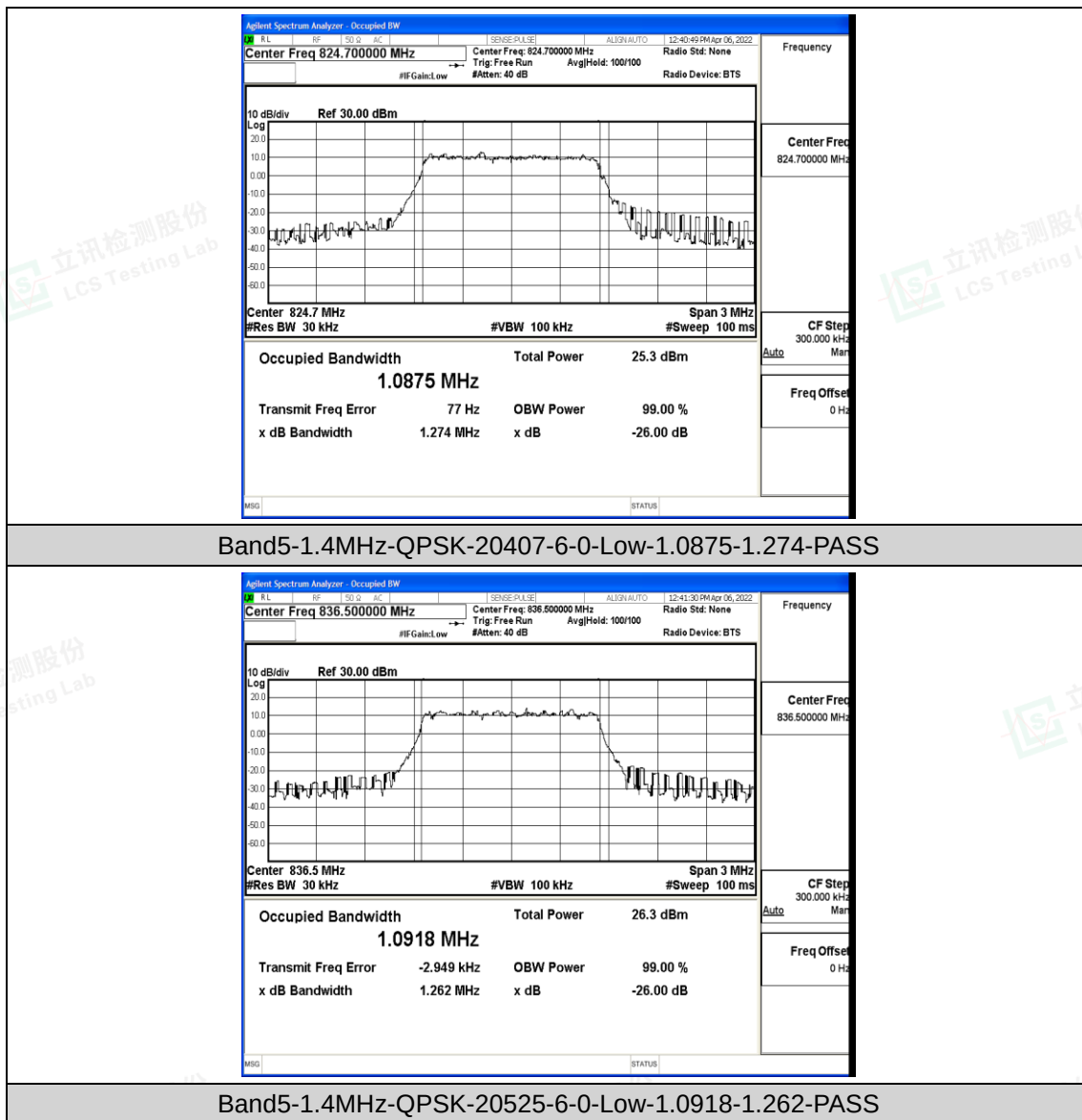
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Test Graphs

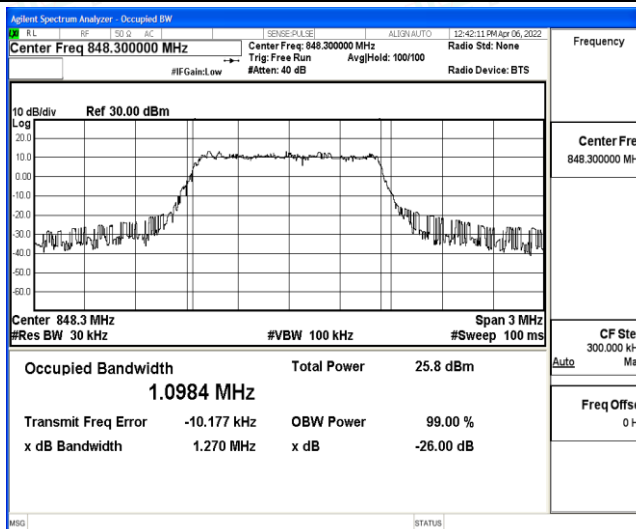


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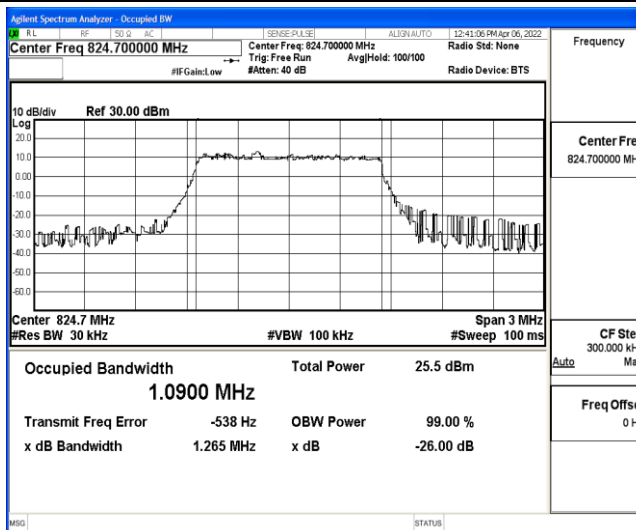
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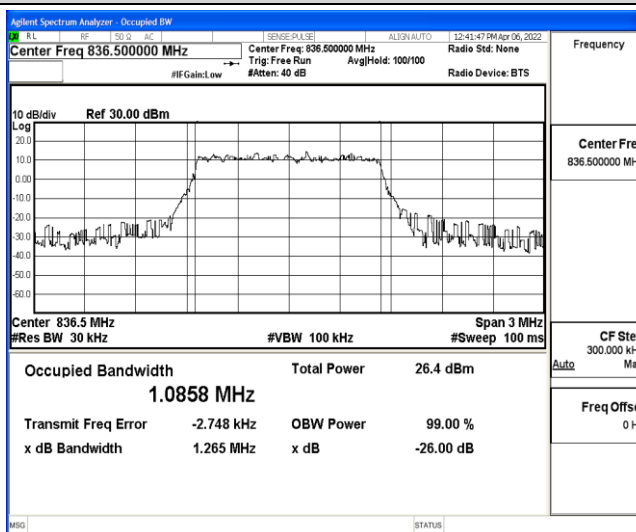
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Band5-1.4MHz-QPSK-20643-6-0-High-1.0984-1.270-PASS

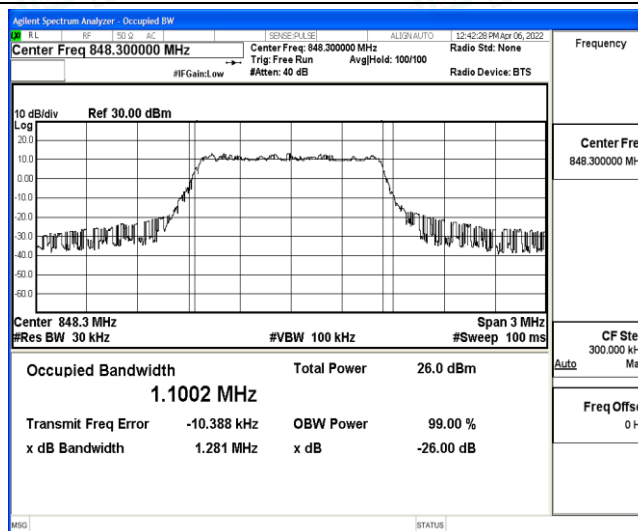


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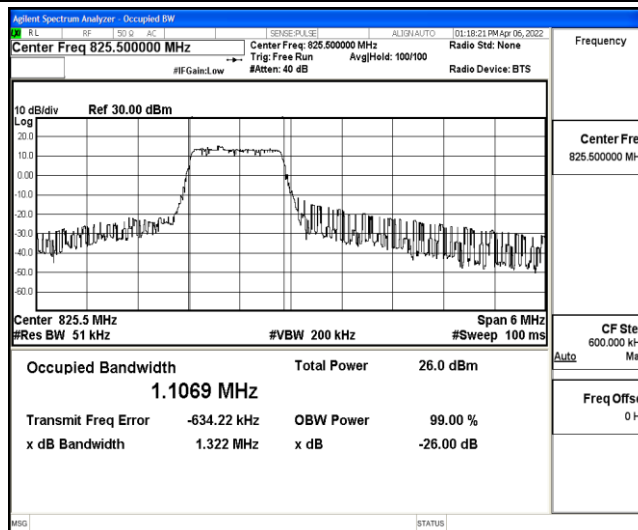


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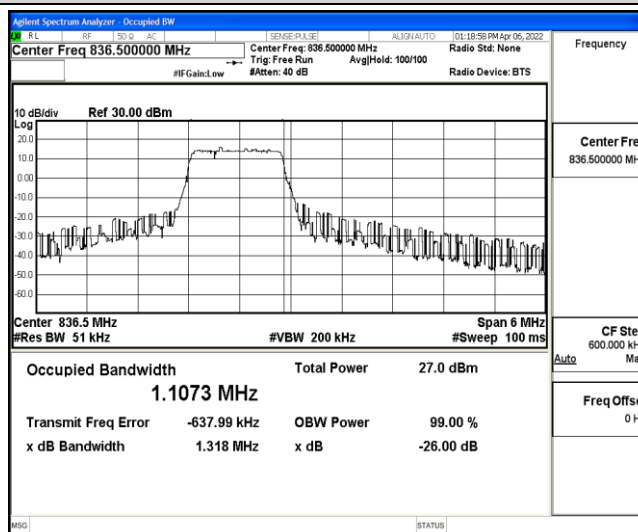




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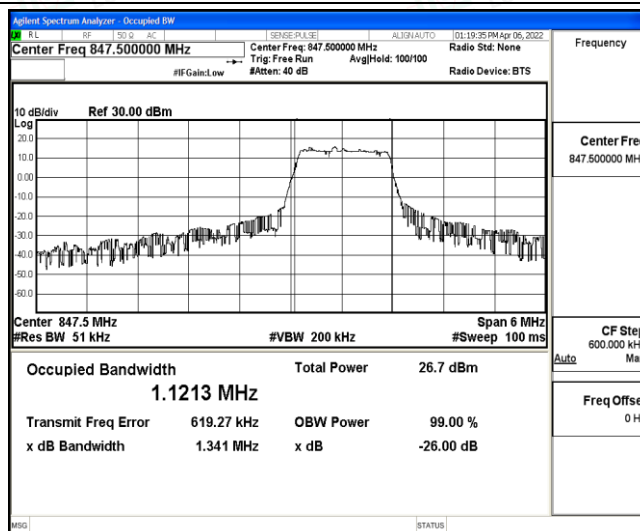


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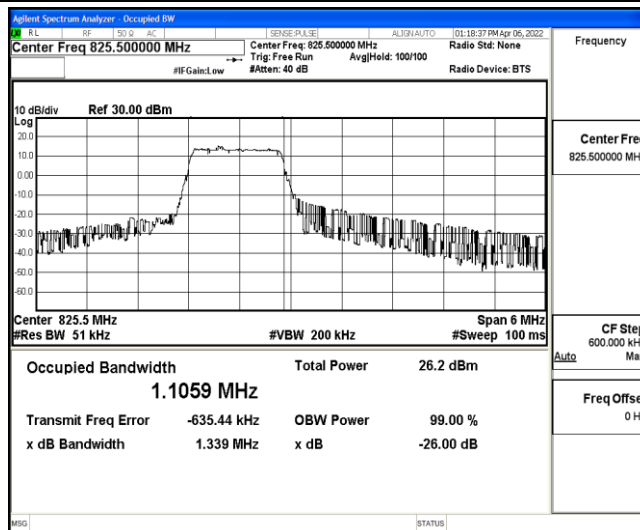


Band5-3MHz-QPSK-20525-6-0-Low-1.1073-1.318-PASS

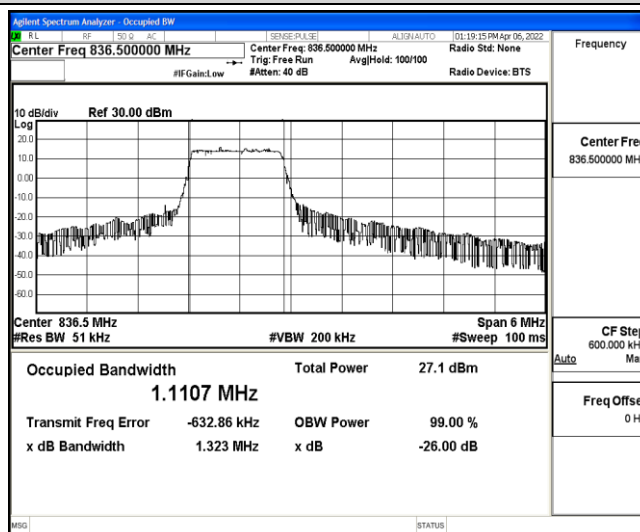




Band5-3MHz-QPSK-20635-6-0-High-1.1213-1.341-PASS

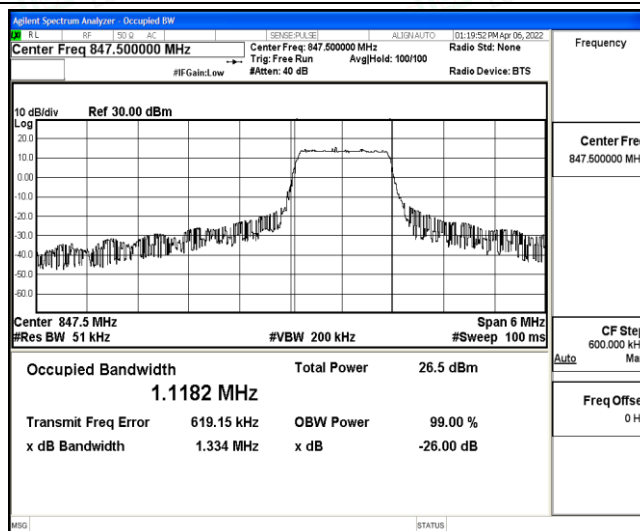


Band5-3MHz-16QAM-20415-6-0-Low-1.1059-1.339-PASS

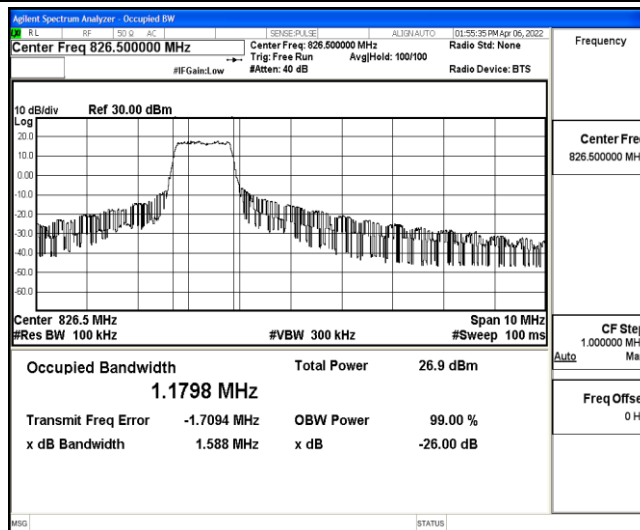


Band5-3MHz-16QAM-20525-6-0-Low-1.1107-1.323-PASS

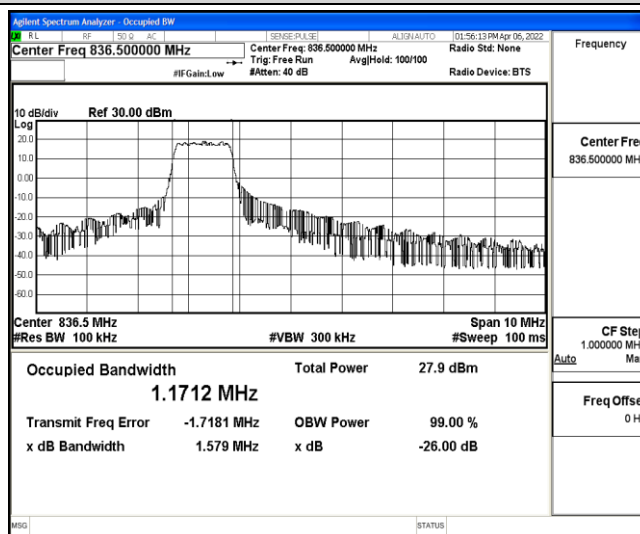




Band5-3MHz-16QAM-20635-6-0-High-1.1182-1.334-PASS

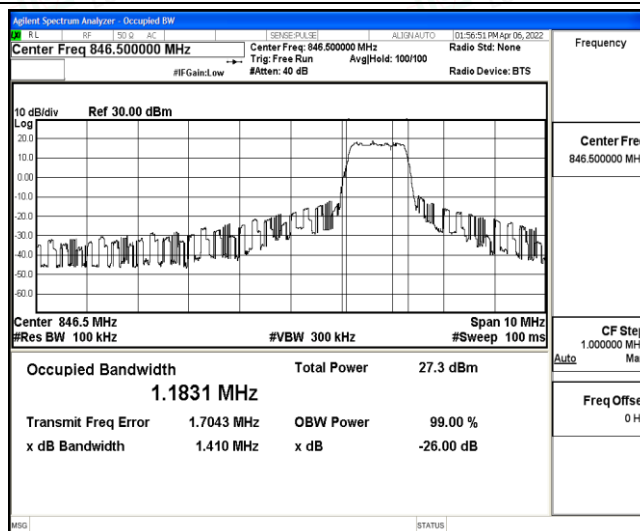


Band5-5MHz-QPSK-20425-6-0-Low-1.1798-1.588-PASS

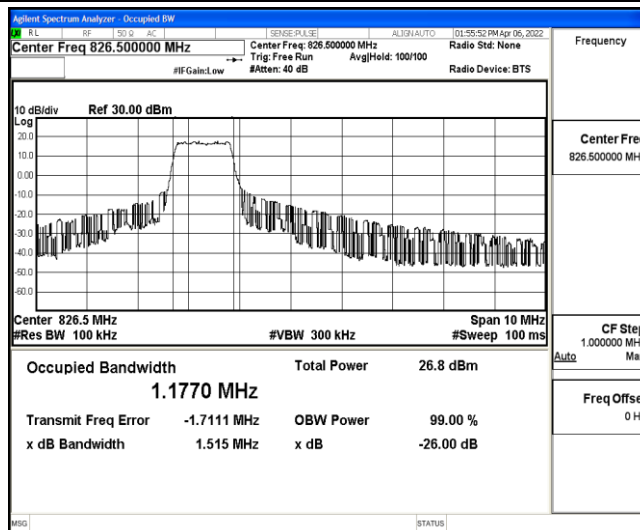


Band5-5MHz-QPSK-20525-6-0-Low-1.1712-1.579-PASS

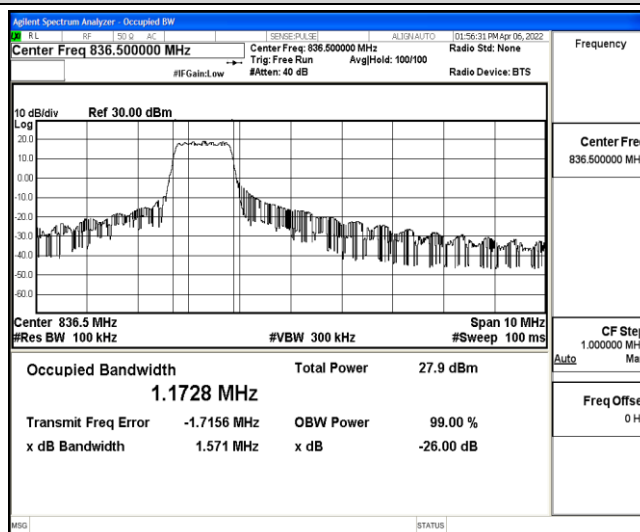




Band5-5MHz-QPSK-20625-6-0-High-1.1831-1.410-PASS

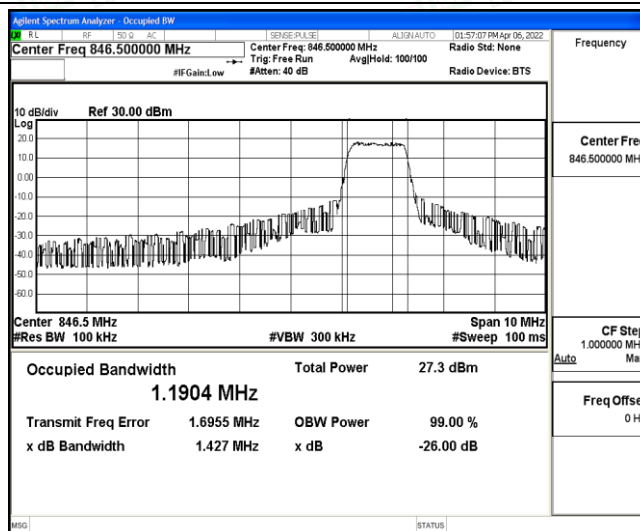


Band5-5MHz-16QAM-20425-6-0-Low-1.1770-1.515-PASS

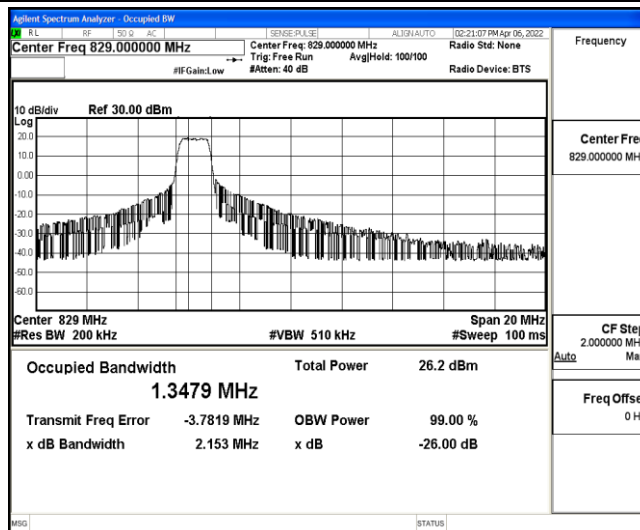


Band5-5MHz-16QAM-20525-6-0-Low-1.1728-1.571-PASS

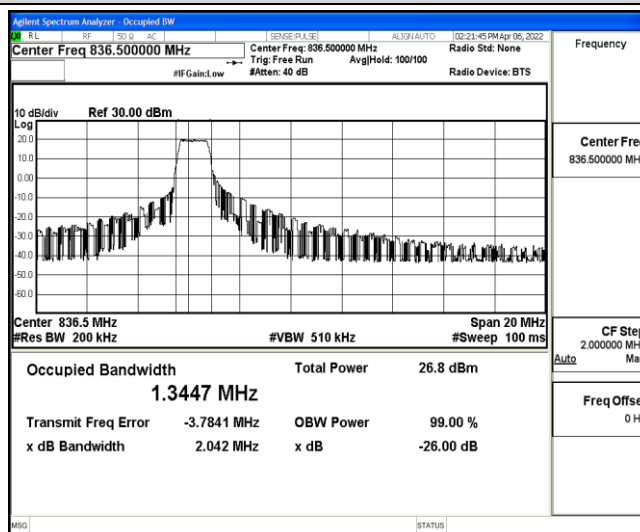




Band5-5MHz-16QAM-20625-6-0-High-1.1904-1.427-PASS

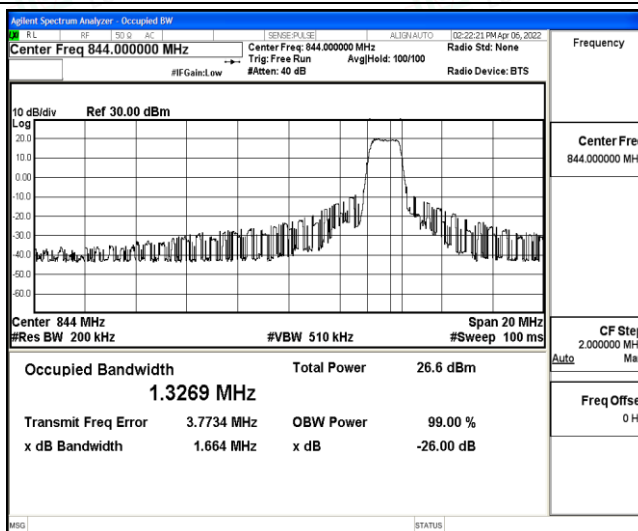


Band5-10MHz-QPSK-20450-6-0-Low-1.3479-2.153-PASS

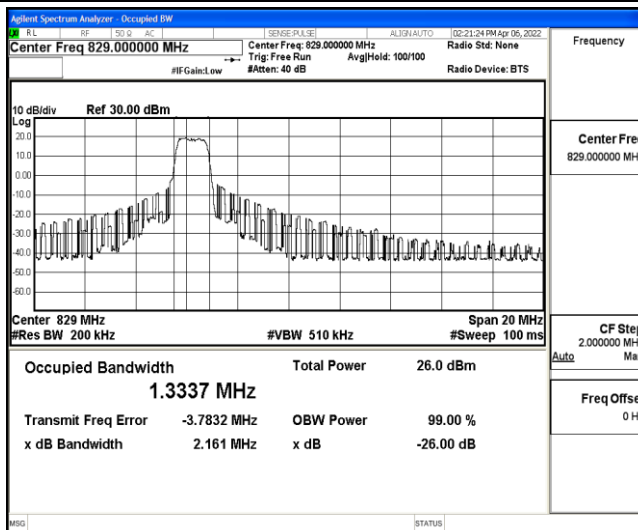


Band5-10MHz-QPSK-20525-6-0-Low-1.3447-2.042-PASS

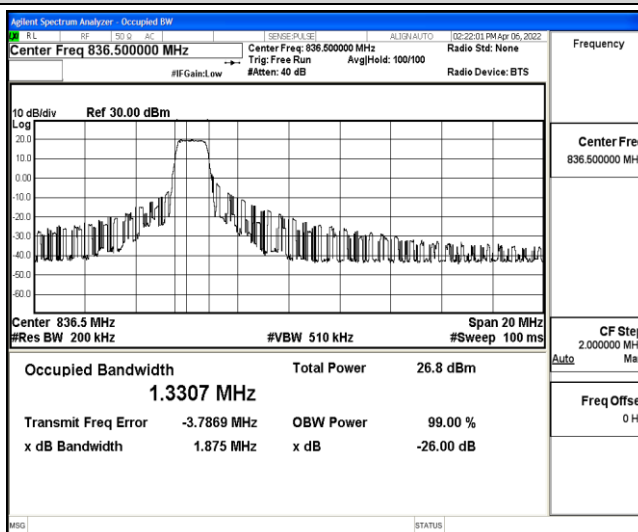




Band5-10MHz-QPSK-20600-6-0-High-1.3269-1.664-PASS

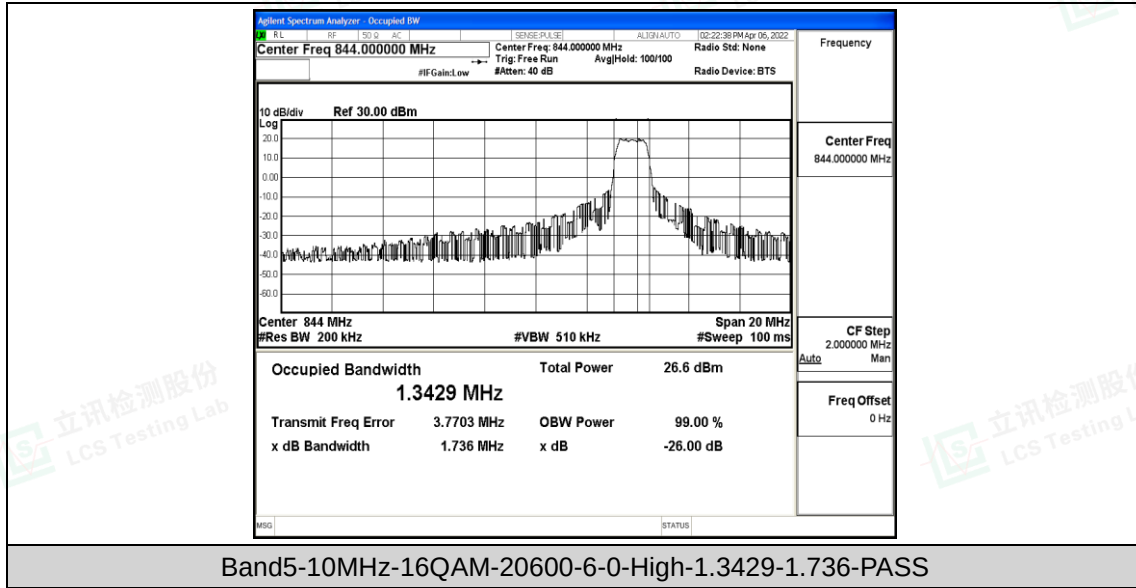


Band5-10MHz-16QAM-20450-6-0-Low-1.3337-2.161-PASS



Band5-10MHz-16QAM-20525-6-0-Low-1.3307-1.875-PASS





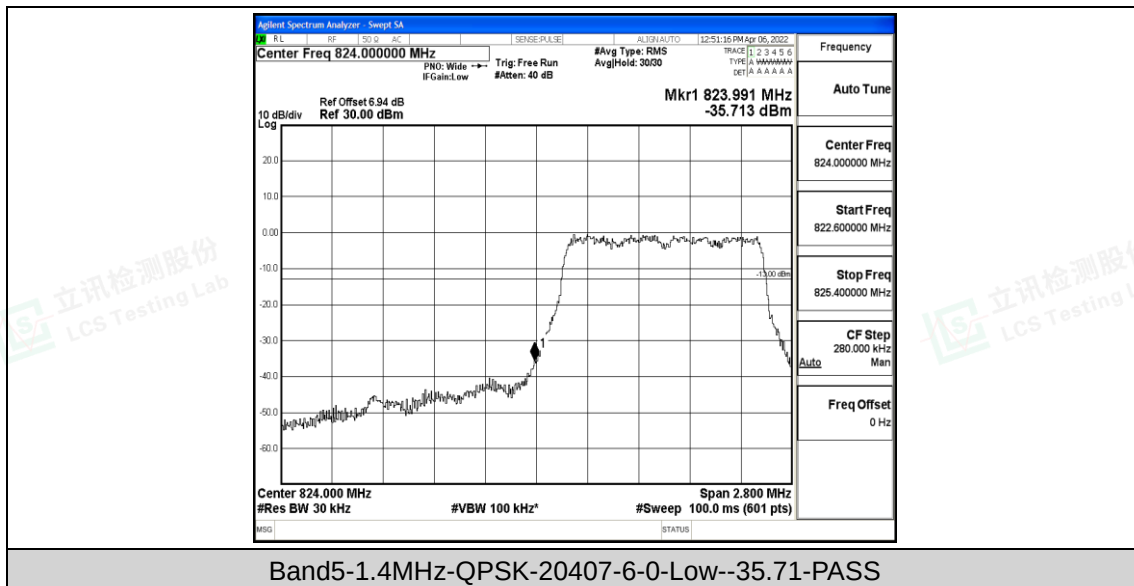


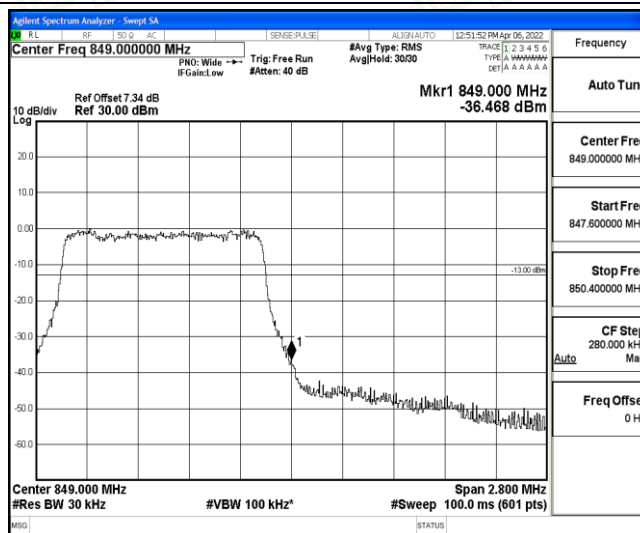
D.4 Band Edge

Test Result

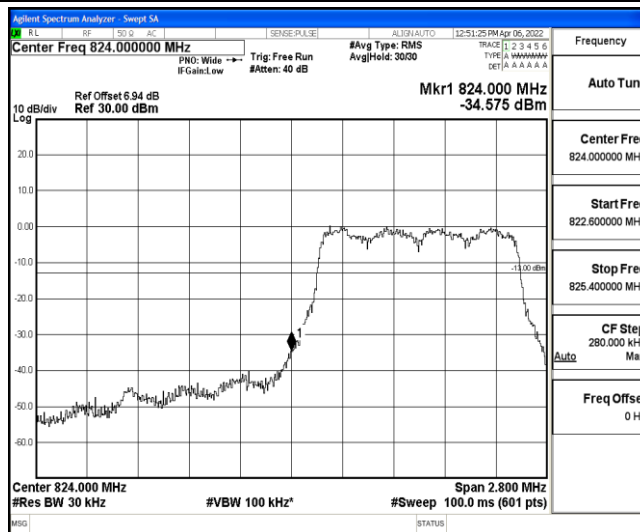
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Result(dBm)	Verdict
Band5	1.4MHz	20407	QPSK	6	0	Low	-35.71	PASS
Band5	1.4MHz	20643	QPSK	6	0	Low	-36.47	PASS
Band5	1.4MHz	20407	16QAM	6	0	Low	-34.58	PASS
Band5	1.4MHz	20643	16QAM	6	0	Low	-36.43	PASS
Band5	3MHz	20415	QPSK	6	0	Low	-39.16	PASS
Band5	3MHz	20635	QPSK	6	0	Low	-48.98	PASS
Band5	3MHz	20415	16QAM	6	0	Low	-39.71	PASS
Band5	3MHz	20635	16QAM	6	0	Low	-50.29	PASS
Band5	5MHz	20425	QPSK	6	0	Low	-33.34	PASS
Band5	5MHz	20625	QPSK	6	0	Low	-52.27	PASS
Band5	5MHz	20425	16QAM	6	0	Low	-35.76	PASS
Band5	5MHz	20625	16QAM	6	0	Low	-51.99	PASS
Band5	10MHz	20450	QPSK	6	0	Low	-35.32	PASS
Band5	10MHz	20600	QPSK	6	0	Low	-51.67	PASS
Band5	10MHz	20450	16QAM	6	0	Low	-35.74	PASS
Band5	10MHz	20600	16QAM	6	0	Low	-51.81	PASS

Test Graphs

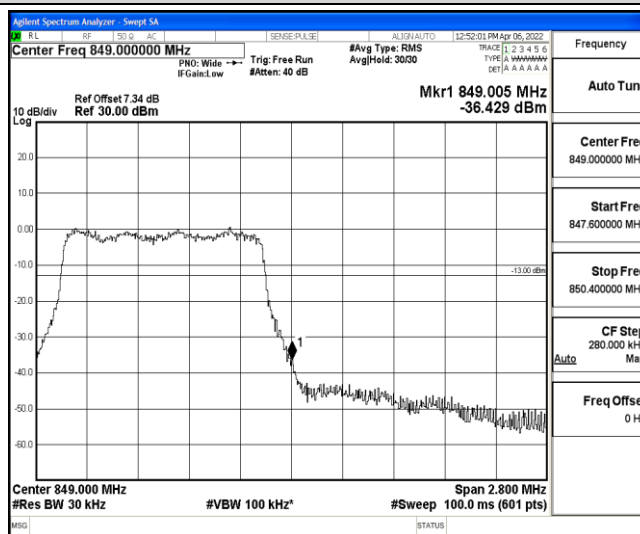




Band5-1.4MHz-QPSK-20643-6-0-Low--36.47-PASS

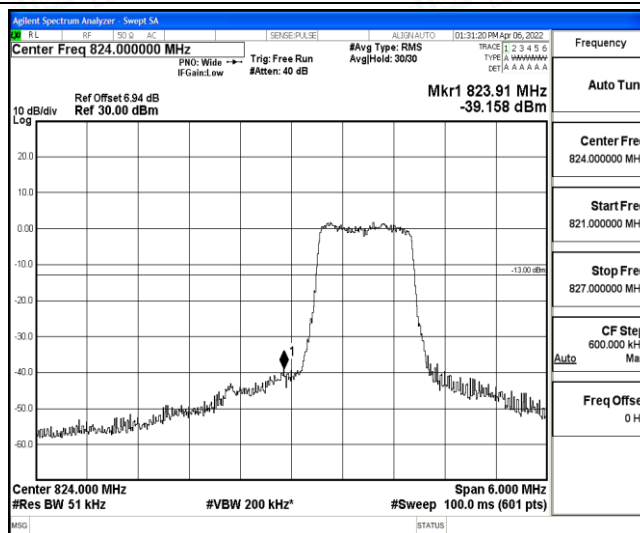


Band5-1.4MHz-16QAM-20407-6-0-Low--34.58-PASS

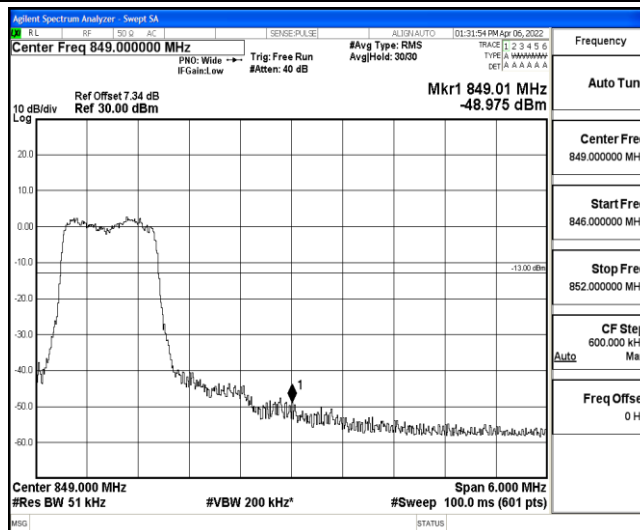


Band5-1.4MHz-16QAM-20643-6-0-Low--36.43-PASS

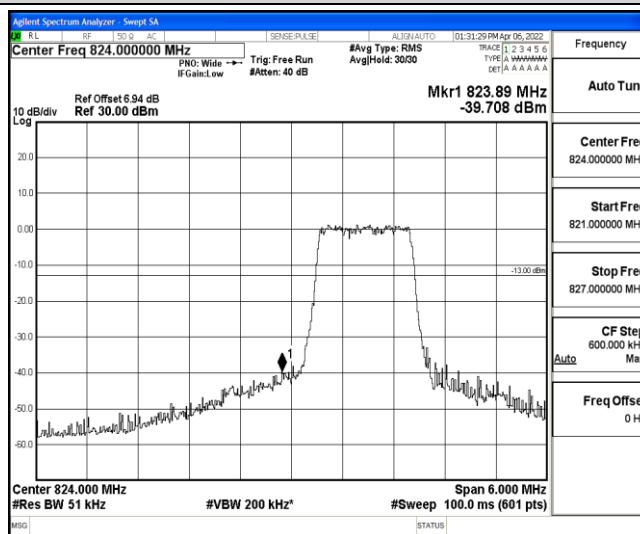




Band5-3MHz-QPSK-20415-6-0-Low--39.16-PASS



Band5-3MHz-QPSK-20635-6-0-Low--48.98-PASS



Band5-3MHz-16QAM-20415-6-0-Low--39.71-PASS

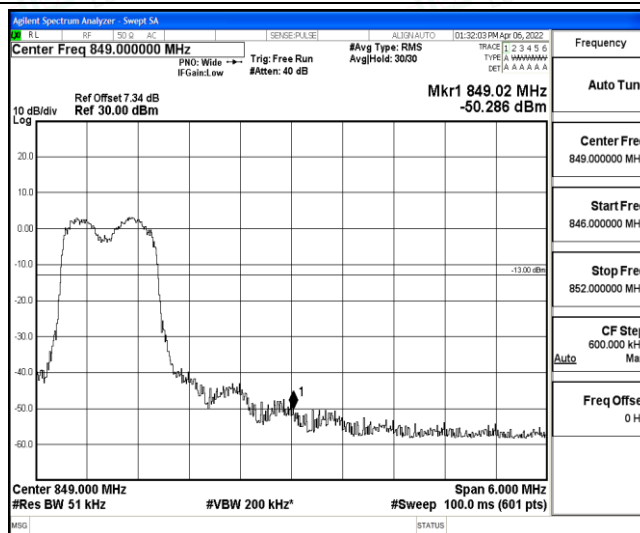


Shenzhen LCS Compliance Testing Laboratory Ltd.

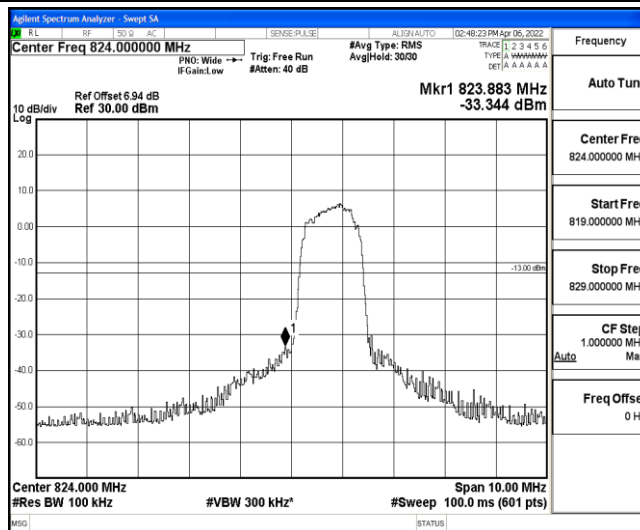
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

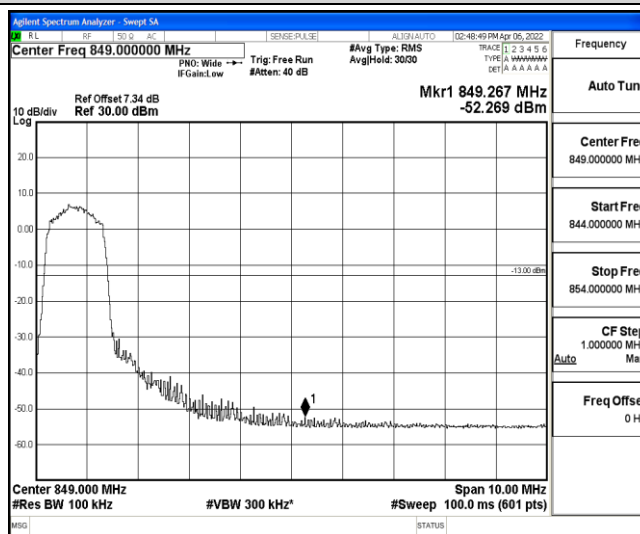
Scan code to check authenticity



Band5-3MHz-16QAM-20635-6-0-Low--50.29-PASS



Band5-5MHz-QPSK-20425-6-0-Low--33.34-PASS



Band5-5MHz-QPSK-20625-6-0-Low--52.27-PASS

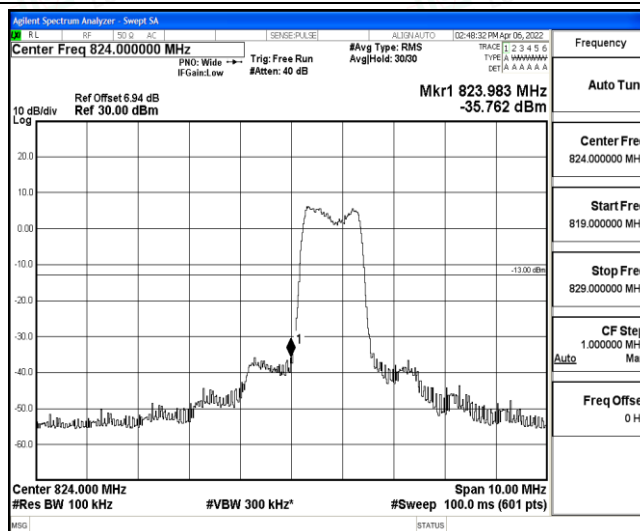


Shenzhen LCS Compliance Testing Laboratory Ltd.

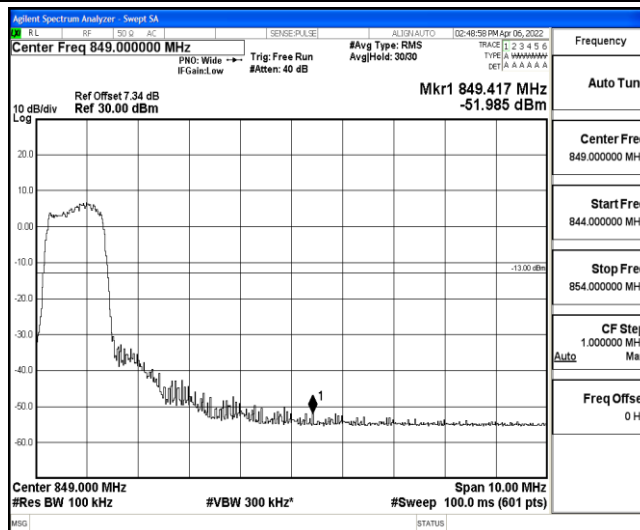
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

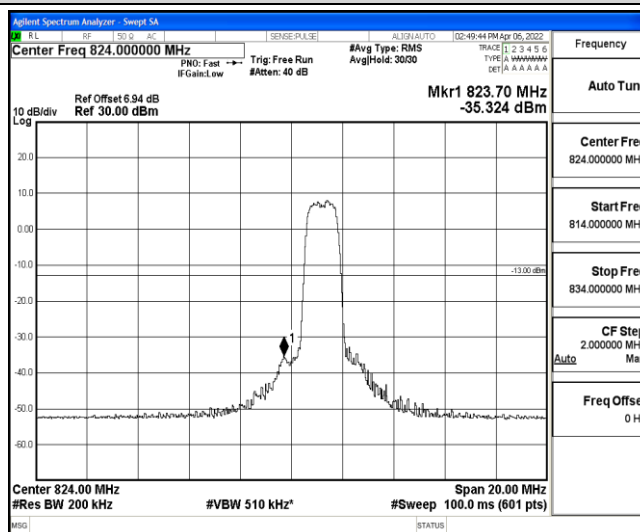
Scan code to check authenticity



Band5-5MHz-16QAM-20425-6-0-Low--35.76-PASS



Band5-5MHz-16QAM-20625-6-0-Low--51.99-PASS



Band5-10MHz-QPSK-20450-6-0-Low--35.32-PASS

