

Appendix for Band 5

Product Name: Intelligent Two Way Radio
Model No: T640A

Appendix A: Average Power Output Data

Test Result

Channel Bandwidth: 1.4 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	LCH	1	0	23.9	PASS
		1	3	24.07	PASS
		1	5	23.89	PASS
		3	0	23.93	PASS
		3	2	24.01	PASS
		3	3	23.94	PASS
		6	0	22.96	PASS
	MCH	1	0	24.14	PASS
		1	3	24.22	PASS
		1	5	24.11	PASS
		3	0	24.19	PASS
		3	2	24.13	PASS
		3	3	24.19	PASS
		6	0	23.13	PASS
	HCH	1	0	23.92	PASS
		1	3	24.08	PASS
		1	5	23.9	PASS
		3	0	23.94	PASS
		3	2	23.99	PASS
		3	3	23.98	PASS
		6	0	22.99	PASS
16QAM	LCH	1	0	23.05	PASS
		1	3	23.21	PASS
		1	5	23.08	PASS
		3	0	23.05	PASS
		3	2	23.02	PASS
		3	3	23.01	PASS
		6	0	21.97	PASS
	MCH	1	0	23.43	PASS
		1	3	23.41	PASS
		1	5	23.47	PASS
		3	0	23.14	PASS
		3	2	23.19	PASS

		3	3	23.18	PASS
		6	0	22.15	PASS
	HCH	1	0	22.98	PASS
		1	3	23.17	PASS
		1	5	23.01	PASS
		3	0	22.94	PASS
		3	2	22.94	PASS
		3	3	22.93	PASS
		6	0	22.11	PASS

Channel Bandwidth: 3 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	LCH	1	0	23.87	PASS
		1	7	24.12	PASS
		1	14	23.9	PASS
		8	0	22.94	PASS
		8	4	22.99	PASS
		8	7	22.99	PASS
		15	0	22.93	PASS
	MCH	1	0	24.09	PASS
		1	7	24.35	PASS
		1	14	24.16	PASS
		8	0	23.16	PASS
		8	4	23.19	PASS
		8	7	23.11	PASS
		15	0	23.1	PASS
	HCH	1	0	24.06	PASS
		1	7	24.24	PASS
		1	14	23.94	PASS
		8	0	23.01	PASS
		8	4	23.02	PASS
		8	7	22.96	PASS
		15	0	22.95	PASS
16QAM	LCH	1	0	23.12	PASS
		1	7	23.32	PASS
		1	14	23.12	PASS
		8	0	22.04	PASS
		8	4	22.11	PASS
		8	7	22.09	PASS
		15	0	21.98	PASS

	MCH	1	0	23.47	PASS
		1	7	23.5	PASS
		1	14	23.42	PASS
		8	0	22.2	PASS
		8	4	22.22	PASS
		8	7	22.18	PASS
		15	0	22.19	PASS
	HCH	1	0	23.09	PASS
		1	7	23.25	PASS
		1	14	23.01	PASS
		8	0	21.94	PASS
		8	4	21.99	PASS
		8	7	21.91	PASS
		15	0	21.95	PASS

Channel Bandwidth: 5 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	LCH	1	0	23.94	PASS
		1	12	24.26	PASS
		1	24	24.00	PASS
		12	0	22.88	PASS
		12	6	22.98	PASS
		12	13	23.01	PASS
		25	0	22.98	PASS
	MCH	1	0	24.11	PASS
		1	12	24.36	PASS
		1	24	24.14	PASS
		12	0	23.11	PASS
		12	6	23.16	PASS
		12	13	23.02	PASS
		25	0	23.11	PASS
	HCH	1	0	24.09	PASS
		1	12	24.39	PASS
		1	24	23.97	PASS
		12	0	22.9	PASS
		12	6	22.97	PASS
		12	13	22.97	PASS
		25	0	22.92	PASS
16QAM	LCH	1	0	23.14	PASS
		1	12	23.39	PASS

		1	24	23.14	PASS
		12	0	22.04	PASS
		12	6	22.13	PASS
		12	13	22.12	PASS
		25	0	22.05	PASS
	MCH	1	0	23.26	PASS
		1	12	23.46	PASS
		1	24	23.31	PASS
		12	0	22.33	PASS
		12	6	22.37	PASS
		12	13	22.31	PASS
		25	0	22.25	PASS
	HCH	1	0	23.09	PASS
		1	12	23.29	PASS
		1	24	23	PASS
		12	0	21.91	PASS
		12	6	22.05	PASS
		12	13	21.98	PASS
		25	0	21.99	PASS

Channel Bandwidth: 10 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	LCH	1	0	23.94	PASS
		1	24	24.24	PASS
		1	49	24.13	PASS
		25	0	23	PASS
		25	12	23.1	PASS
		25	25	23.26	PASS
		50	0	23.11	PASS
	MCH	1	0	24.15	PASS
		1	24	24.41	PASS
		1	49	24.07	PASS
		25	0	23.27	PASS
		25	12	23.17	PASS
		25	25	23.06	PASS
		50	0	23.19	PASS
	HCH	1	0	24.2	PASS
		1	24	24.28	PASS
		1	49	23.99	PASS
		25	0	23.15	PASS

		25	12	23.1	PASS
		25	25	23.13	PASS
		50	0	23.1	PASS
16QAM	LCH	1	0	23.16	PASS
		1	24	23.36	PASS
		1	49	23.31	PASS
		25	0	22.07	PASS
		25	12	22.14	PASS
		25	25	22.28	PASS
		50	0	22.13	PASS
	MCH	1	0	23.41	PASS
		1	24	23.48	PASS
		1	49	23.38	PASS
		25	0	22.37	PASS
		25	12	22.26	PASS
		25	25	22.21	PASS
		50	0	22.26	PASS
	HCH	1	0	23.39	PASS
		1	24	23.37	PASS
		1	49	23.07	PASS
		25	0	22.25	PASS
		25	12	22.1	PASS
		25	25	22.16	PASS
		50	0	22.18	PASS

Appendix B: Peak-to-Average Ratio

Test Result

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	LCH	1	0	4.36	<13	PASS
		1	3	4.10	<13	PASS
		1	5	4.23	<13	PASS
		3	0	4.18	<13	PASS
		3	2	4.14	<13	PASS
		3	3	4.24	<13	PASS
		6	0	4.86	<13	PASS
	MCH	1	0	4.41	<13	PASS
		1	3	4.39	<13	PASS
		1	5	4.26	<13	PASS
		3	0	4.38	<13	PASS
		3	2	4.44	<13	PASS
		3	3	4.4	<13	PASS
		6	0	4.97	<13	PASS
	HCH	1	0	3.24	<13	PASS
		1	3	3.12	<13	PASS
		1	5	3.29	<13	PASS
		3	0	3.24	<13	PASS
		3	2	3.27	<13	PASS
		3	3	3.3	<13	PASS
		6	0	3.95	<13	PASS
16QAM	LCH	1	0	5.36	<13	PASS
		1	3	5.1	<13	PASS
		1	5	5.28	<13	PASS
		3	0	5.26	<13	PASS
		3	2	5.18	<13	PASS
		3	3	5.18	<13	PASS
		6	0	5.83	<13	PASS
	MCH	1	0	5.38	<13	PASS
		1	3	5.3	<13	PASS
		1	5	5.39	<13	PASS
		3	0	5.43	<13	PASS

		3	2	5.41	<13	PASS
		3	3	5.38	<13	PASS
		6	0	5.85	<13	PASS
	HCH	1	0	4.3	<13	PASS
		1	3	4.2	<13	PASS
		1	5	4.37	<13	PASS
		3	0	4.15	<13	PASS
		3	2	4.12	<13	PASS
		3	3	4.11	<13	PASS
		6	0	4.83	<13	PASS

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	4.2	<13	PASS
		1	7	4.14	<13	PASS
		1	14	4	<13	PASS
		8	0	4.93	<13	PASS
		8	4	4.8	<13	PASS
		8	7	4.79	<13	PASS
		15	0	4.85	<13	PASS
	MCH	1	0	4.2	<13	PASS
		1	7	4.17	<13	PASS
		1	14	4.28	<13	PASS
		8	0	5.03	<13	PASS
		8	4	5.06	<13	PASS
		8	7	5.17	<13	PASS
		15	0	5.13	<13	PASS
	HCH	1	0	3.14	<13	PASS
		1	7	2.99	<13	PASS
		1	14	3.26	<13	PASS
		8	0	4.04	<13	PASS
		8	4	3.98	<13	PASS
		8	7	4.04	<13	PASS
		15	0	4.02	<13	PASS
16QAM	LCH	1	0	5.19	<13	PASS
		1	7	4.95	<13	PASS
		1	14	5.01	<13	PASS
		8	0	5.65	<13	PASS
		8	4	5.5	<13	PASS

		8	7	5.59	<13	PASS
		15	0	5.78	<13	PASS
	MCH	1	0	5.12	<13	PASS
		1	7	5.25	<13	PASS
		1	14	5.3	<13	PASS
		8	0	5.78	<13	PASS
		8	4	5.76	<13	PASS
		8	7	5.86	<13	PASS
		15	0	5.89	<13	PASS
	HCH	1	0	4.25	<13	PASS
		1	7	4	<13	PASS
		1	14	4.32	<13	PASS
		8	0	4.99	<13	PASS
		8	4	4.94	<13	PASS
		8	7	5.01	<13	PASS
		15	0	4.92	<13	PASS

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	4.45	<13	PASS
		1	12	4.02	<13	PASS
		1	24	4.15	<13	PASS
		12	0	4.93	<13	PASS
		12	6	4.77	<13	PASS
		12	13	4.71	<13	PASS
		25	0	4.79	<13	PASS
	MCH	1	0	4.41	<13	PASS
		1	12	4.35	<13	PASS
		1	24	4.45	<13	PASS
		12	0	4.91	<13	PASS
		12	6	5	<13	PASS
		12	13	5.01	<13	PASS
		25	0	5.04	<13	PASS
	HCH	1	0	3.46	<13	PASS
		1	12	2.95	<13	PASS
		1	24	3.3	<13	PASS
		12	0	4.23	<13	PASS
		12	6	4.06	<13	PASS
		12	13	4.09	<13	PASS

		25	0	4.15	<13	PASS
16QAM	LCH	1	0	5.16	<13	PASS
		1	12	4.88	<13	PASS
		1	24	4.85	<13	PASS
		12	0	5.8	<13	PASS
		12	6	5.63	<13	PASS
		12	13	5.63	<13	PASS
		25	0	5.58	<13	PASS
	MCH	1	0	5.34	<13	PASS
		1	12	5.22	<13	PASS
		1	24	5.48	<13	PASS
		12	0	5.79	<13	PASS
		12	6	5.84	<13	PASS
		12	13	5.9	<13	PASS
		25	0	5.87	<13	PASS
	HCH	1	0	4.51	<13	PASS
		1	12	4.03	<13	PASS
		1	24	4.27	<13	PASS
		12	0	5.09	<13	PASS
		12	6	4.92	<13	PASS
		12	13	4.93	<13	PASS
		25	0	4.98	<13	PASS

Channel Bandwidth: 10 MHz

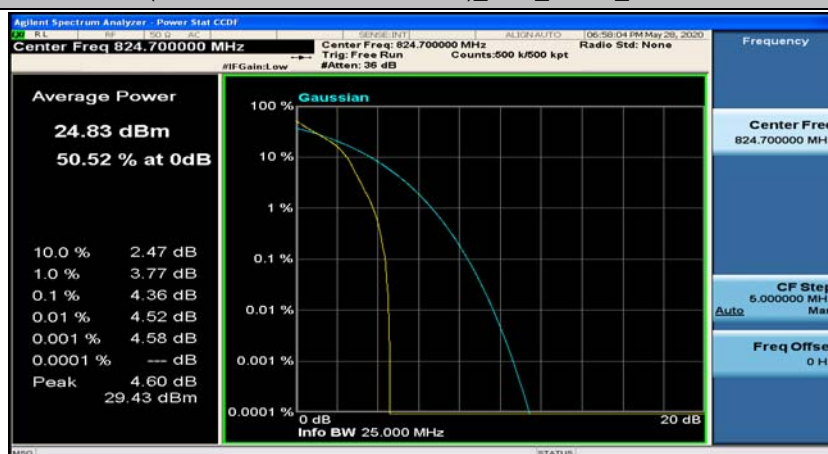
Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	4.28	<13	PASS
		1	24	3.83	<13	PASS
		1	49	4.21	<13	PASS
		25	0	4.75	<13	PASS
		25	12	4.63	<13	PASS
		25	25	4.67	<13	PASS
		50	0	4.82	<13	PASS
	MCH	1	0	4.08	<13	PASS
		1	24	4.11	<13	PASS
		1	49	4.01	<13	PASS
		25	0	4.91	<13	PASS
		25	12	5.04	<13	PASS
		25	25	5.05	<13	PASS
		50	0	4.93	<13	PASS

	HCH	1	0	4.35	<13	PASS
		1	24	3.24	<13	PASS
		1	49	3.17	<13	PASS
		25	0	4.64	<13	PASS
		25	12	4.32	<13	PASS
		25	25	4.04	<13	PASS
		50	0	4.48	<13	PASS
16QAM	LCH	1	0	5.12	<13	PASS
		1	24	4.86	<13	PASS
		1	49	5.22	<13	PASS
		25	0	5.62	<13	PASS
		25	12	5.52	<13	PASS
		25	25	5.57	<13	PASS
		50	0	5.6	<13	PASS
	MCH	1	0	4.93	<13	PASS
		1	24	5.06	<13	PASS
		1	49	5.01	<13	PASS
		25	0	5.8	<13	PASS
		25	12	5.87	<13	PASS
		25	25	5.89	<13	PASS
		50	0	5.75	<13	PASS
	HCH	1	0	5.32	<13	PASS
		1	24	4.28	<13	PASS
		1	49	4.24	<13	PASS
		25	0	5.6	<13	PASS
		25	12	5.3	<13	PASS
		25	25	4.97	<13	PASS
		50	0	5.32	<13	PASS

Test Graphs

Channel Bandwidth: 1.4 MHz

(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#0



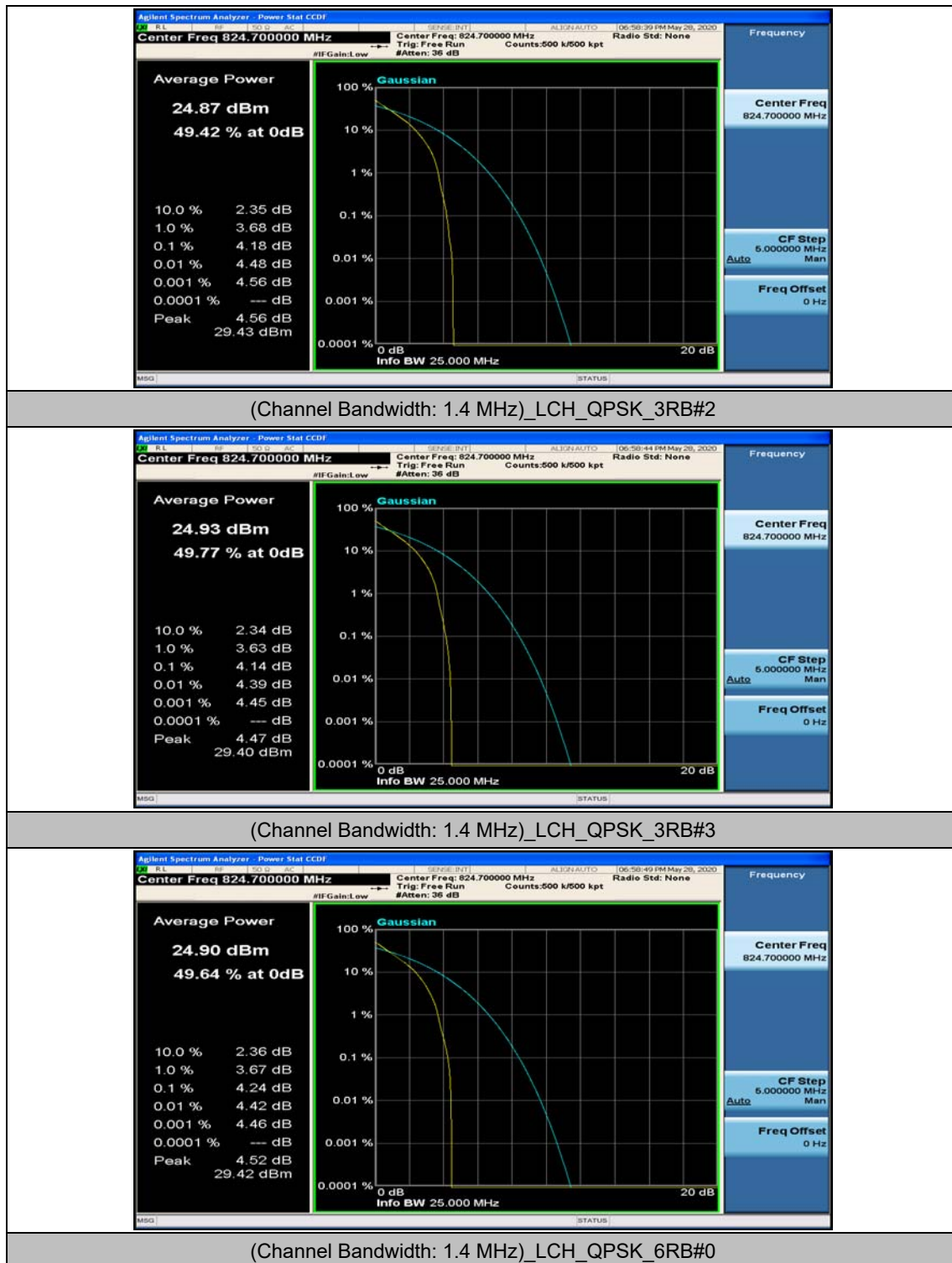
(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#3

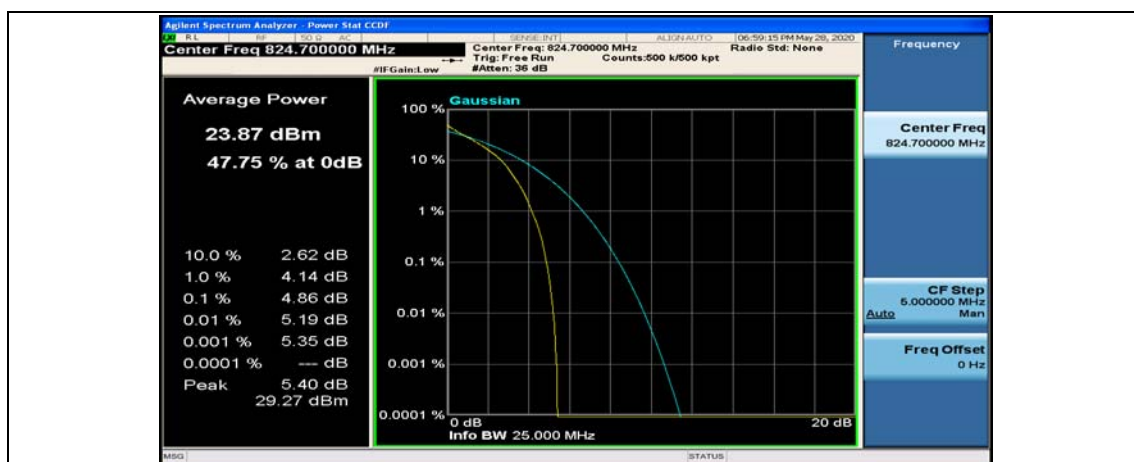


(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#5



(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_3RB#0





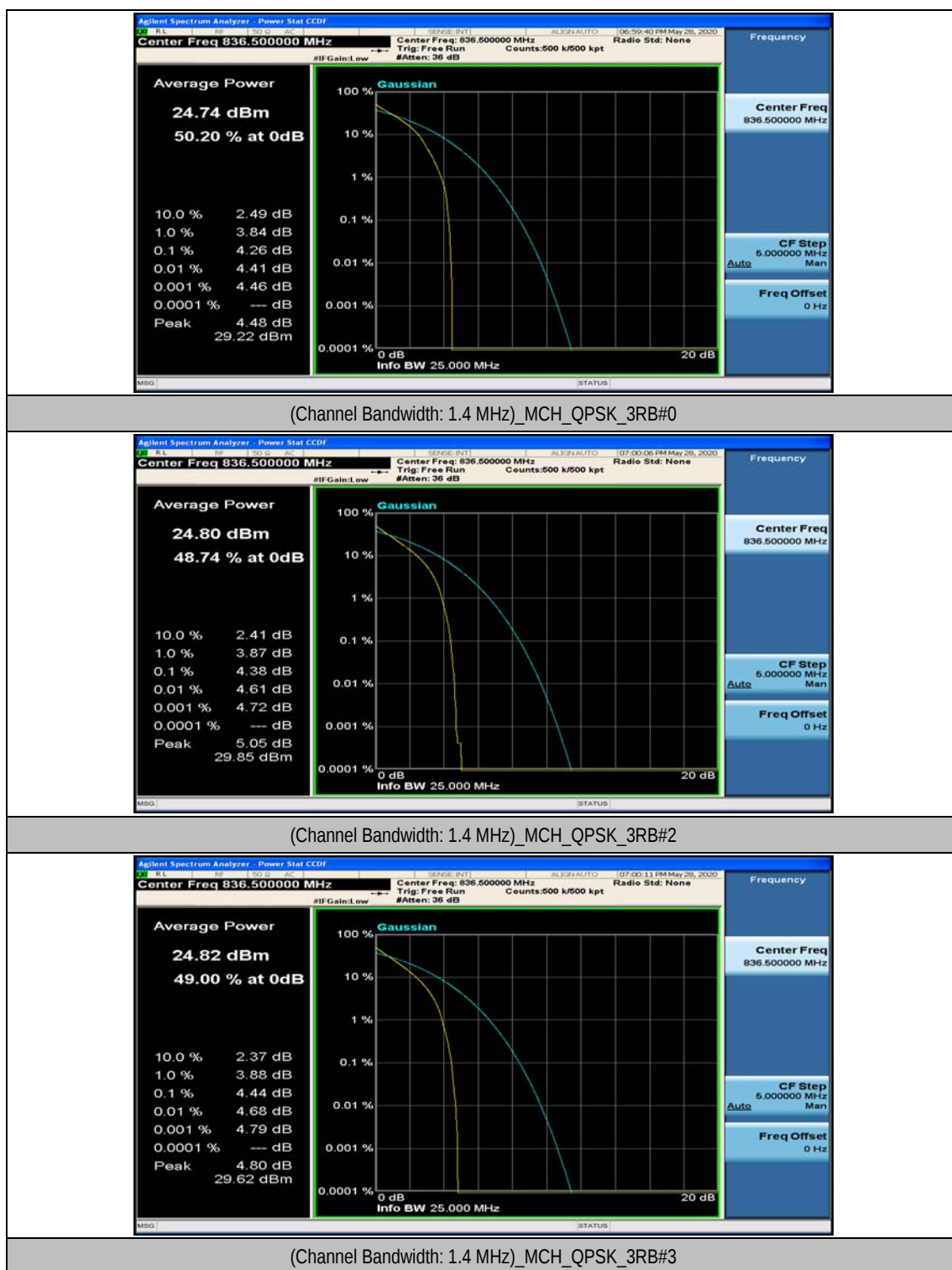
(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#0

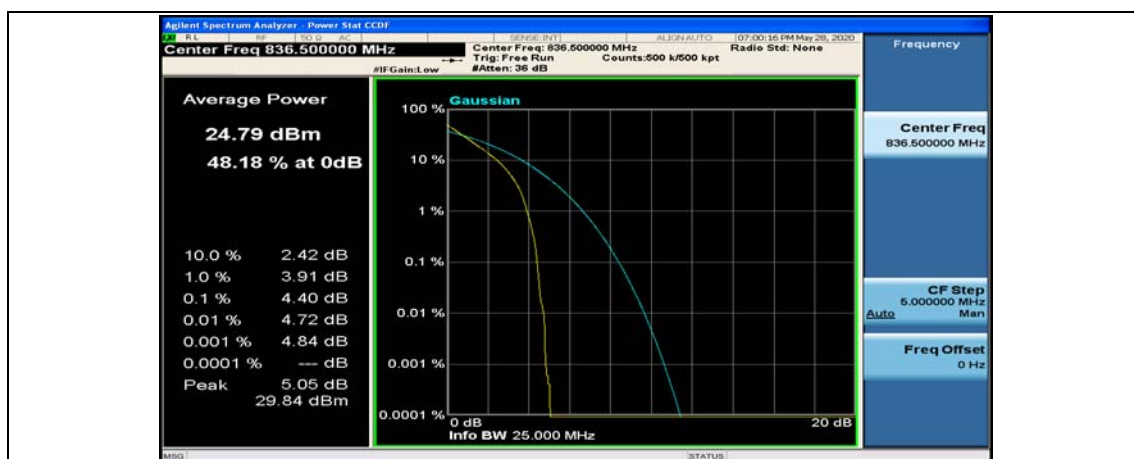


(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#3

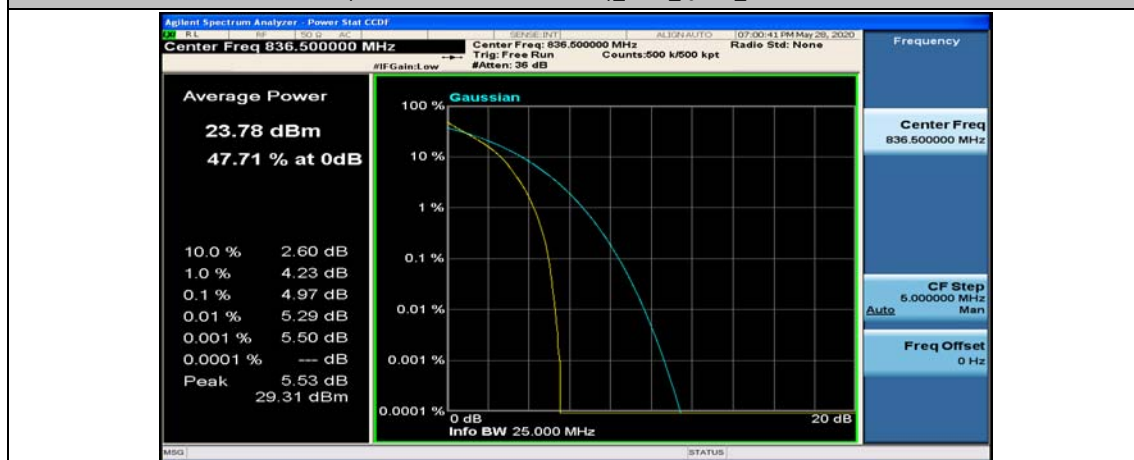


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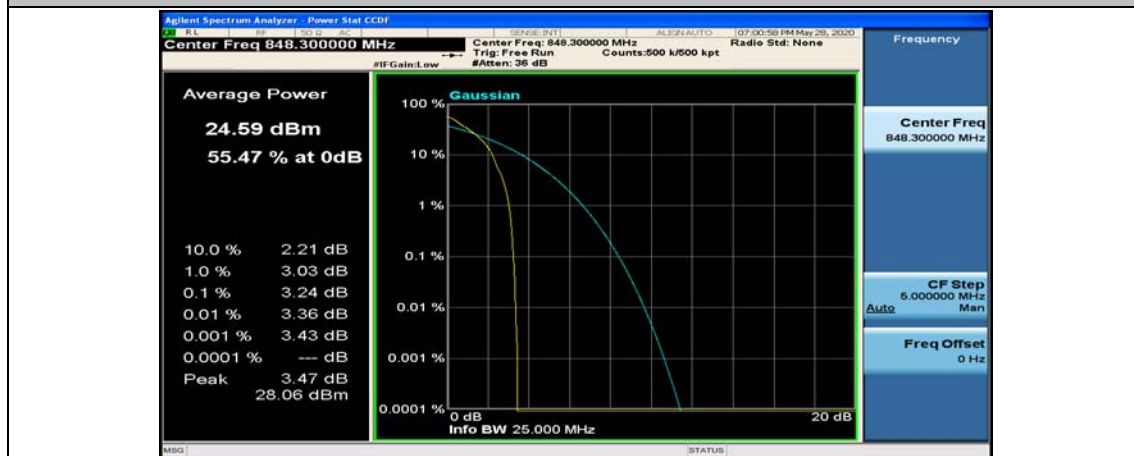




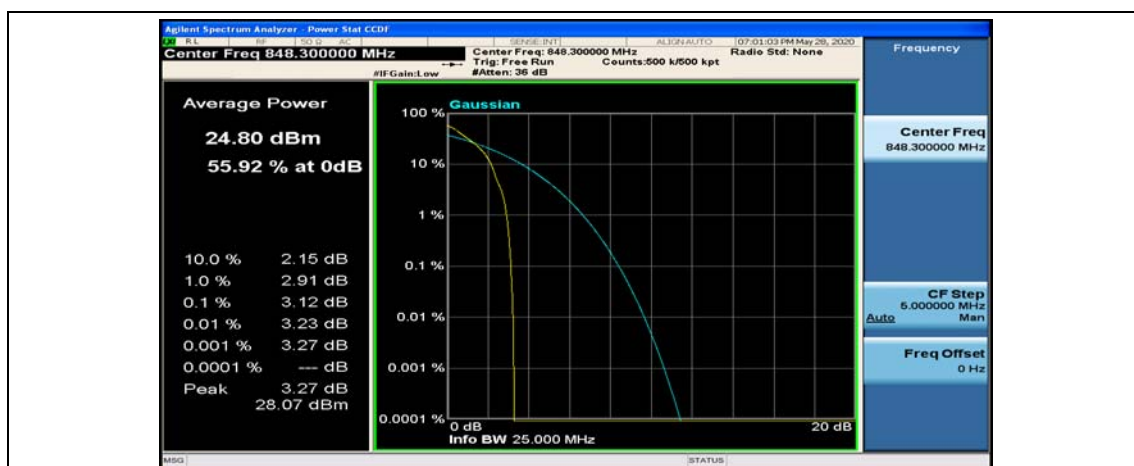
(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_6RB#0



(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#0



(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#3



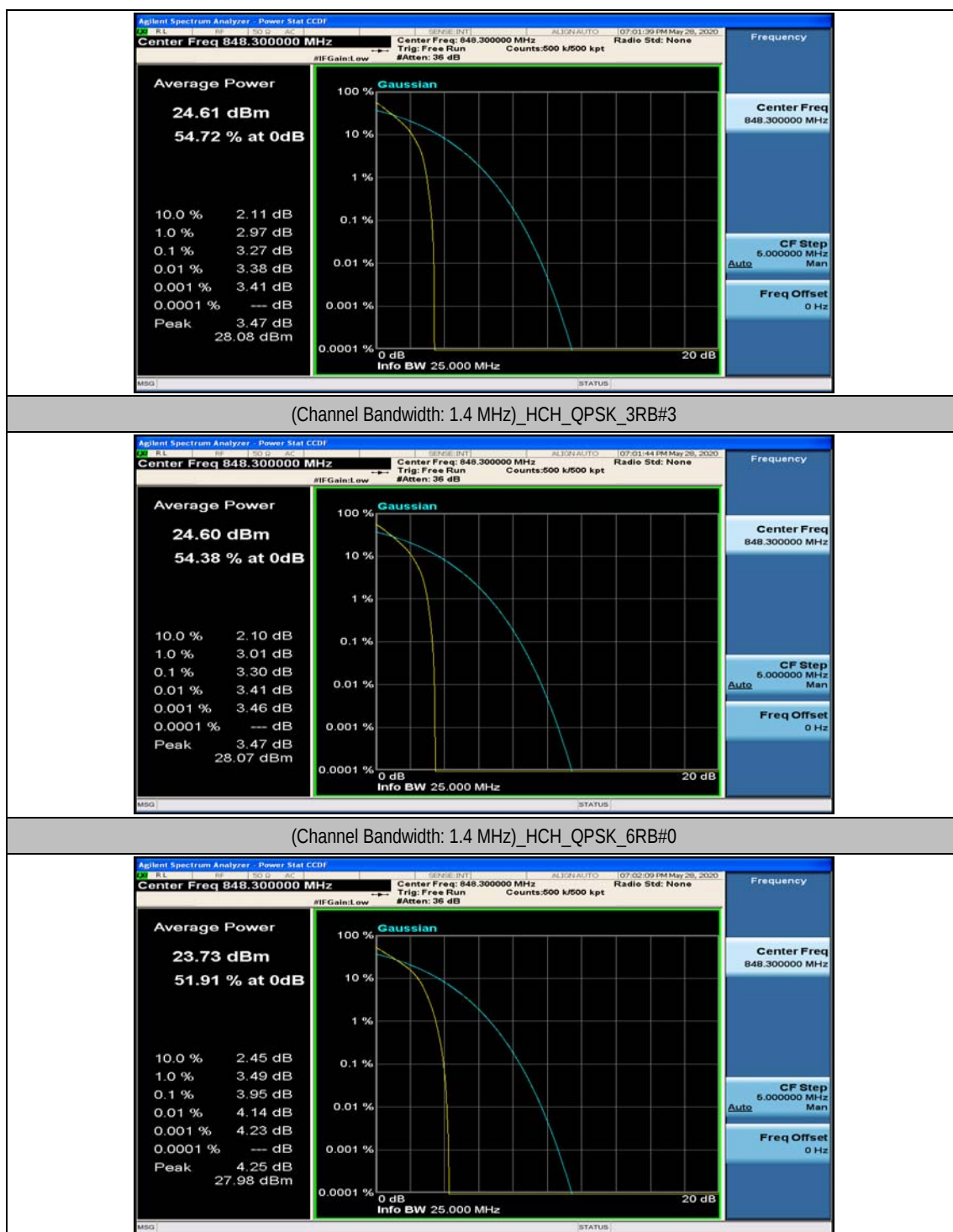
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(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_3RB#0



(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_3RB#2



(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#0



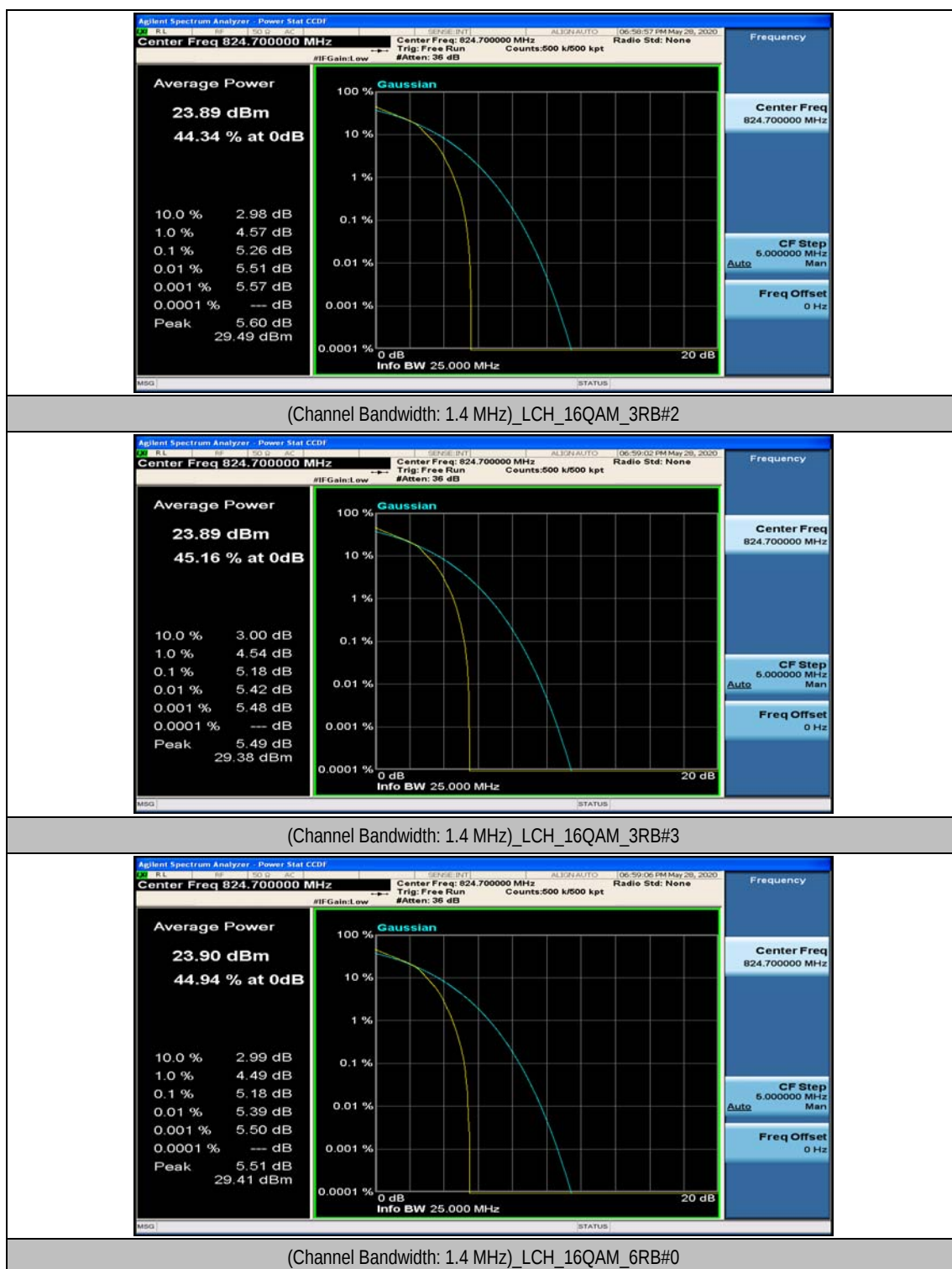
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(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#5



(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_3RB#0





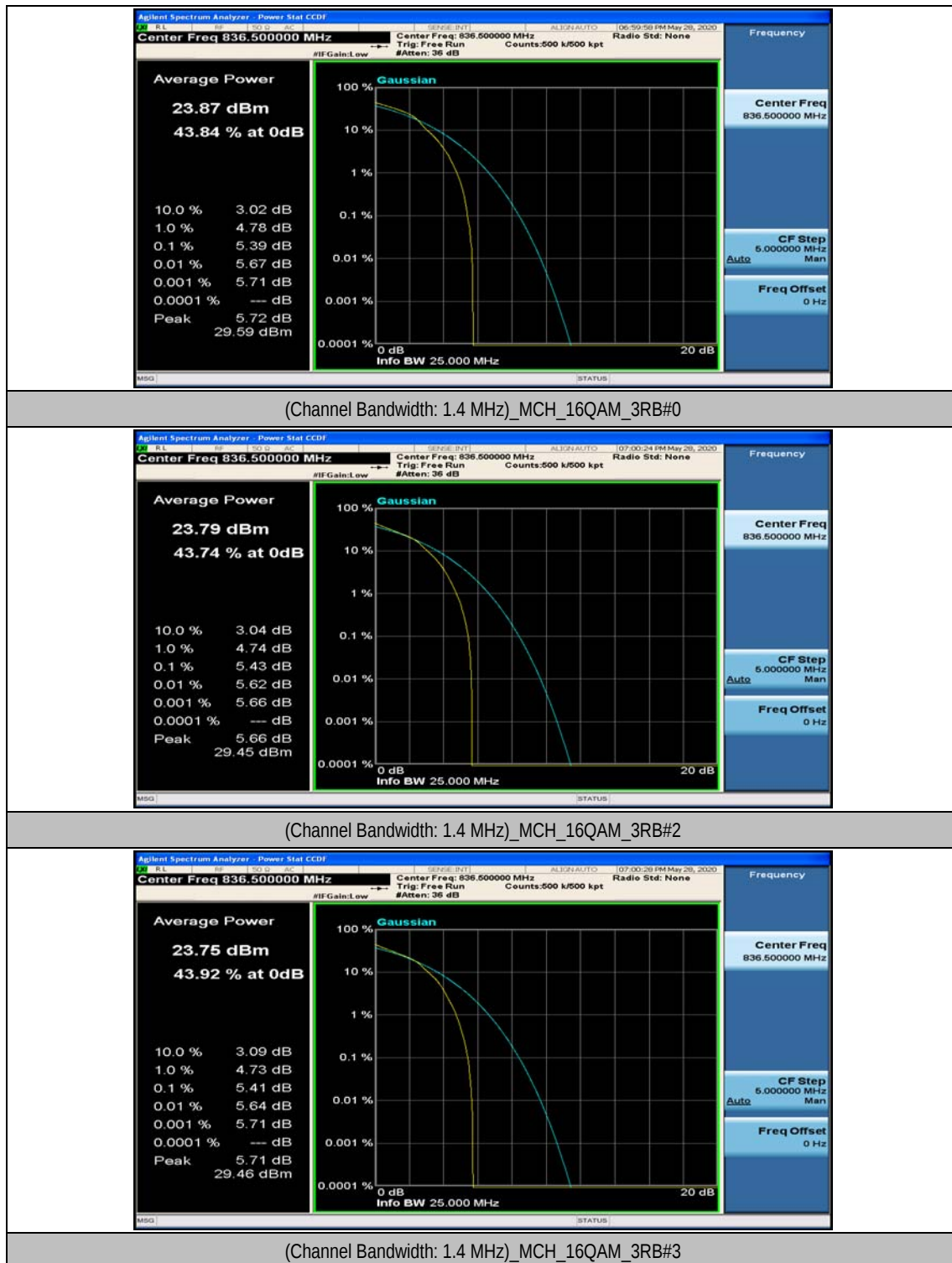
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(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#3

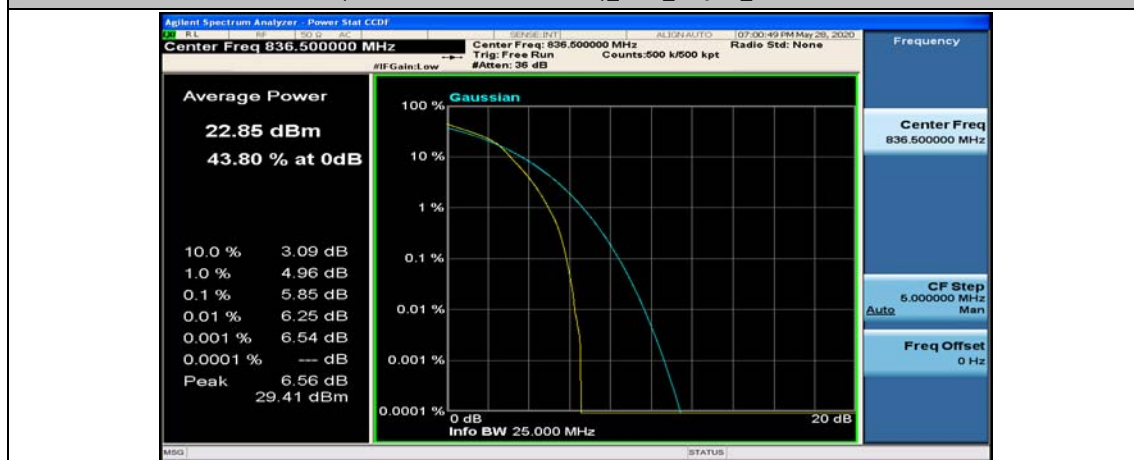


(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#5





(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_6RB#0



(Channel Bandwidth: 1.4 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth: 1.4 MHz)_HCH_16QAM_1RB#3



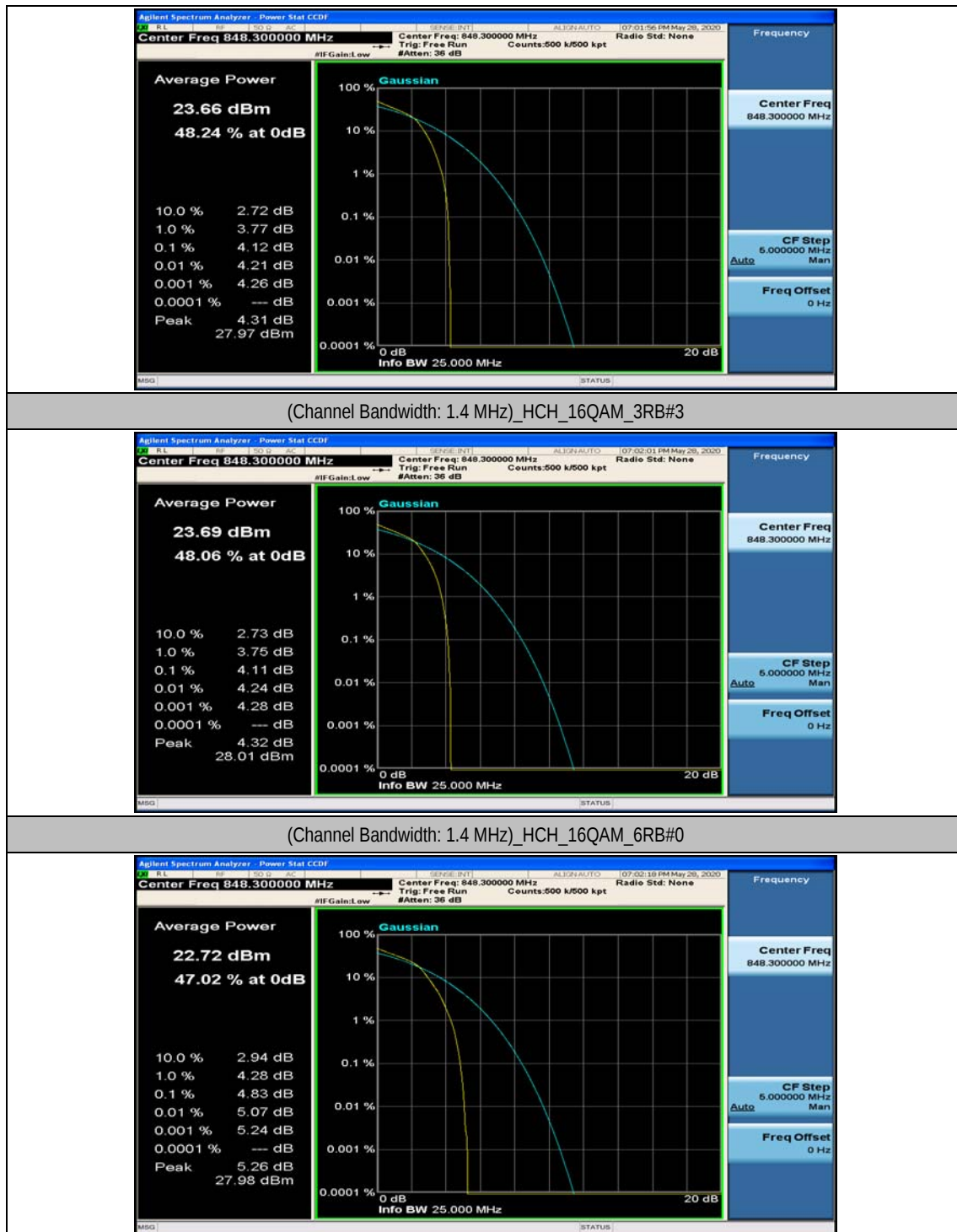
(Channel Bandwidth: 1.4 MHz)_HCH_16QAM_1RB#5



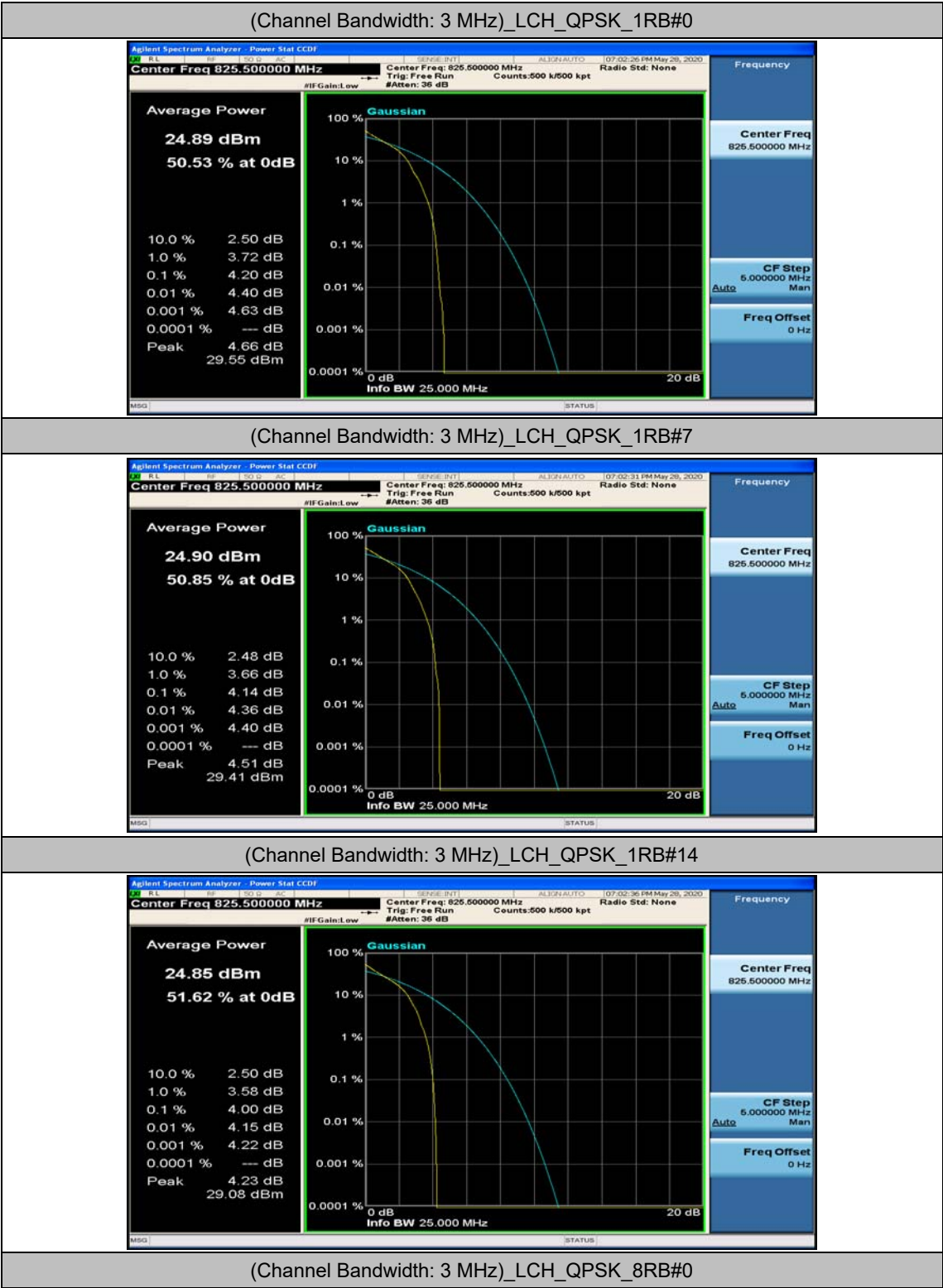
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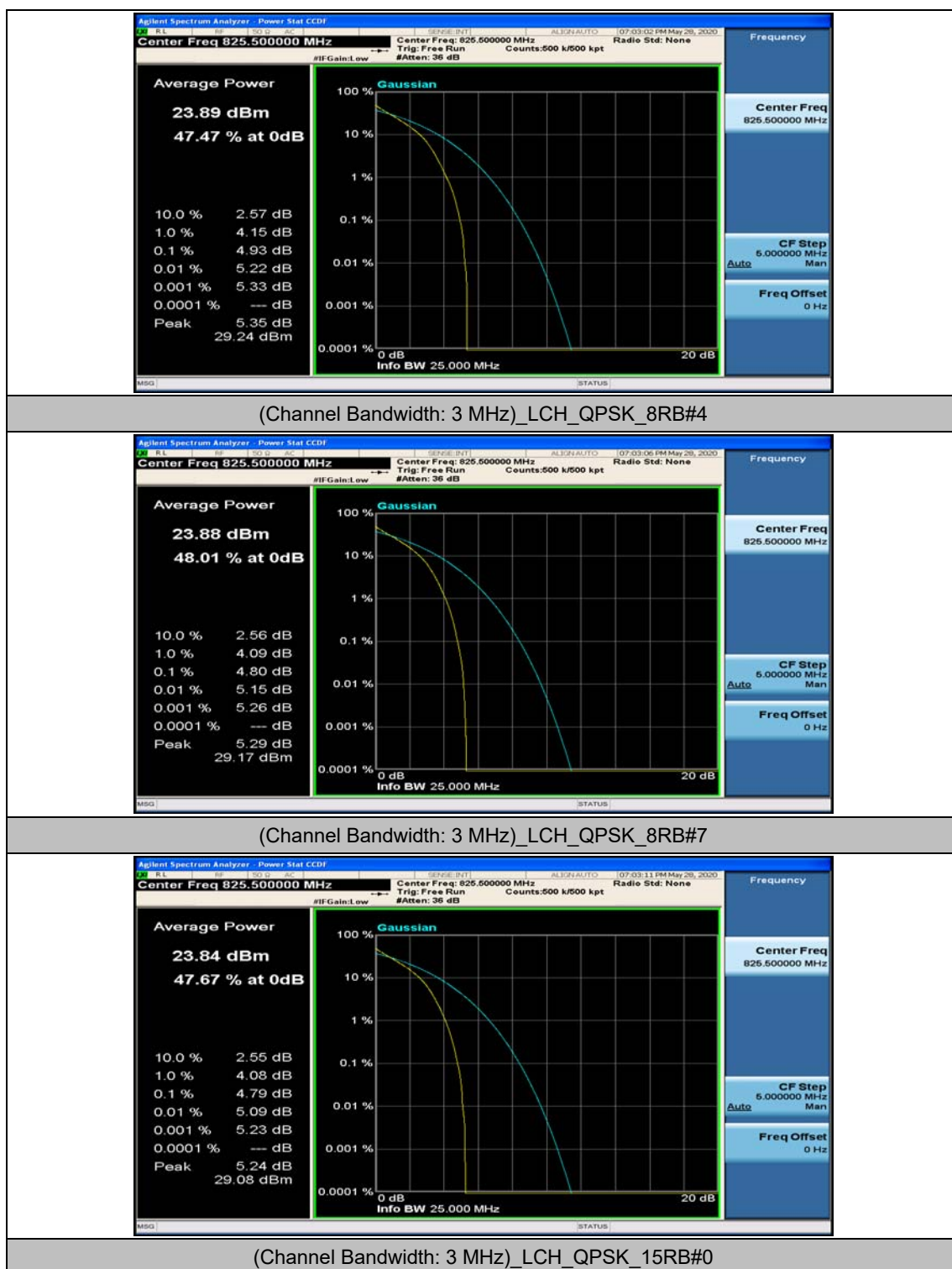


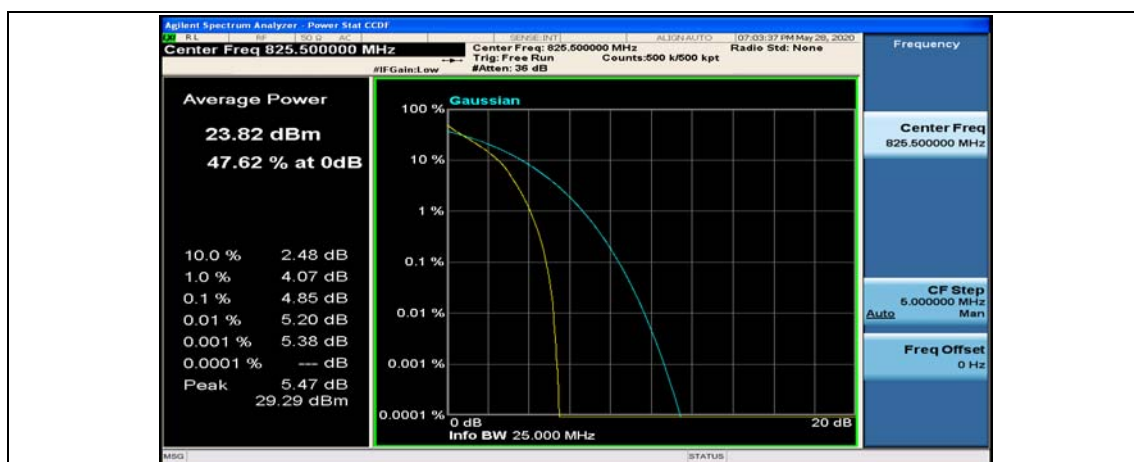
(Channel Bandwidth: 1.4 MHz)_HCH_16QAM_3RB#2



Channel Bandwidth: 3 MHz







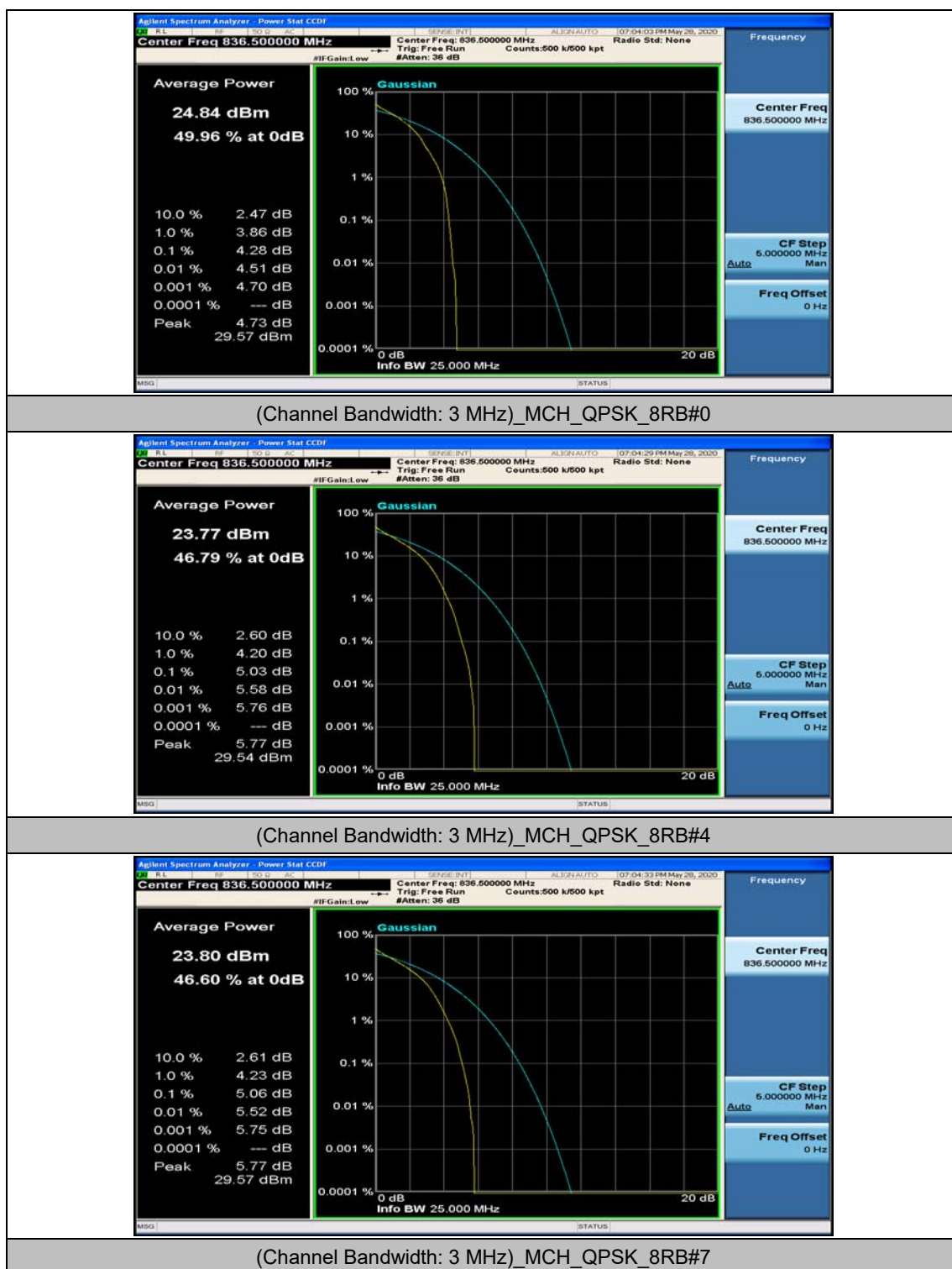
(Channel Bandwidth: 3 MHz)_MCH_QPSK_1RB#0

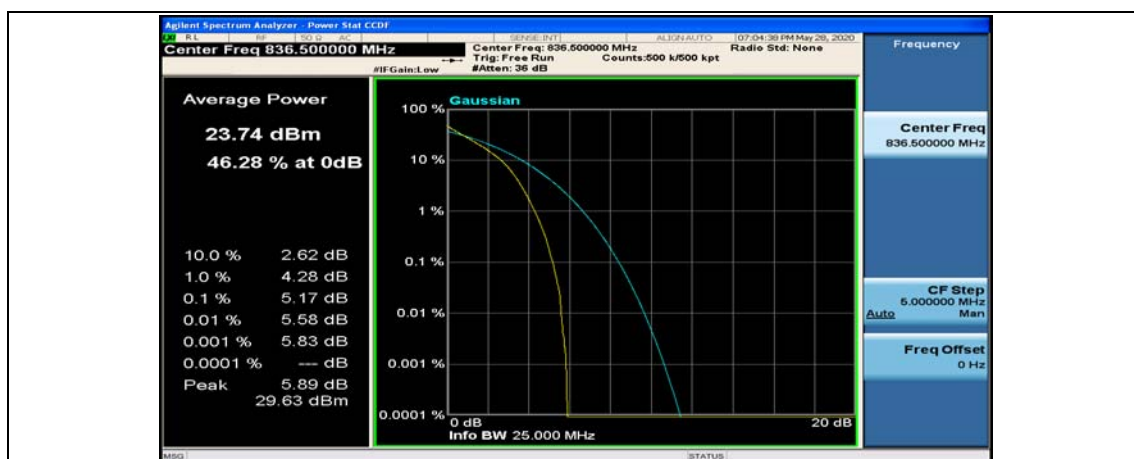


(Channel Bandwidth: 3 MHz)_MCH_QPSK_1RB#7

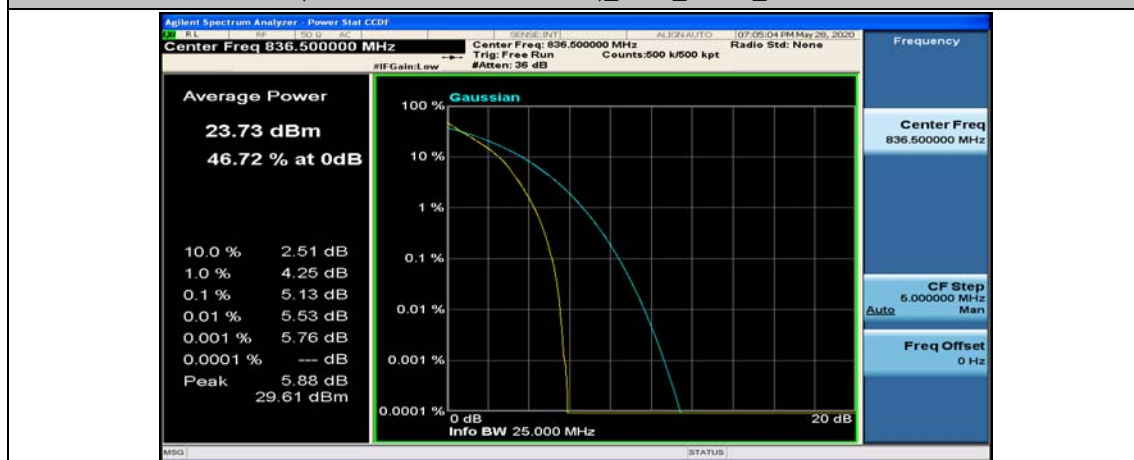


(Channel Bandwidth: 3 MHz)_MCH_QPSK_1RB#14

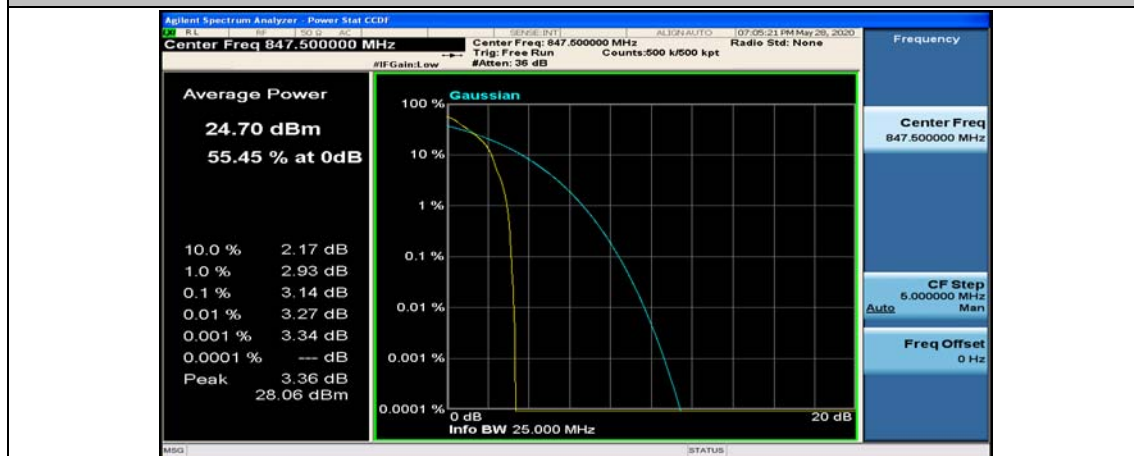




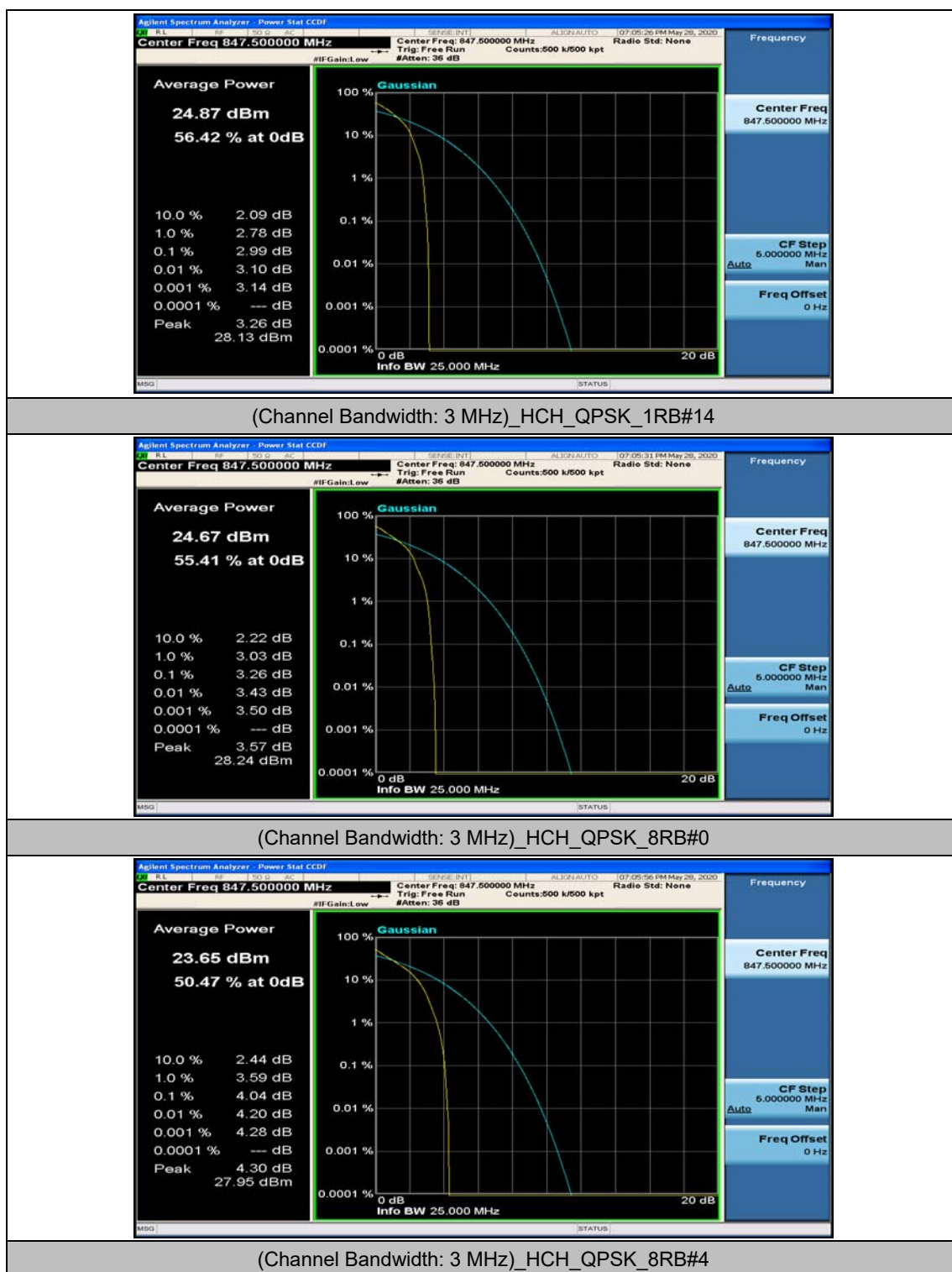
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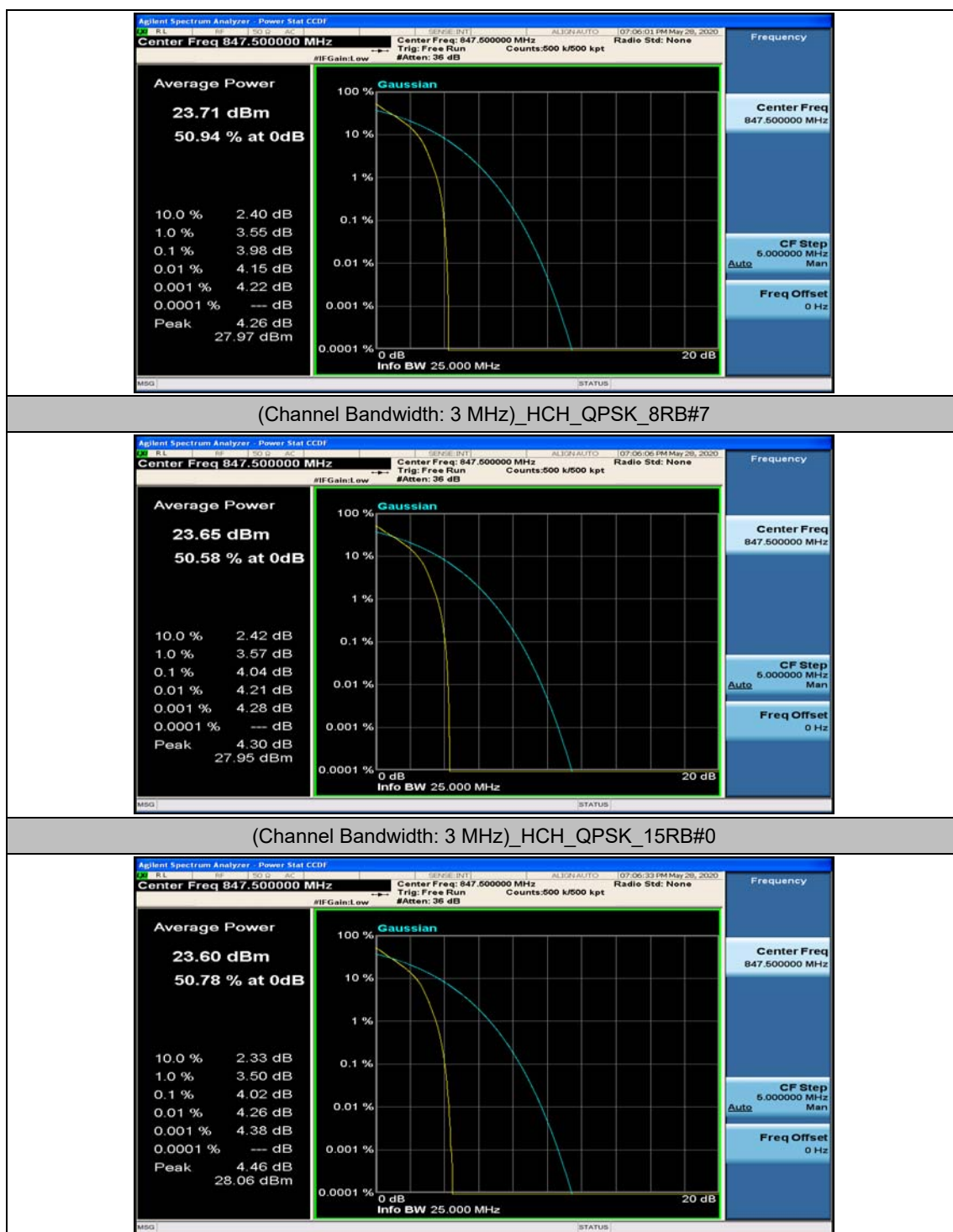


(Channel Bandwidth: 3 MHz)_HCH_QPSK_1RB#0



(Channel Bandwidth: 3 MHz)_HCH_QPSK_1RB#7





(Channel Bandwidth: 3 MHz)_LCH_16QAM_1RB#0



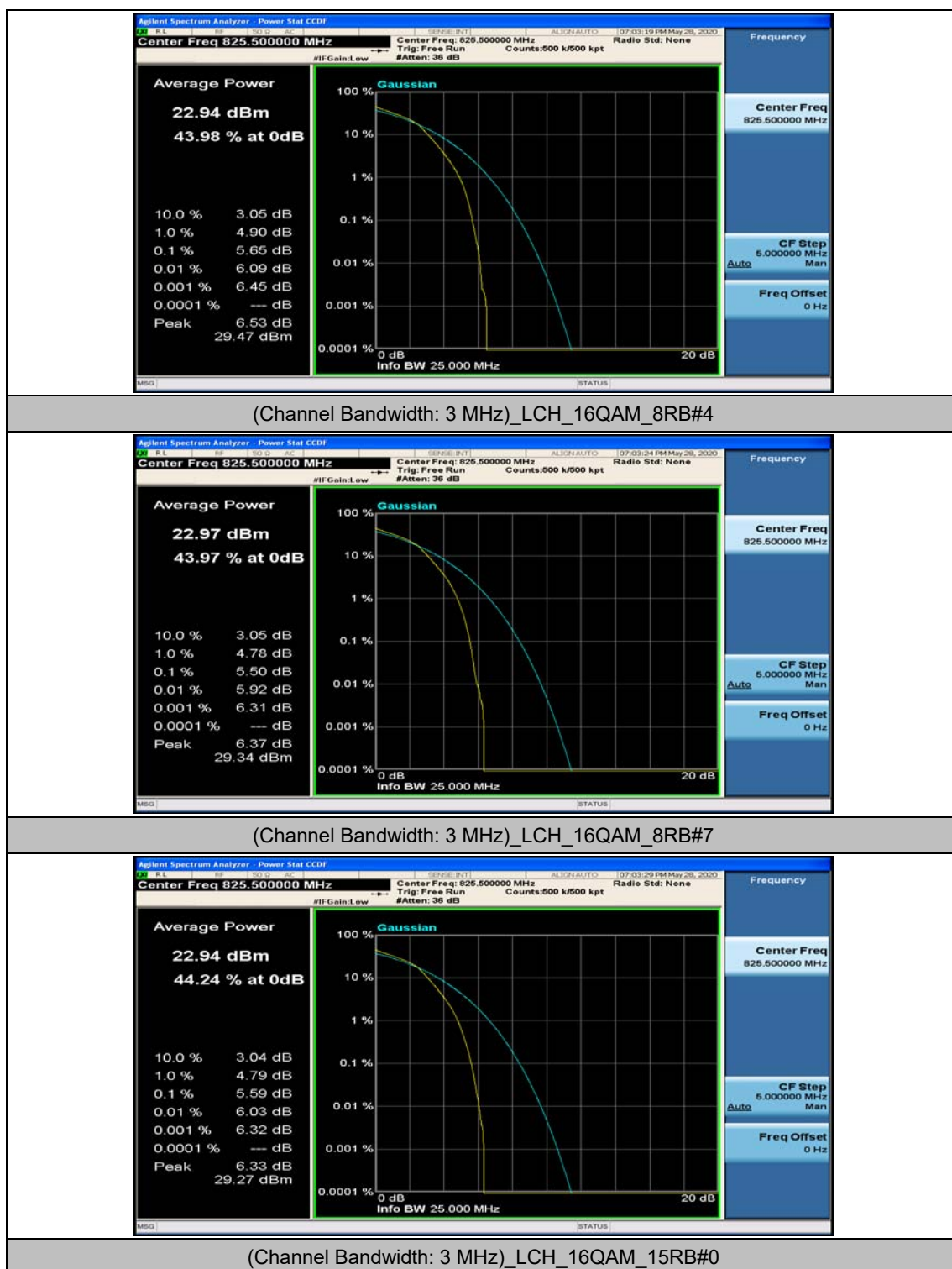
(Channel Bandwidth: 3 MHz)_LCH_16QAM_1RB#7



(Channel Bandwidth: 3 MHz)_LCH_16QAM_1RB#14



(Channel Bandwidth: 3 MHz)_LCH_16QAM_8RB#0





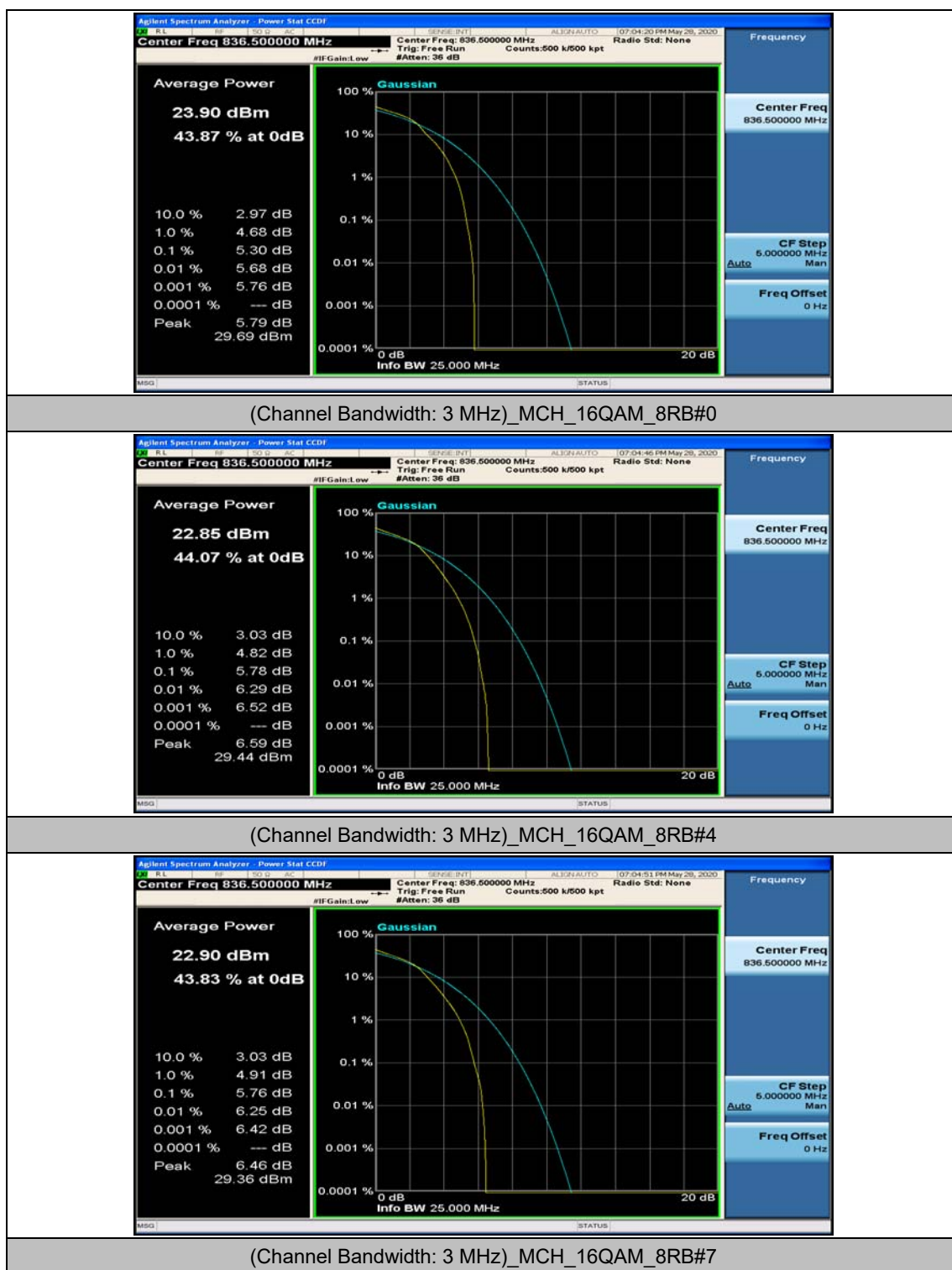
(Channel Bandwidth: 3 MHz)_MCH_16QAM_1RB#0

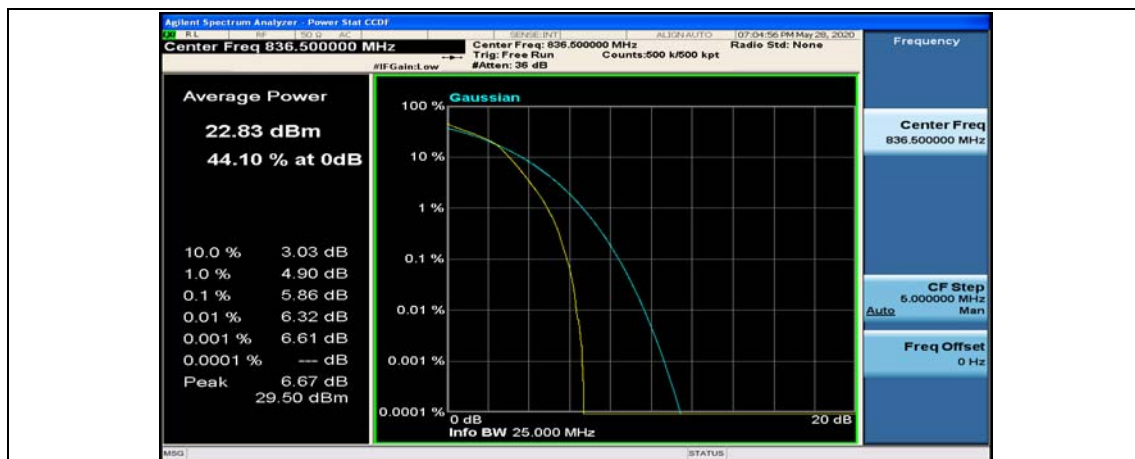


(Channel Bandwidth: 3 MHz)_MCH_16QAM_1RB#7

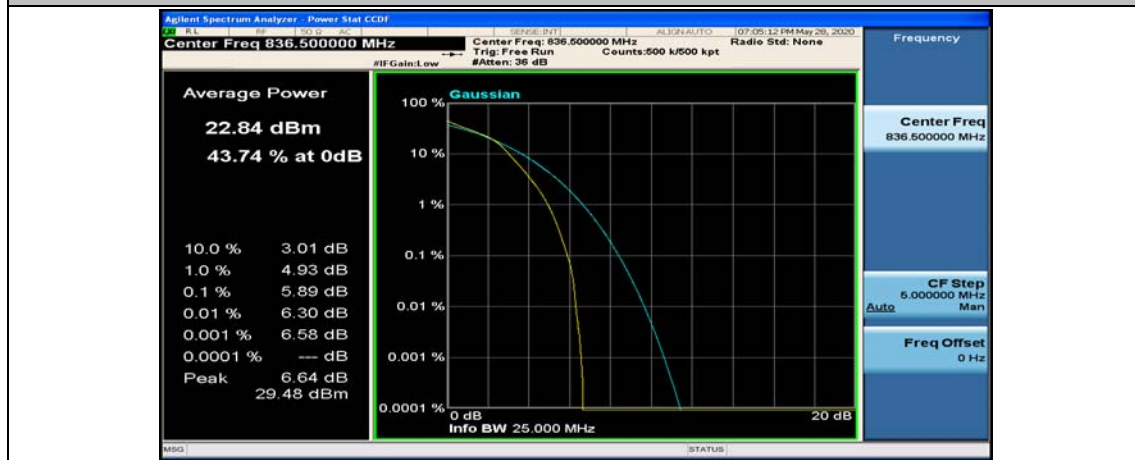


(Channel Bandwidth: 3 MHz)_MCH_16QAM_1RB#14

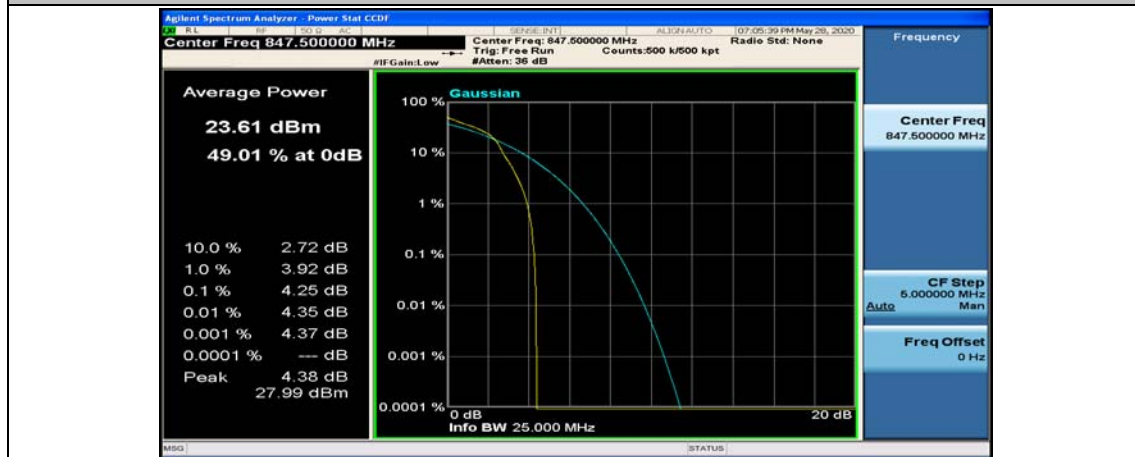




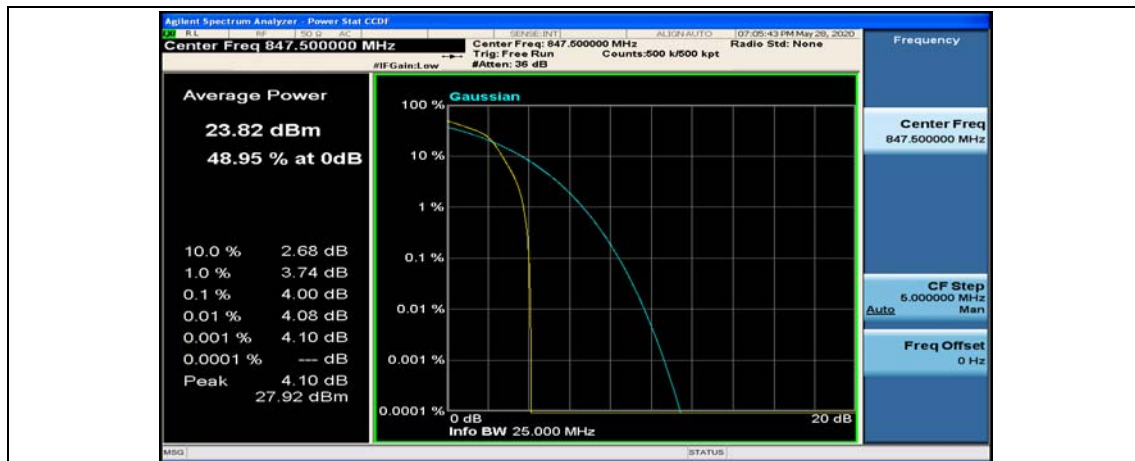
(Channel Bandwidth: 3 MHz)_MCH_16QAM_15RB#0



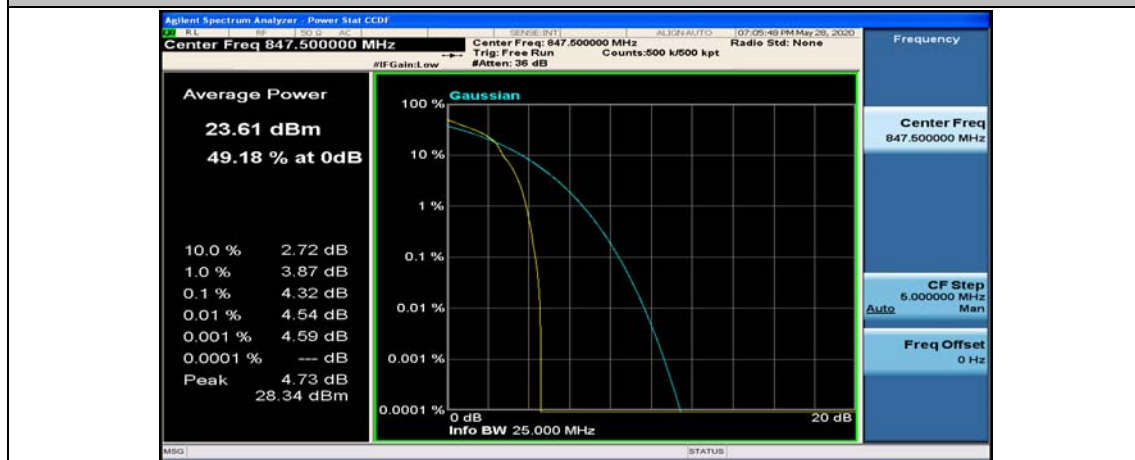
(Channel Bandwidth: 3 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth: 3 MHz)_HCH_16QAM_1RB#7



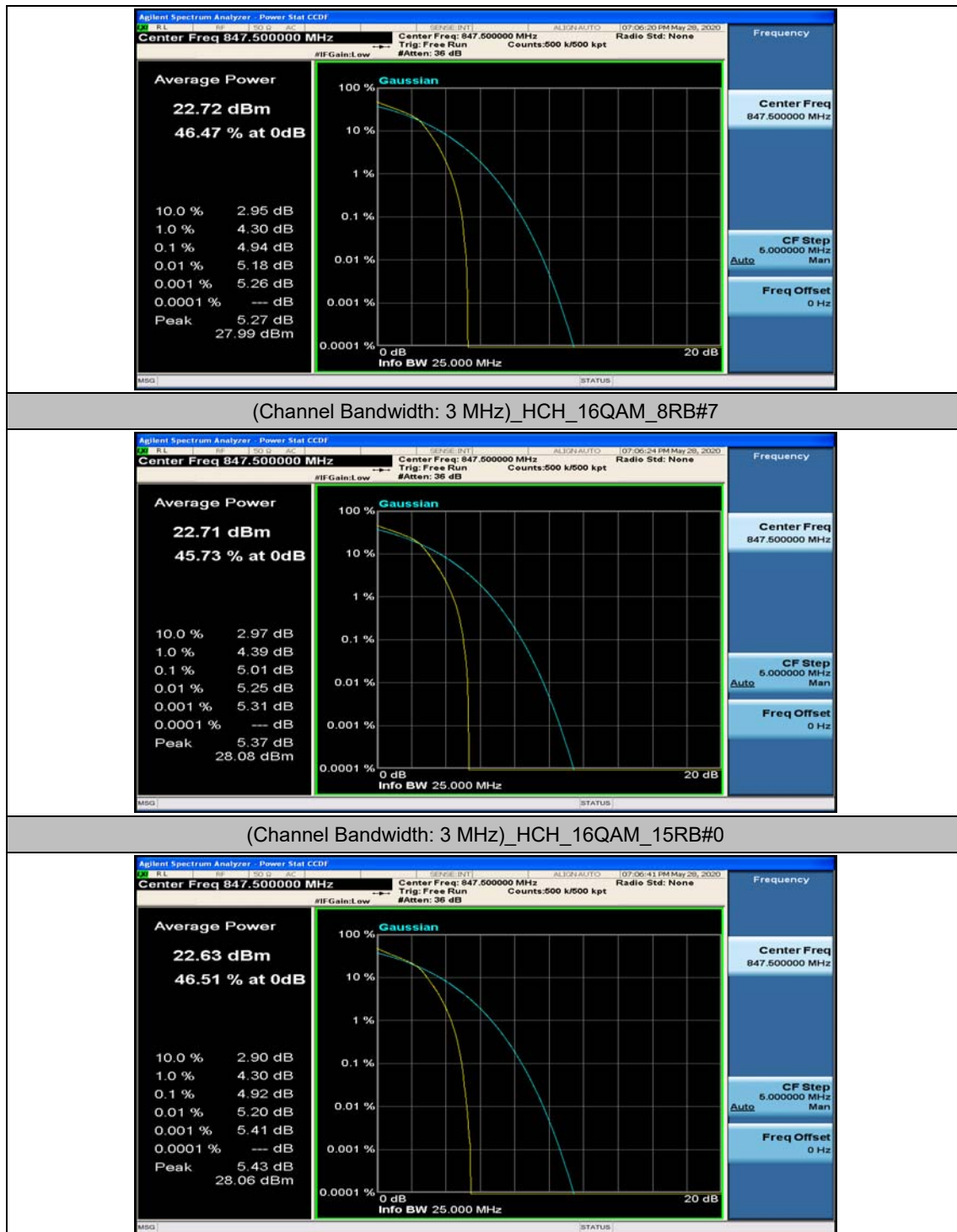
(Channel Bandwidth: 3 MHz)_HCH_16QAM_1RB#14



(Channel Bandwidth: 3 MHz)_HCH_16QAM_8RB#0



(Channel Bandwidth: 3 MHz)_HCH_16QAM_8RB#4

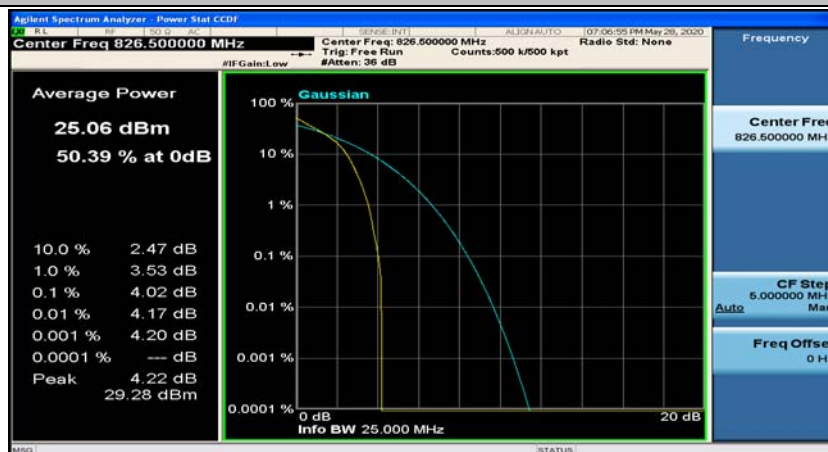


Channel Bandwidth: 5 MHz

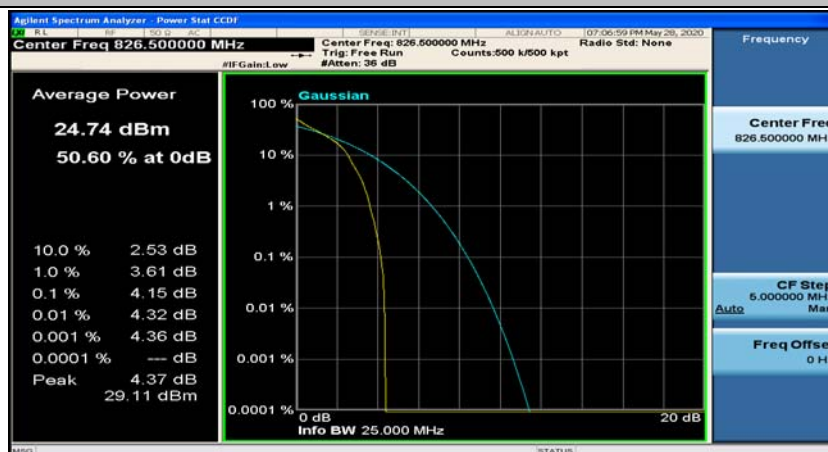
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0



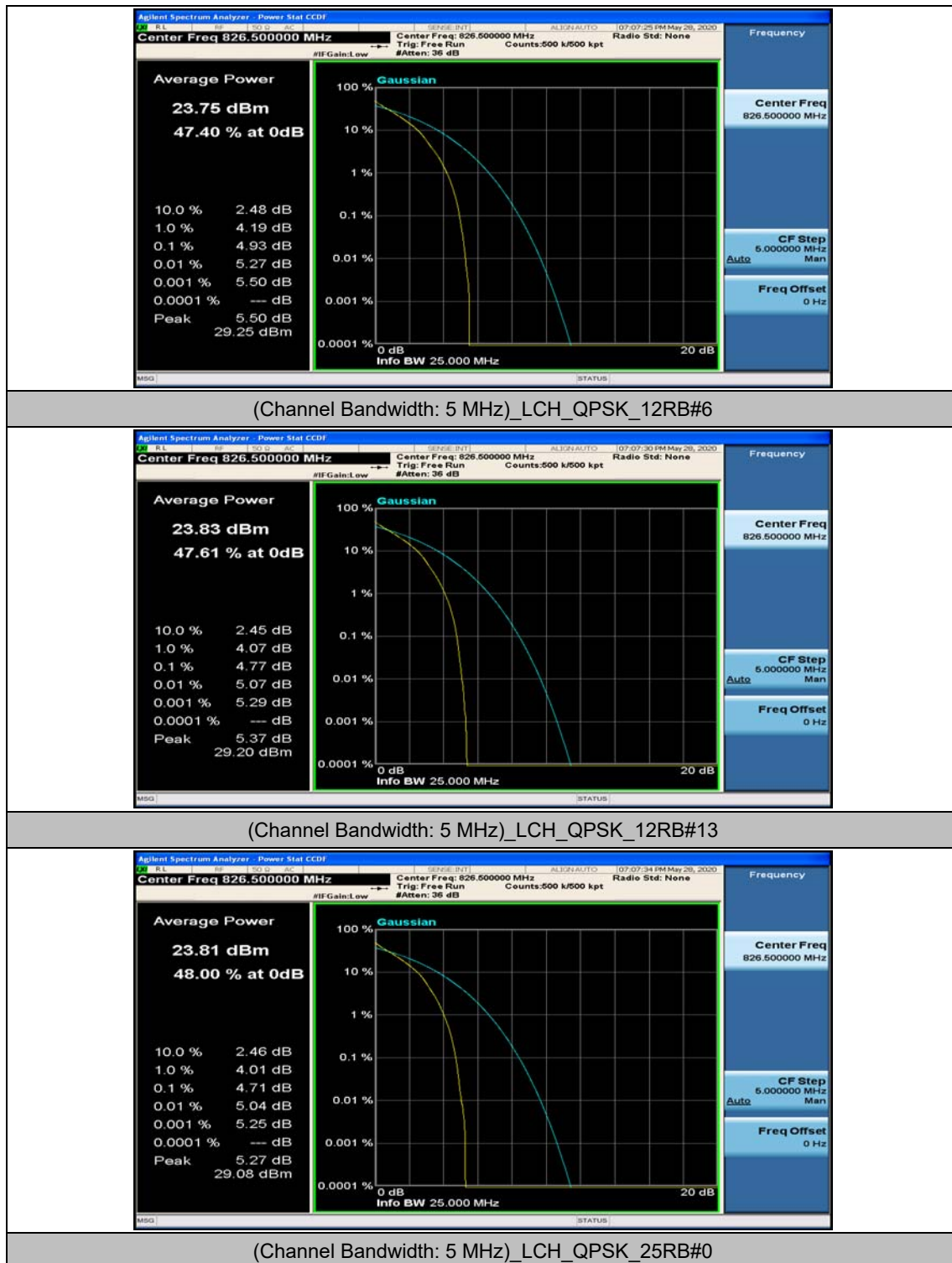
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12

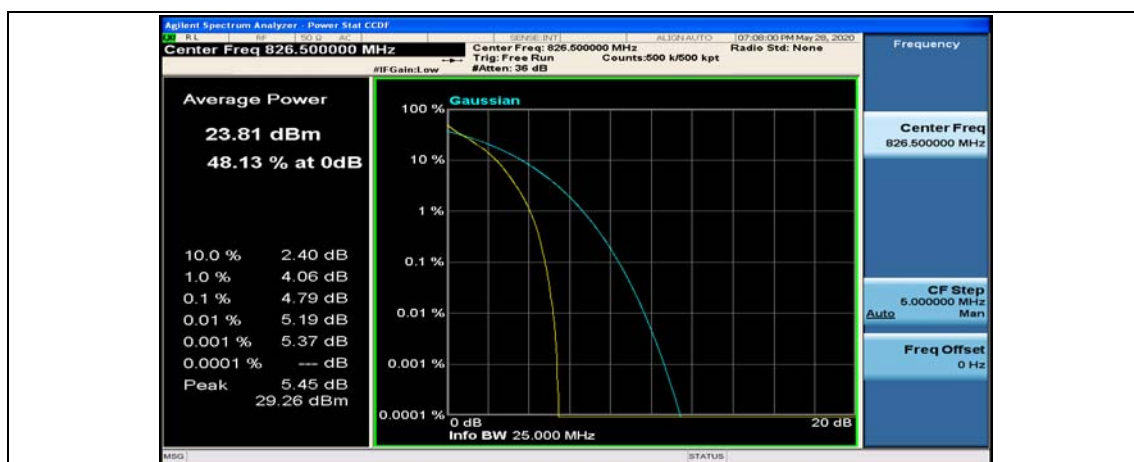


(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24



(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#0

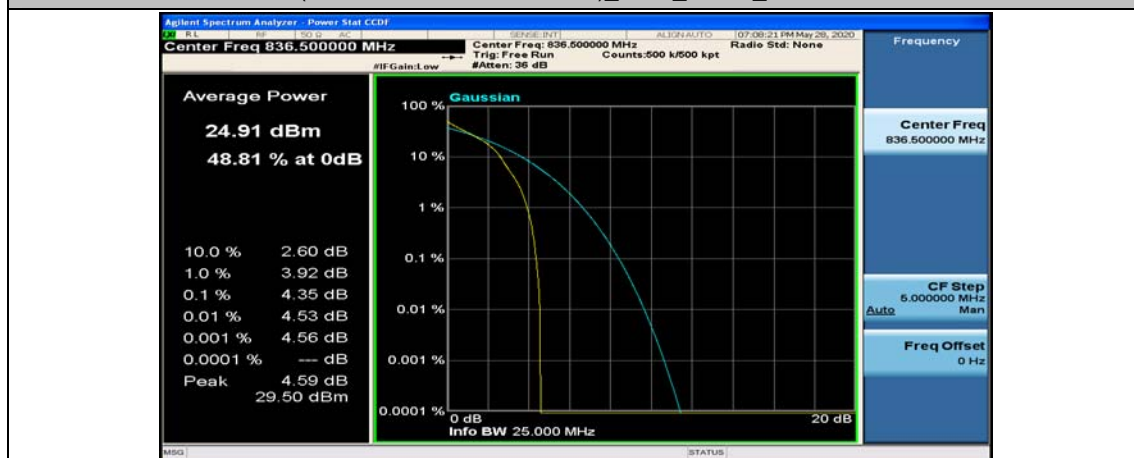




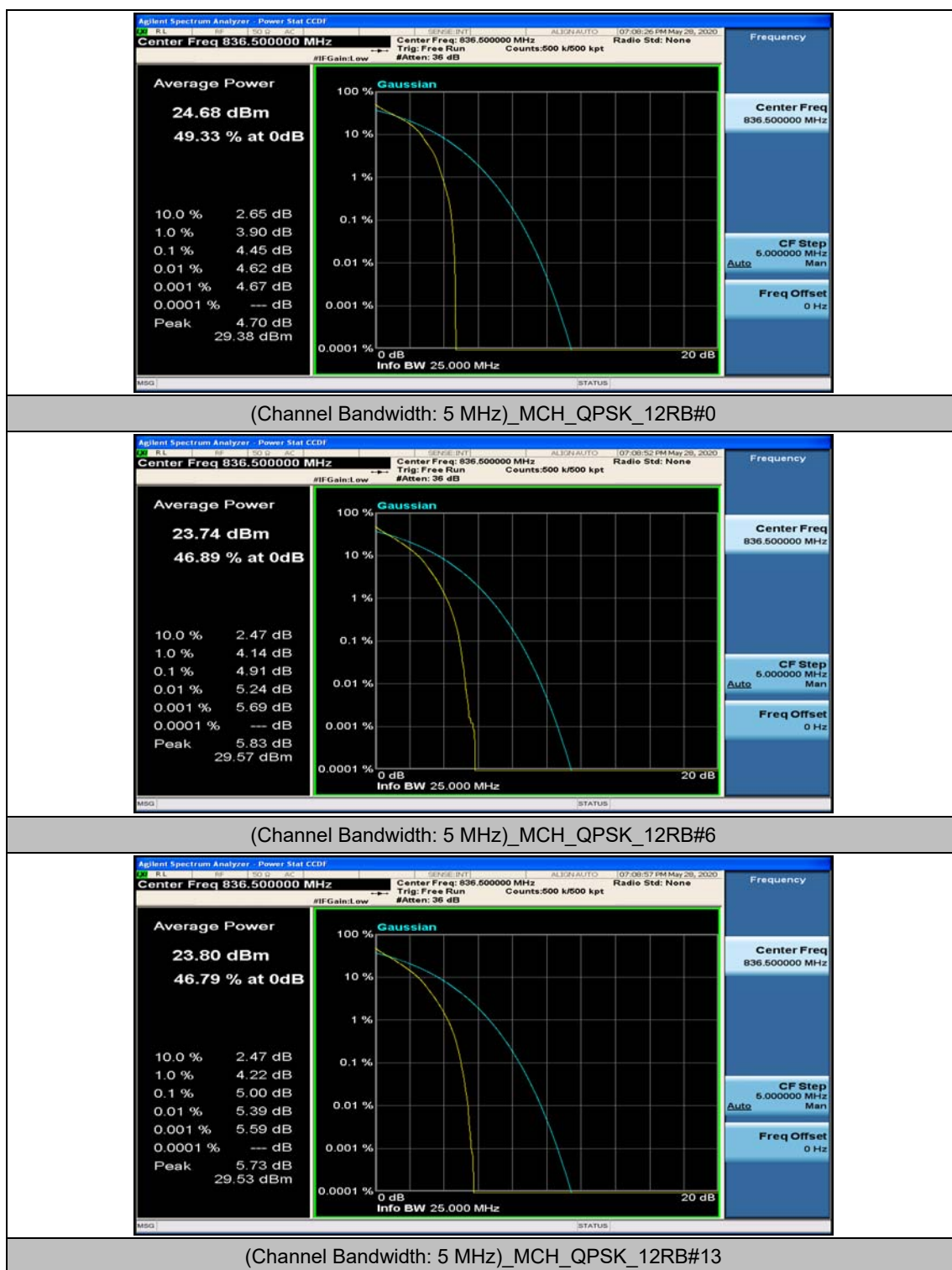
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0

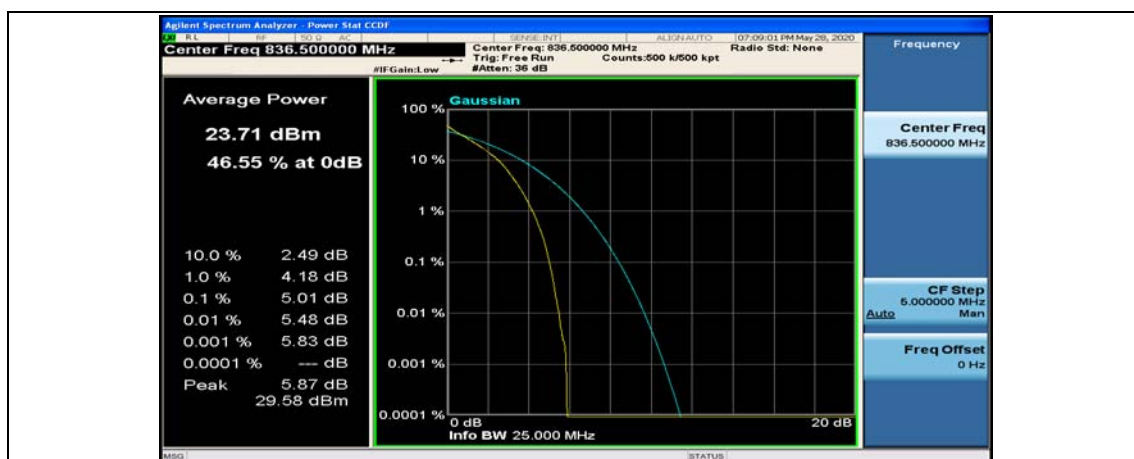


(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12



(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24

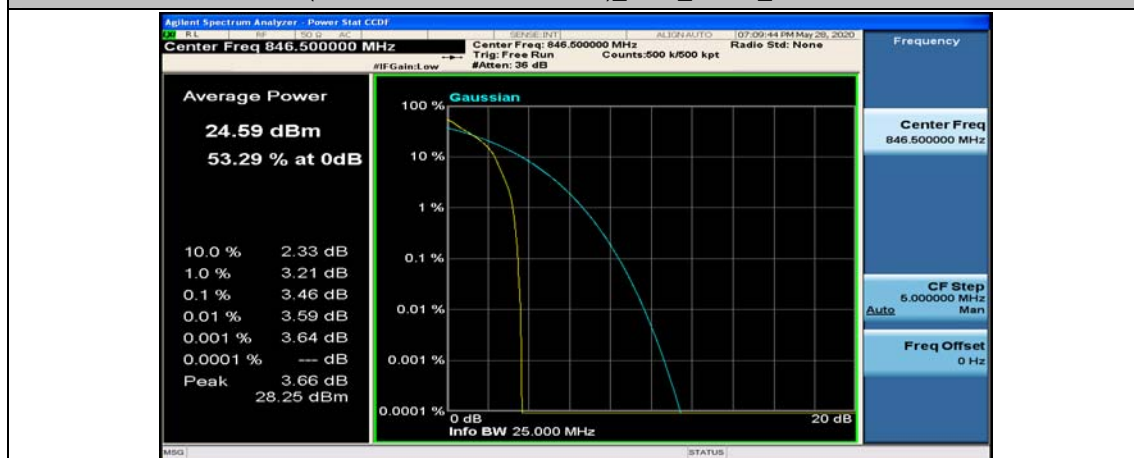




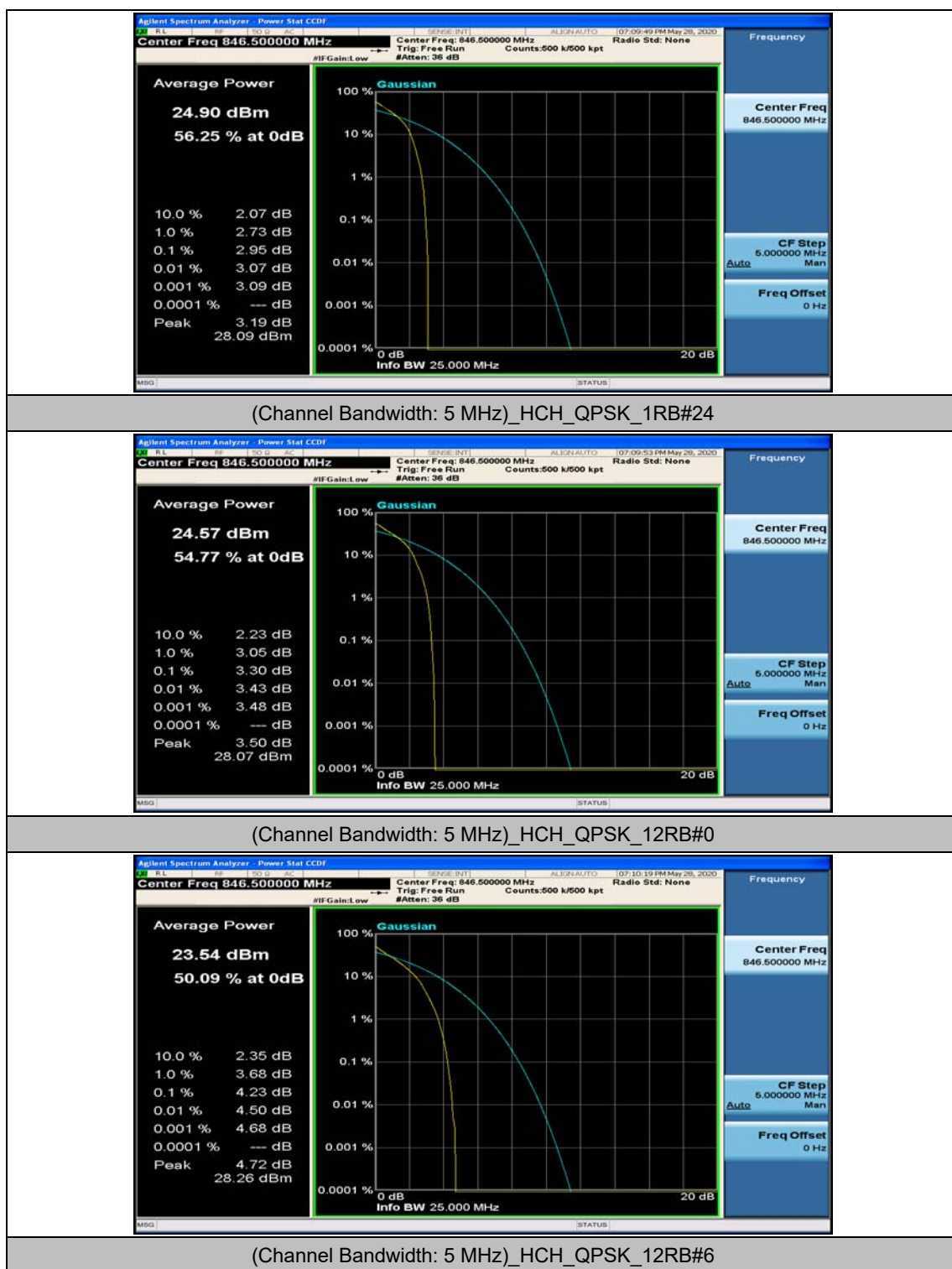
(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0

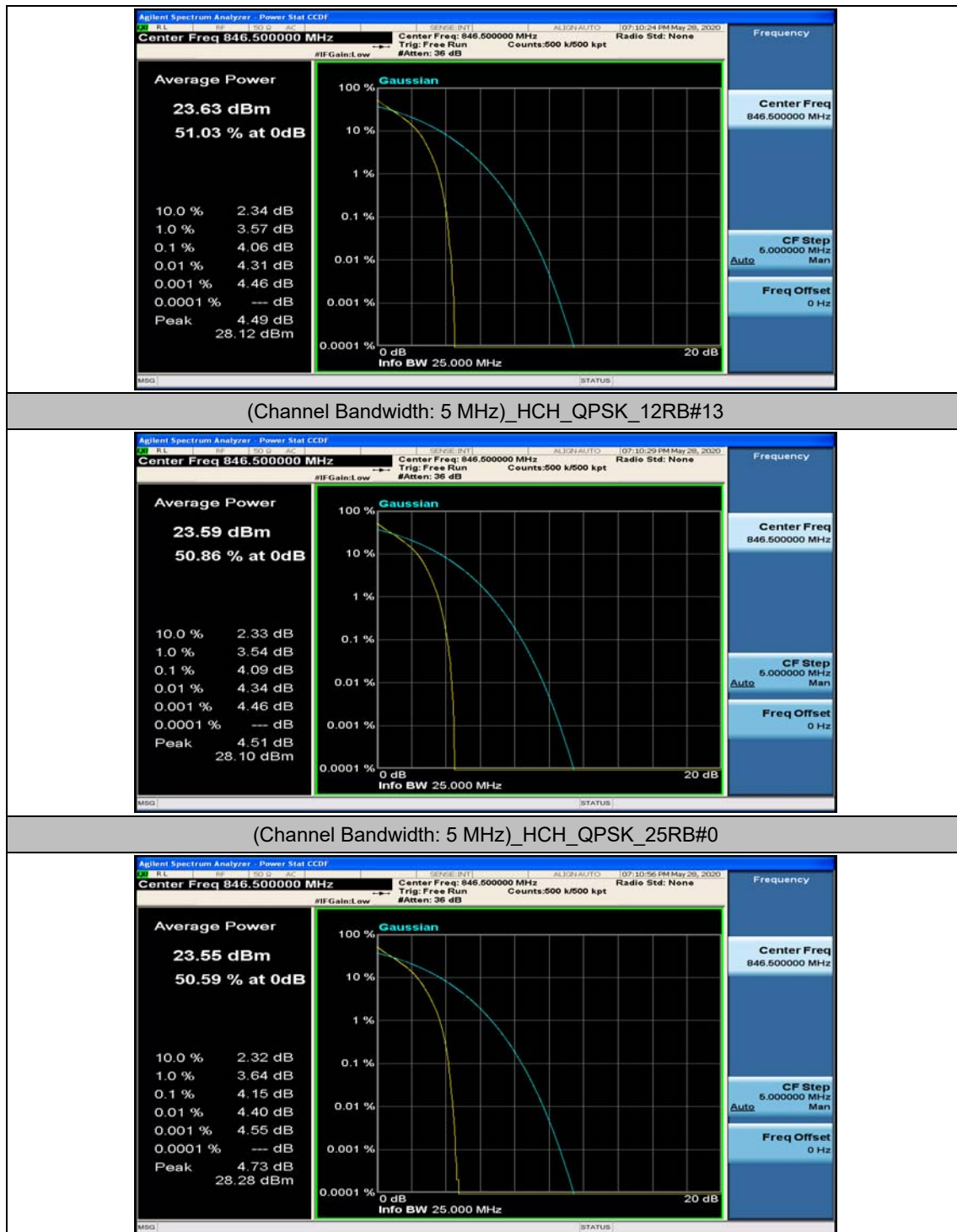


(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0

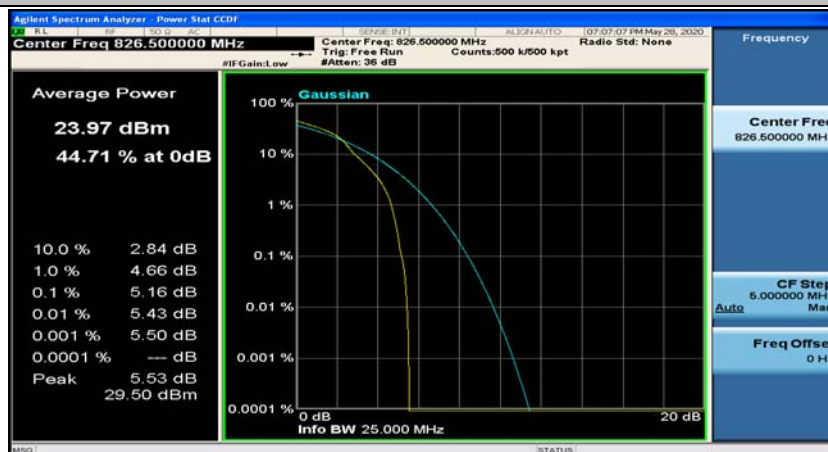


(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12





(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0



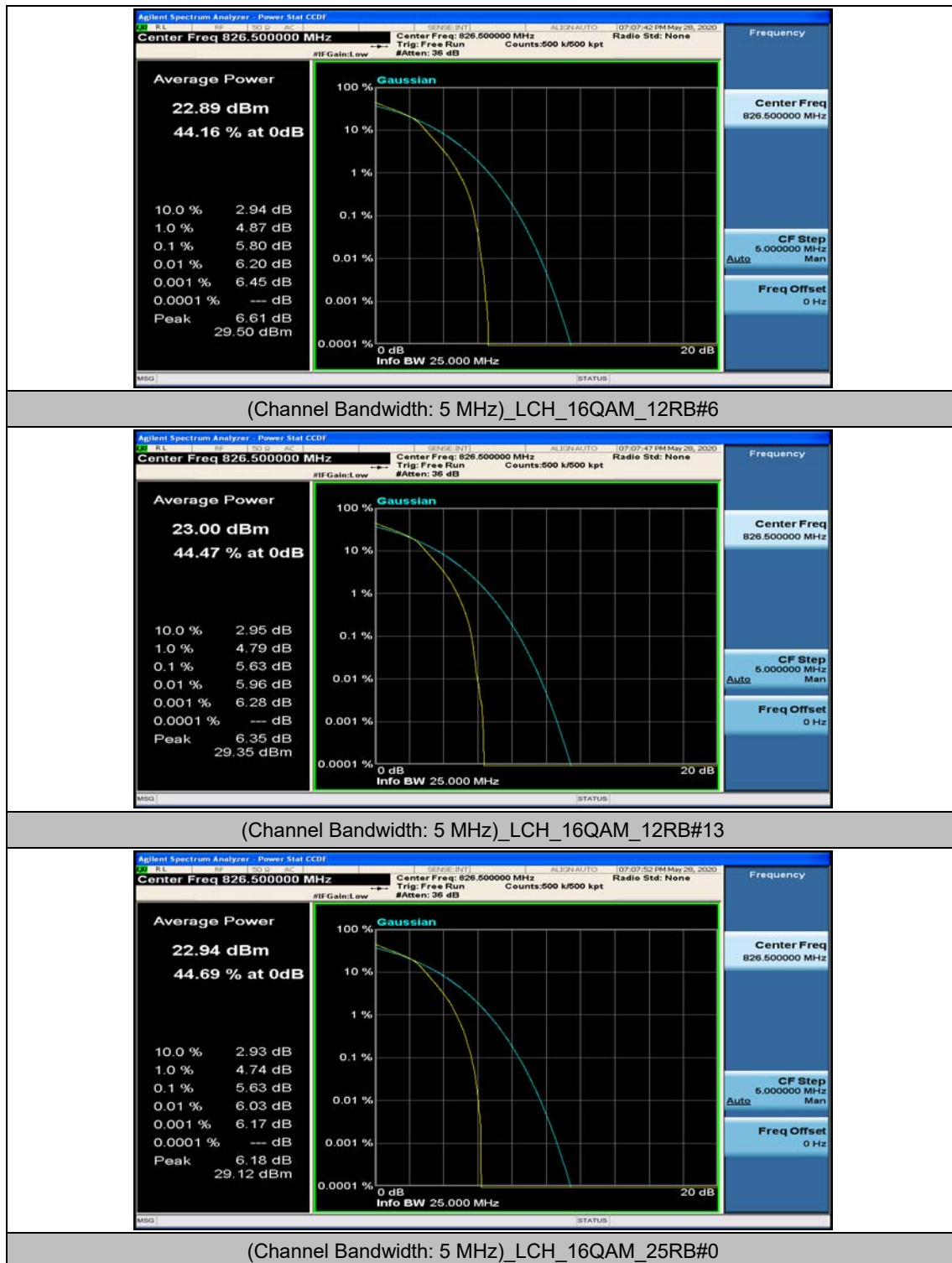
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12



(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24



(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#0





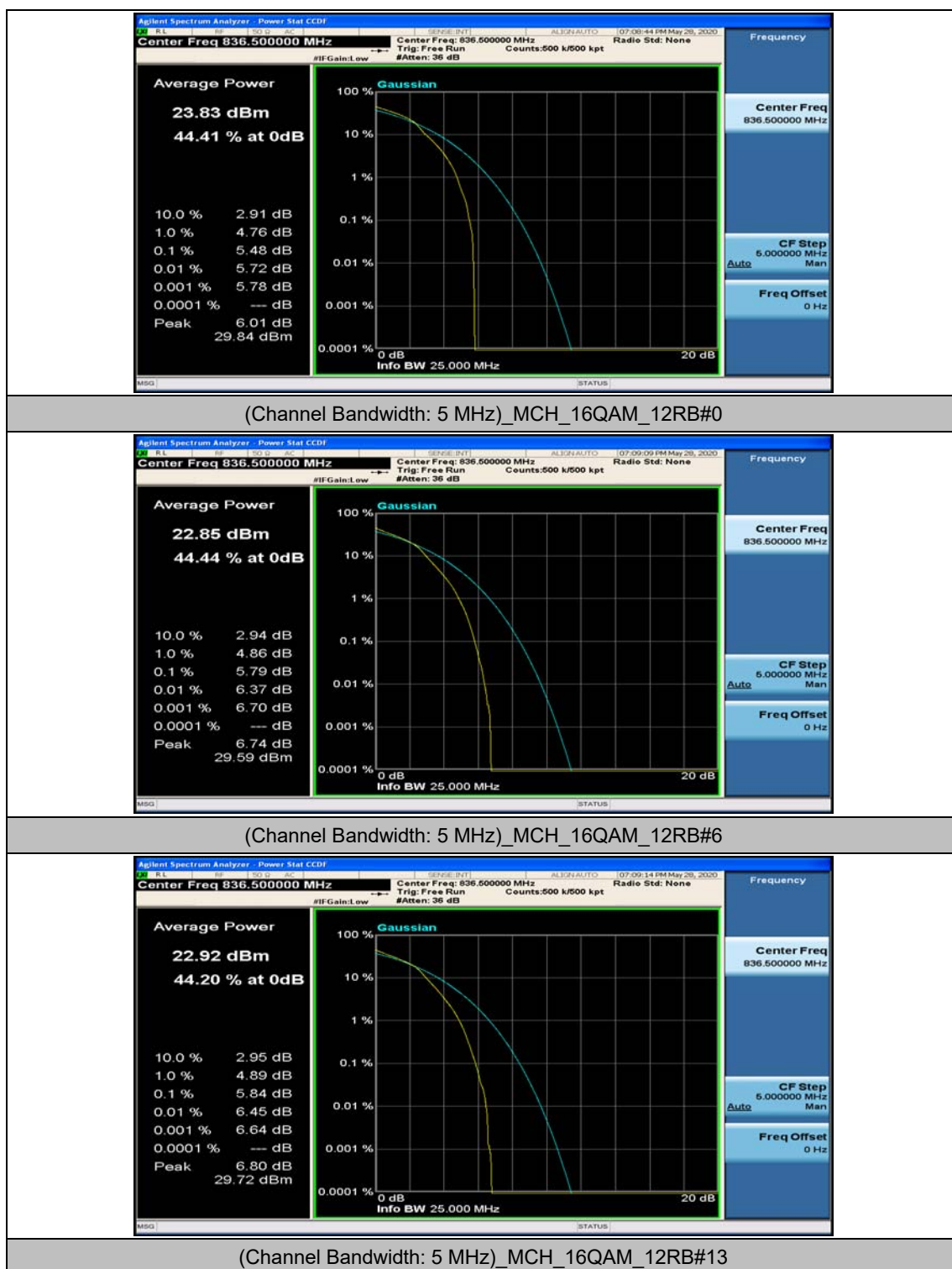
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#12



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#24





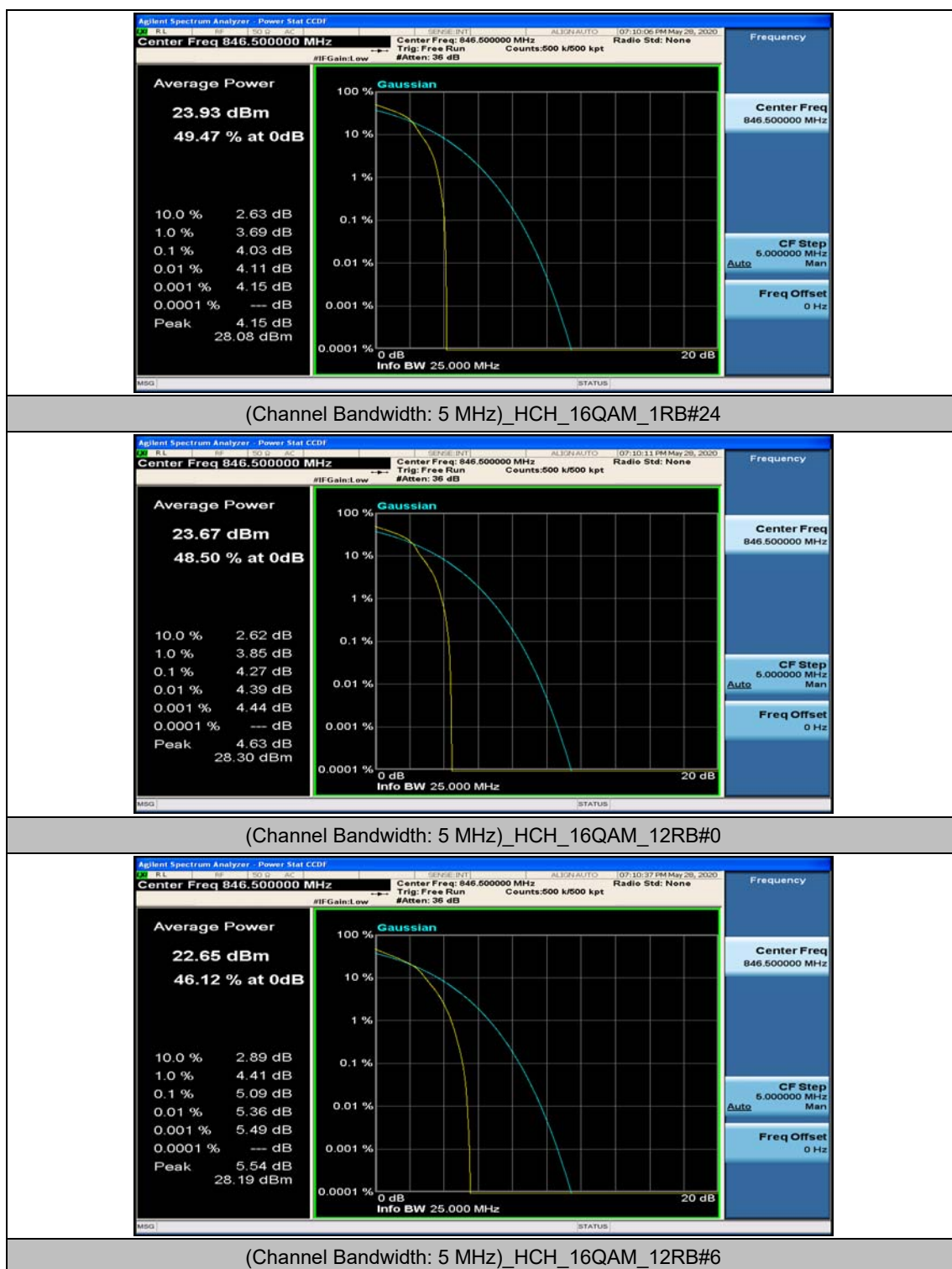
(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0

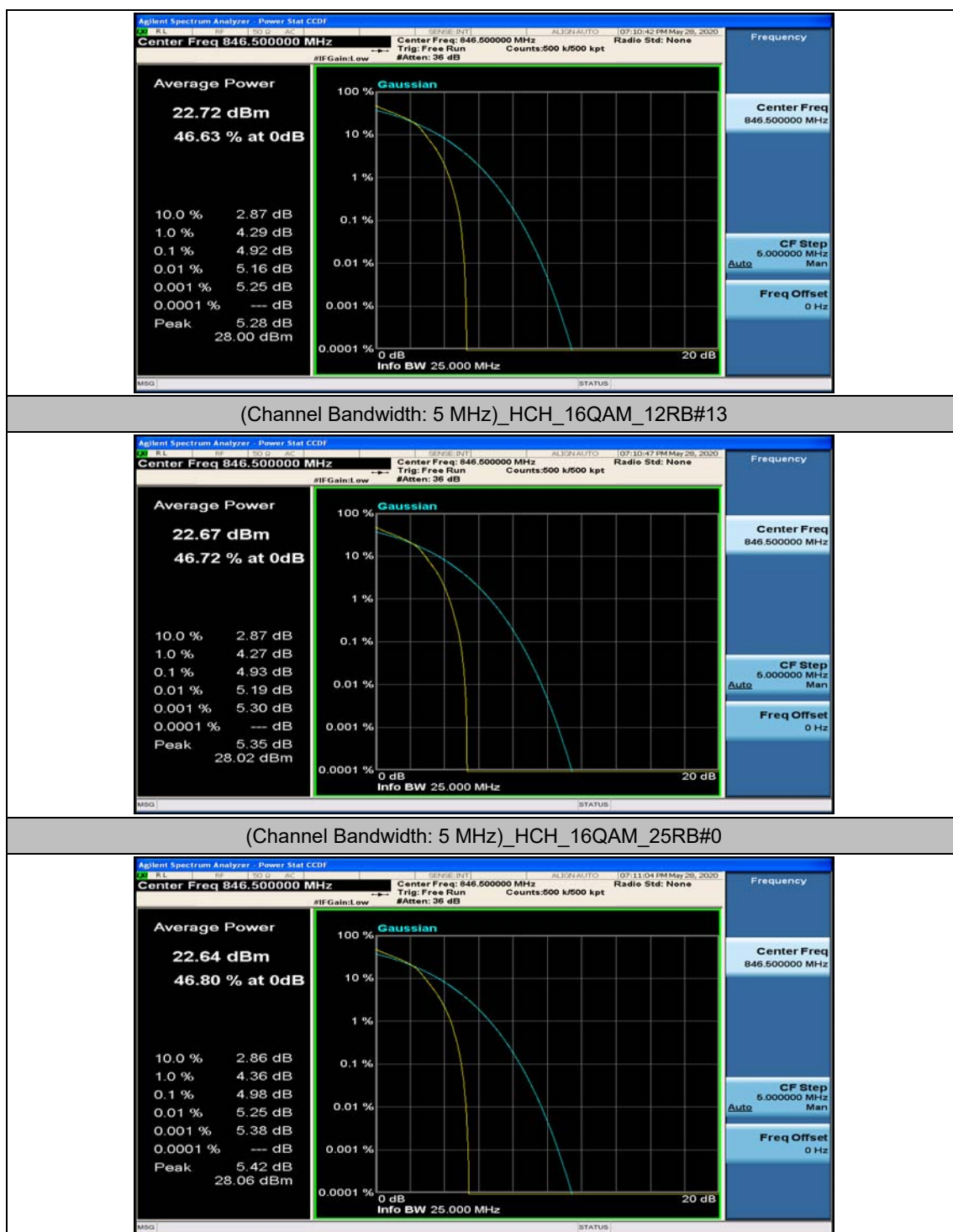


(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12





Channel Bandwidth: 10 MHz