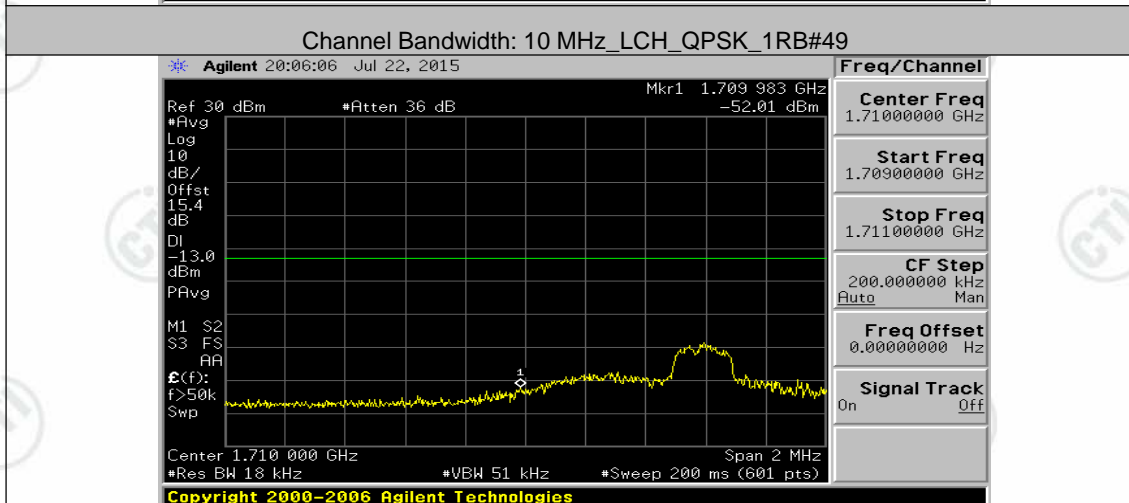
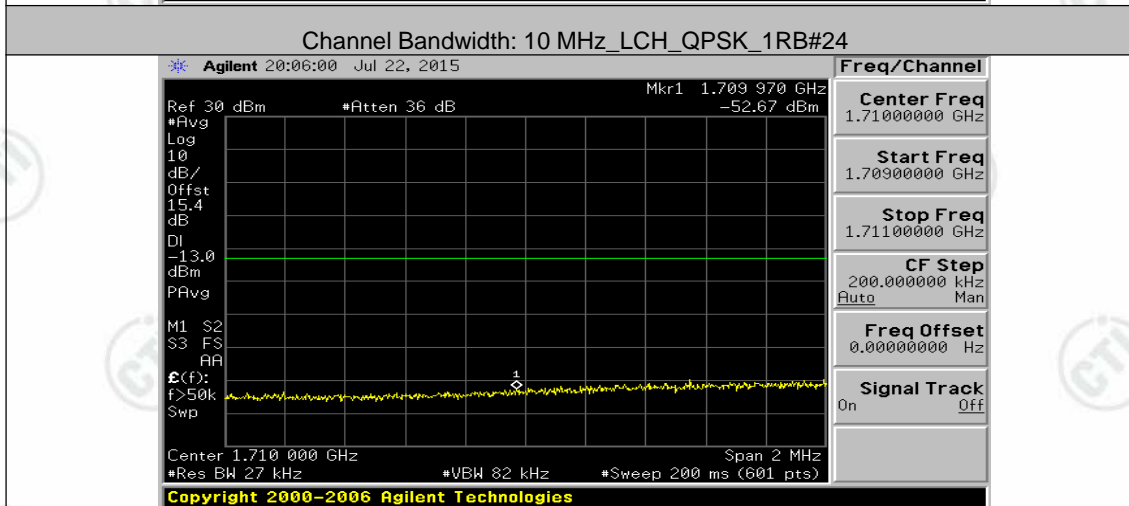
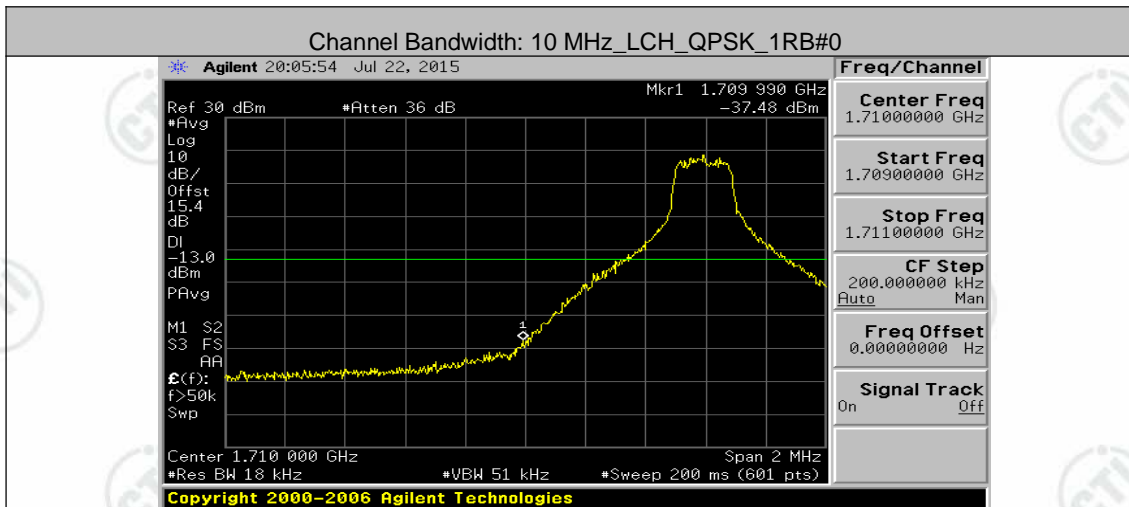
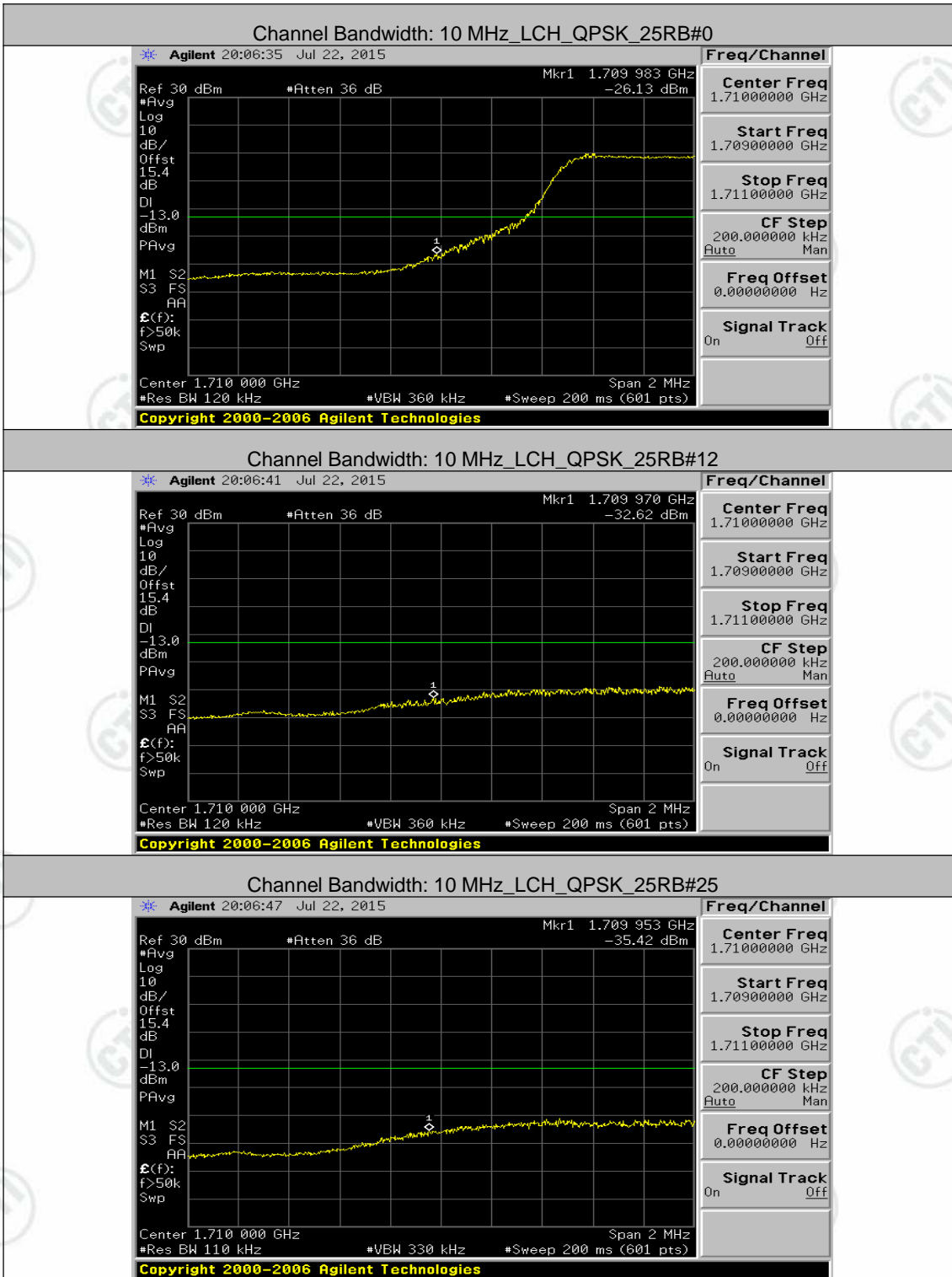
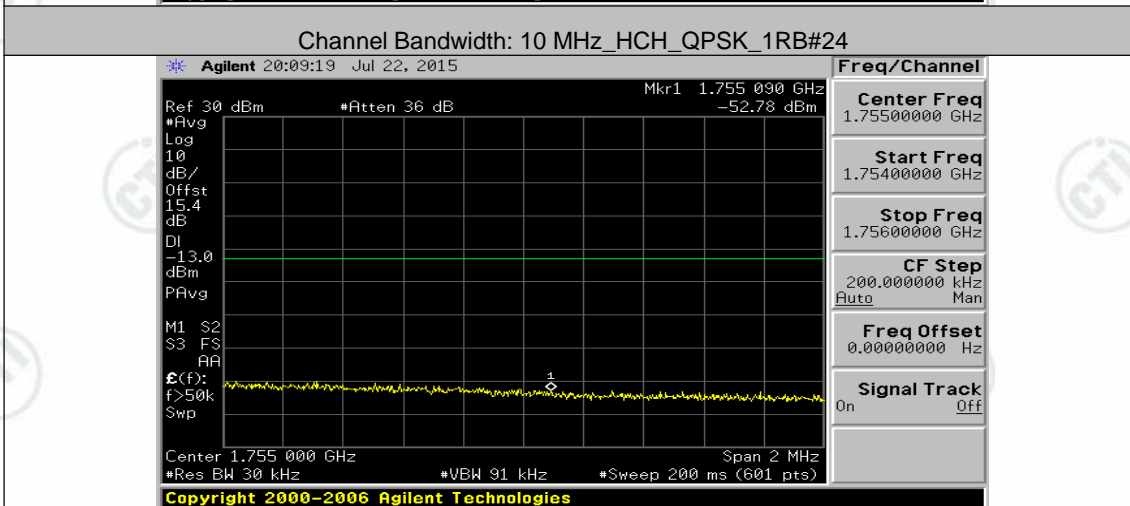
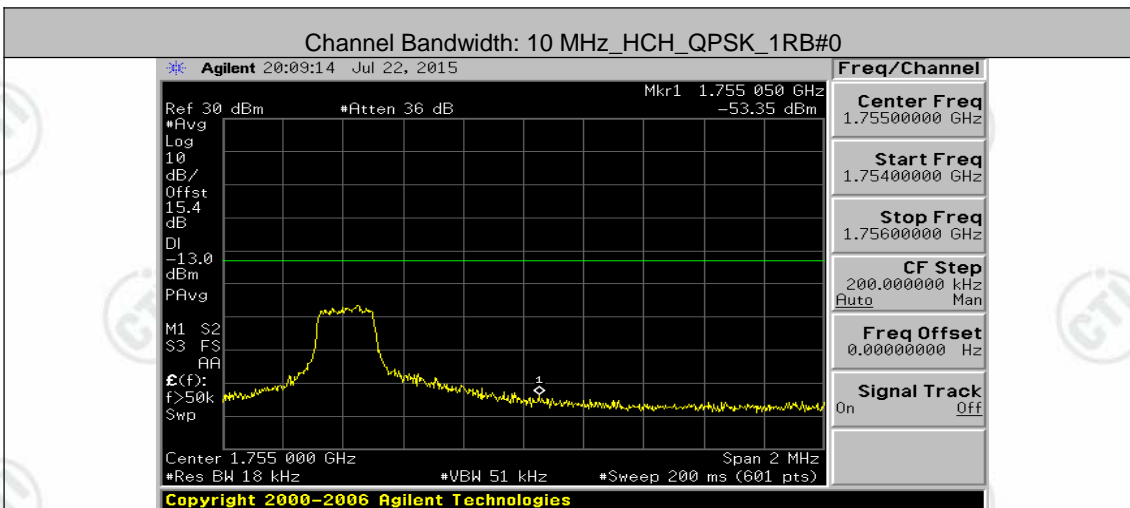
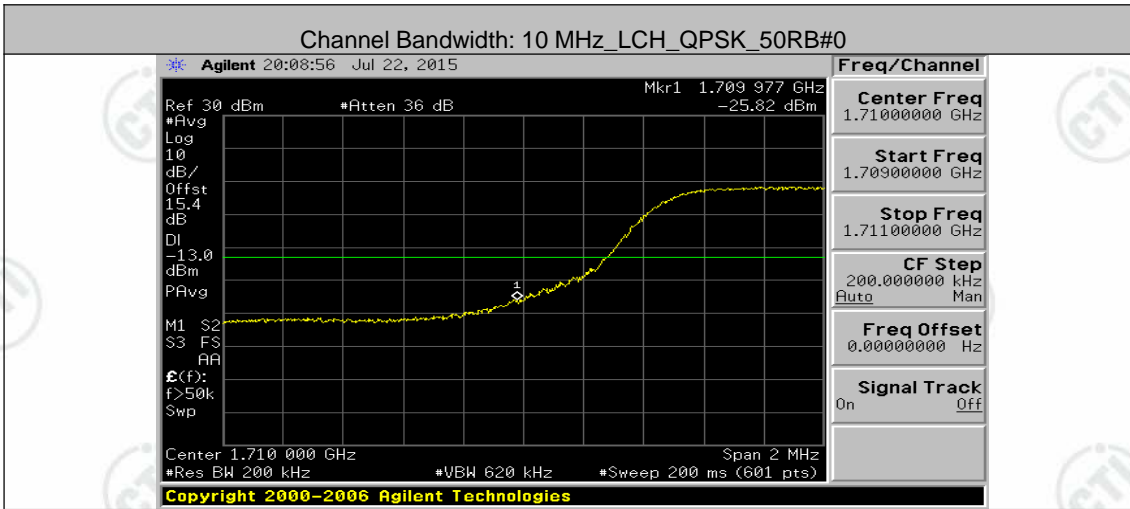
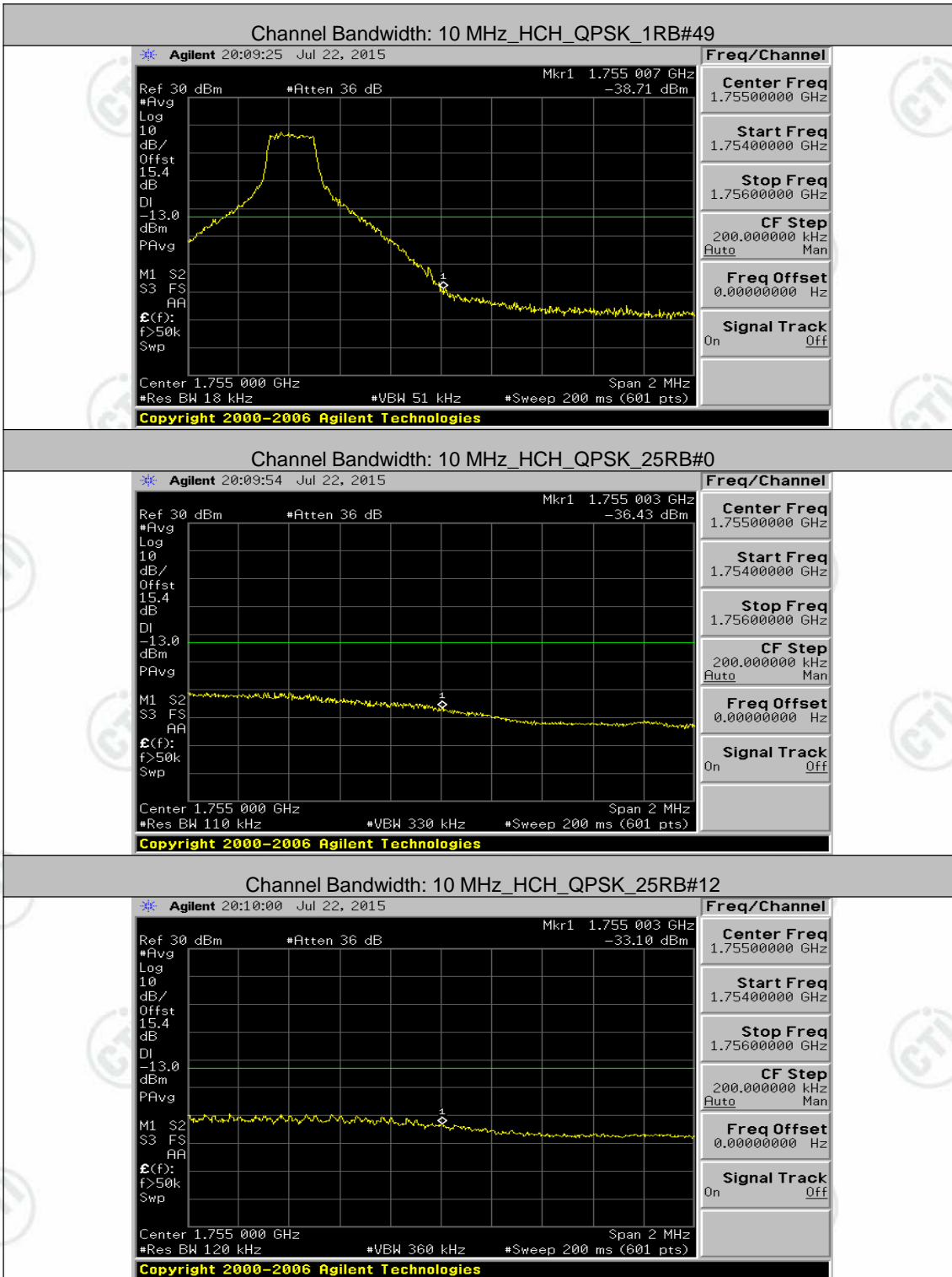


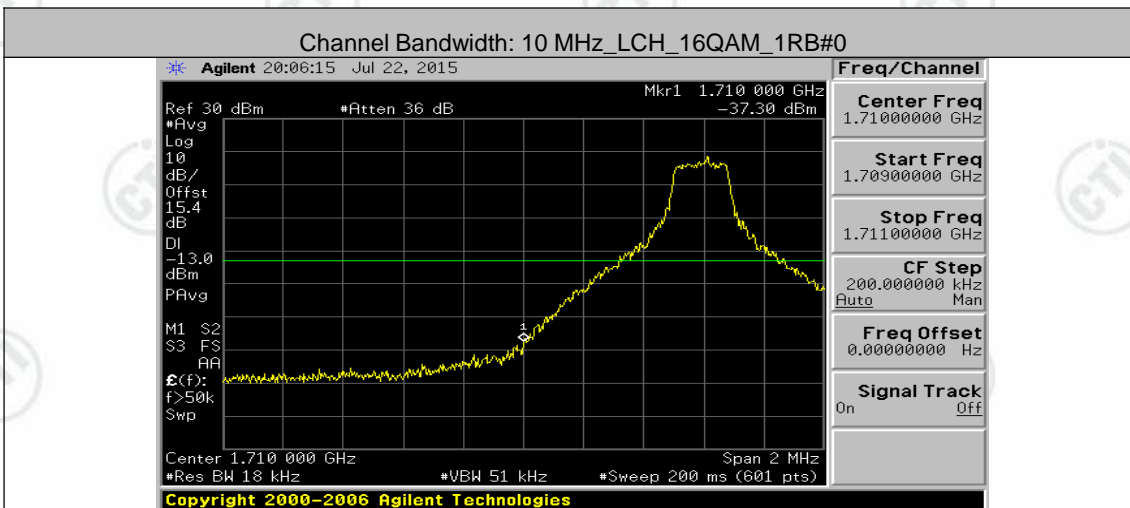
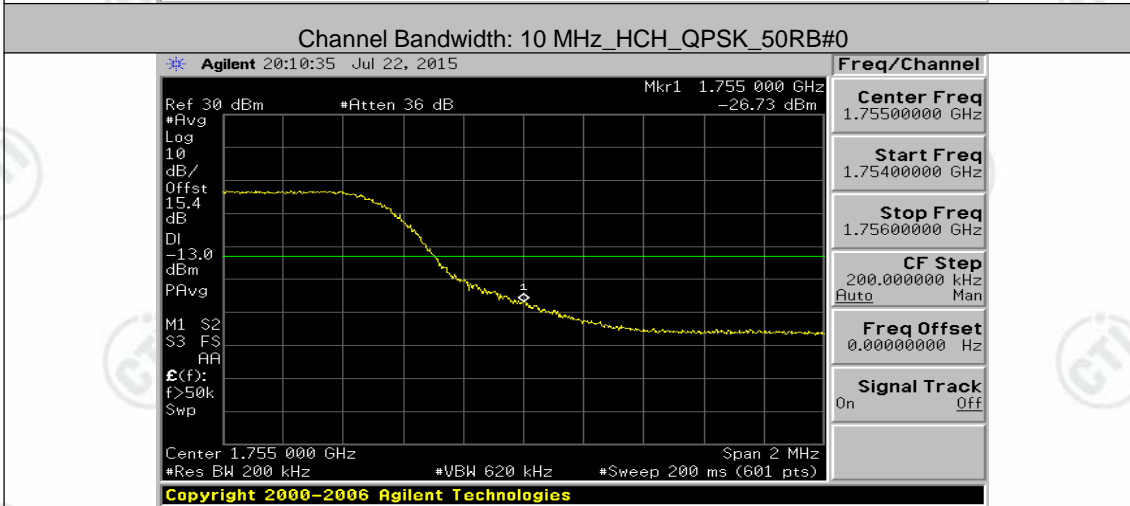
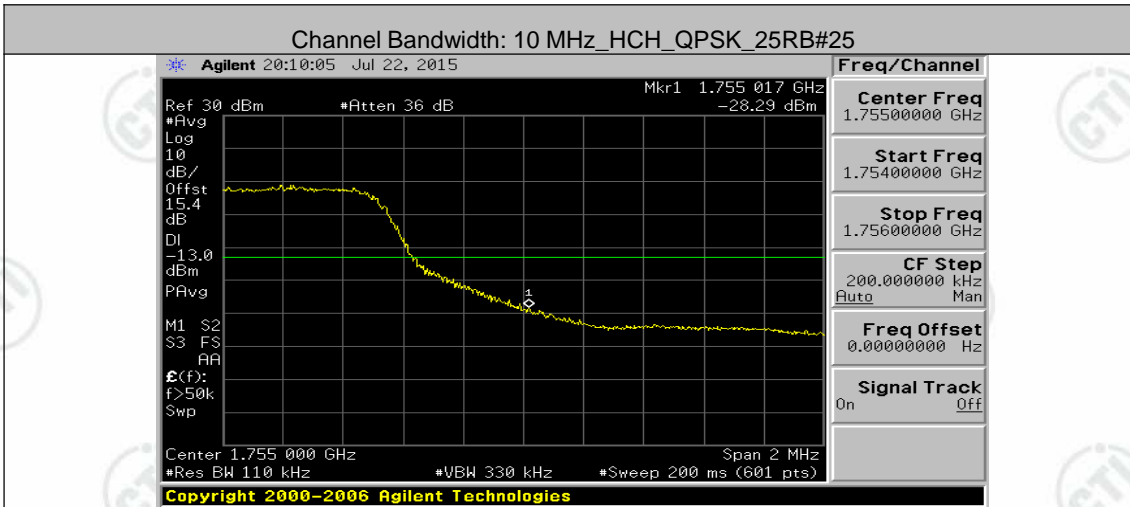
Channel Bandwidth: 10 MHz

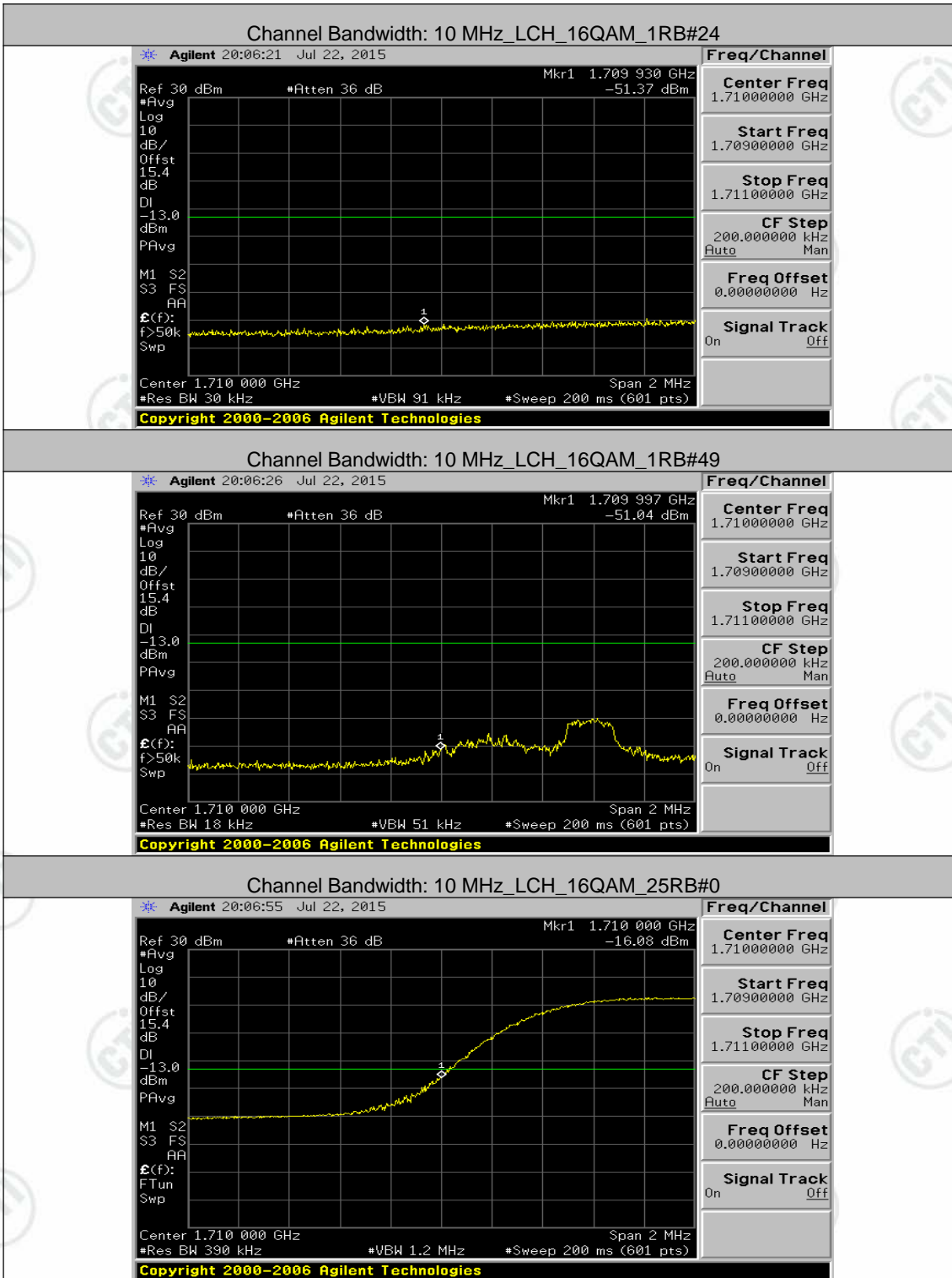


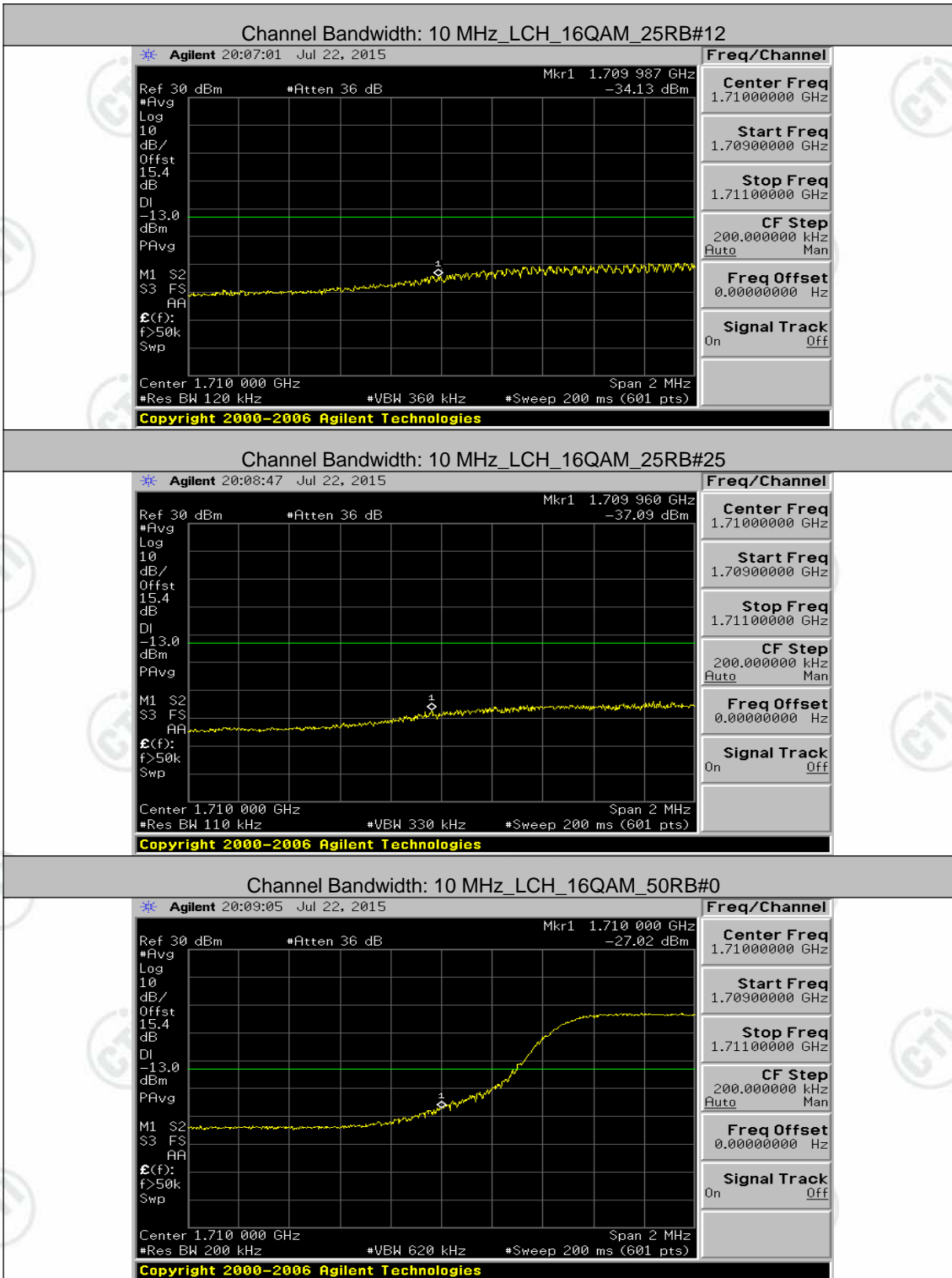




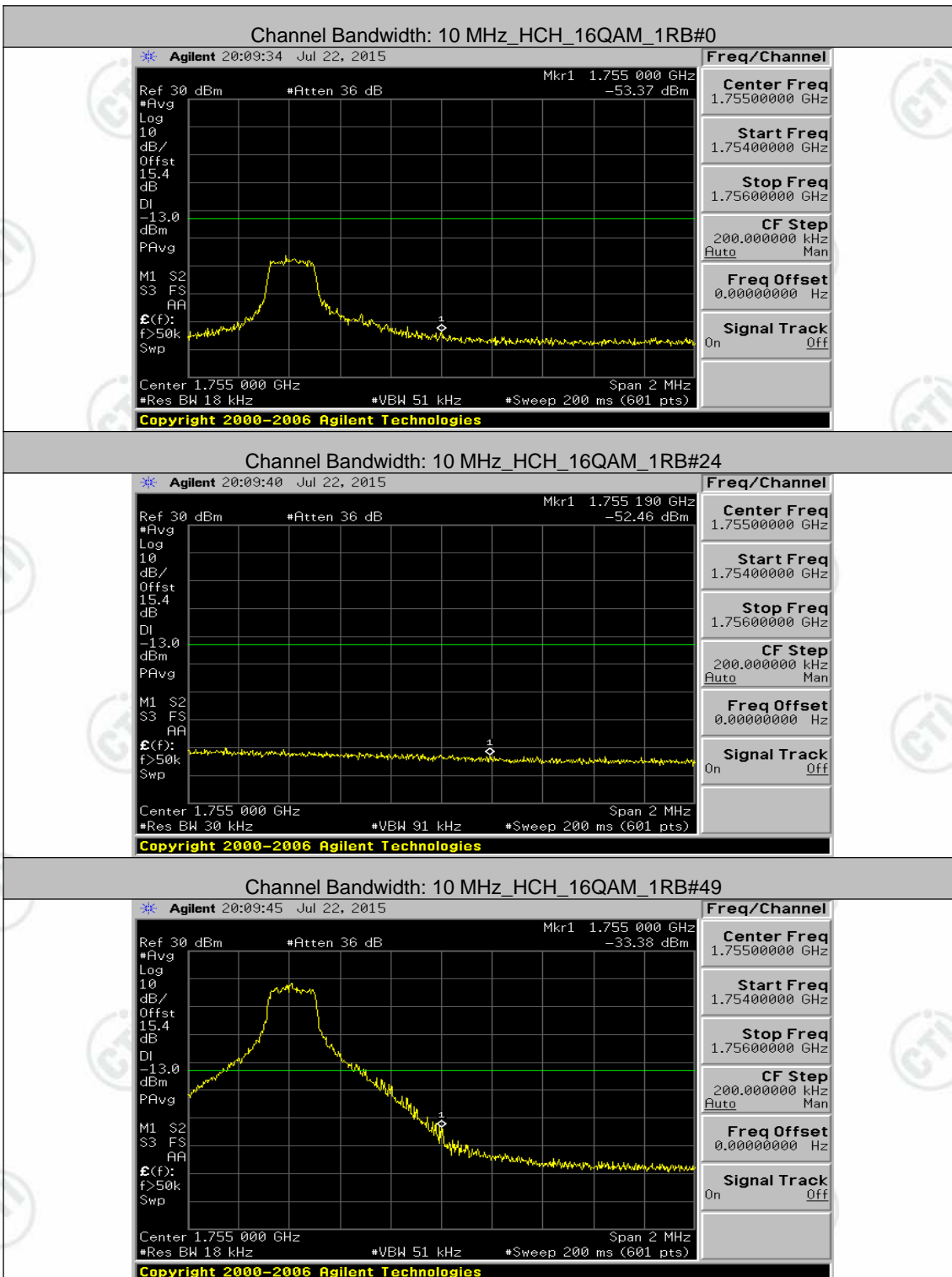


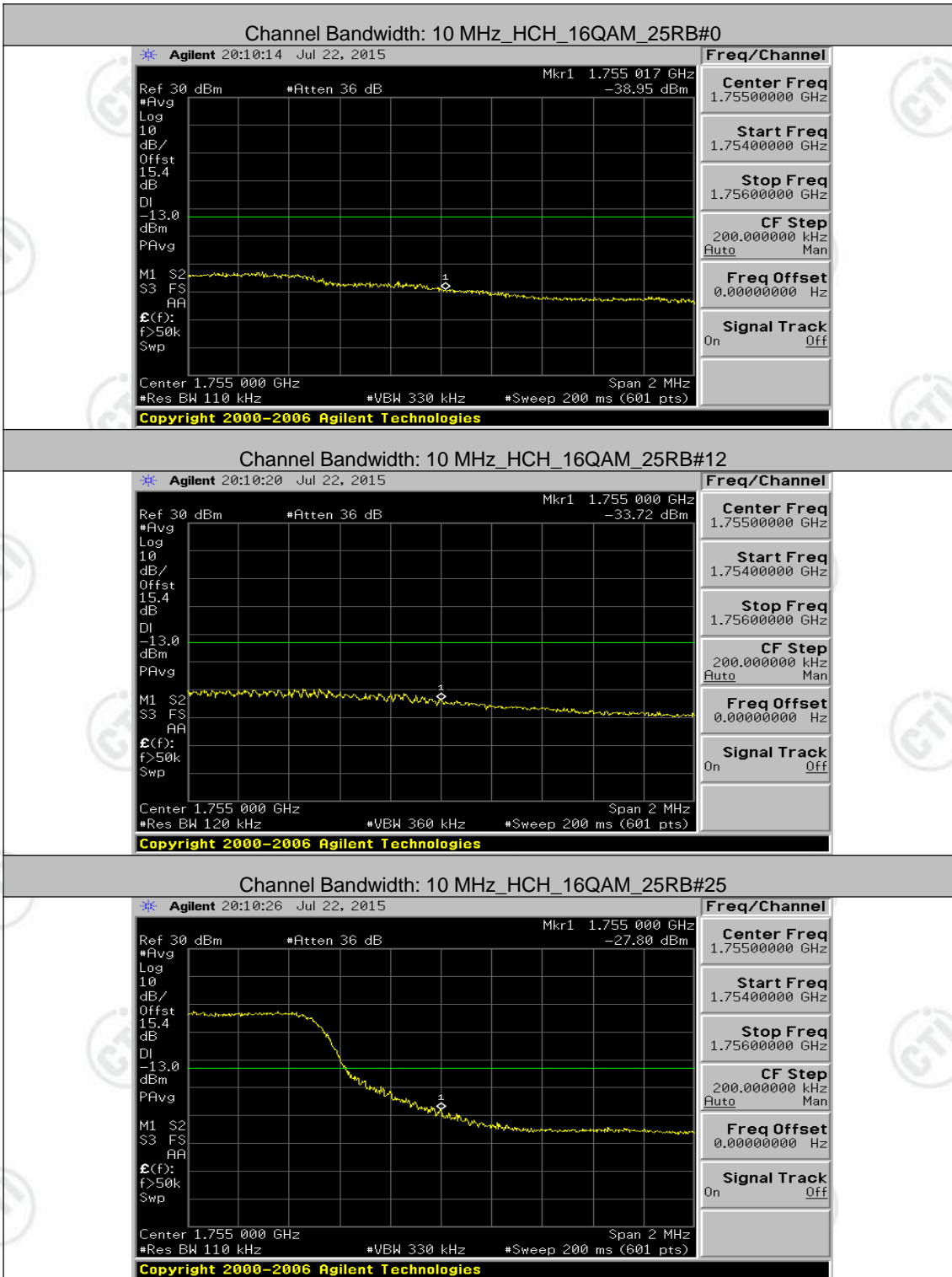


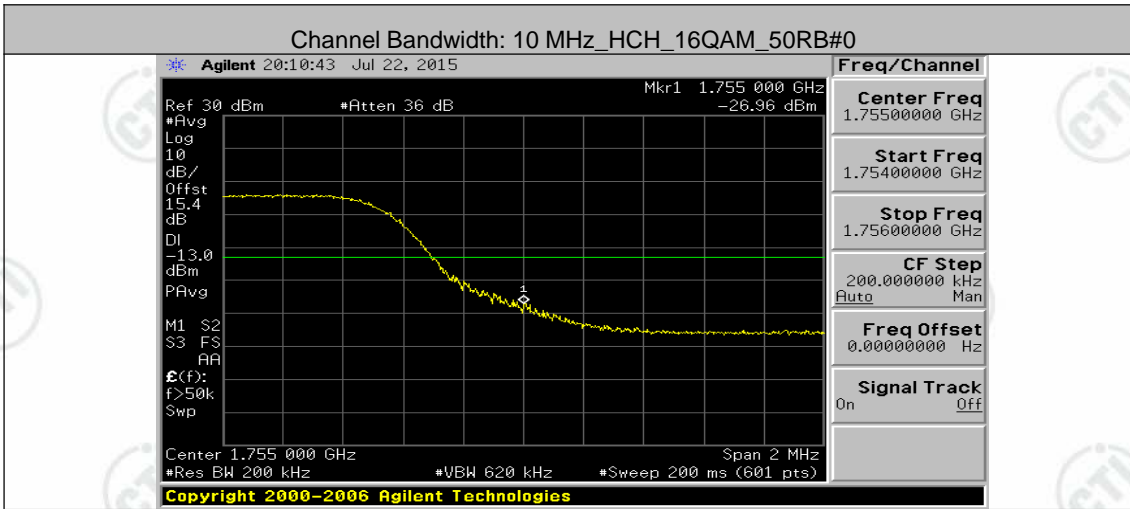




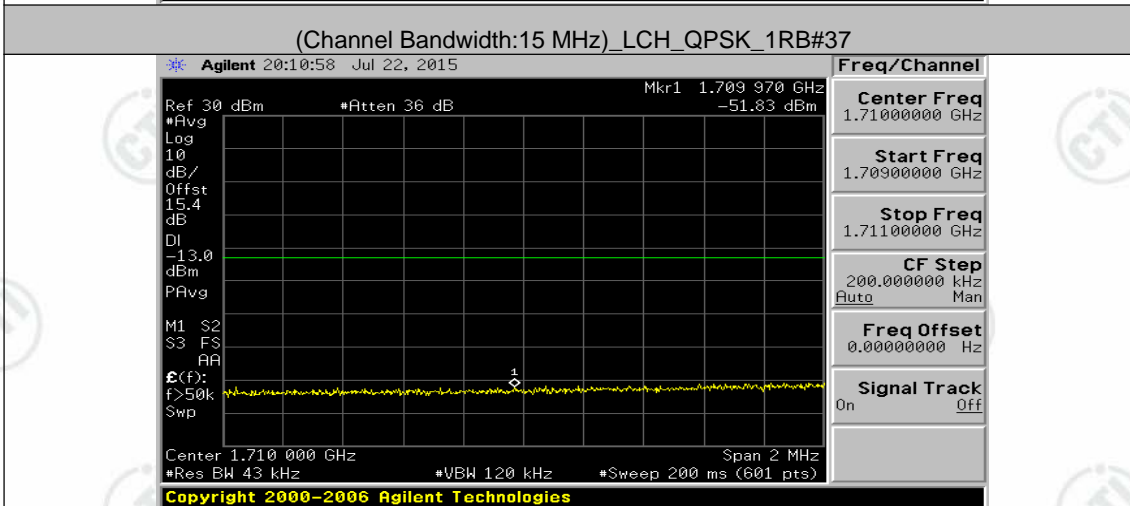
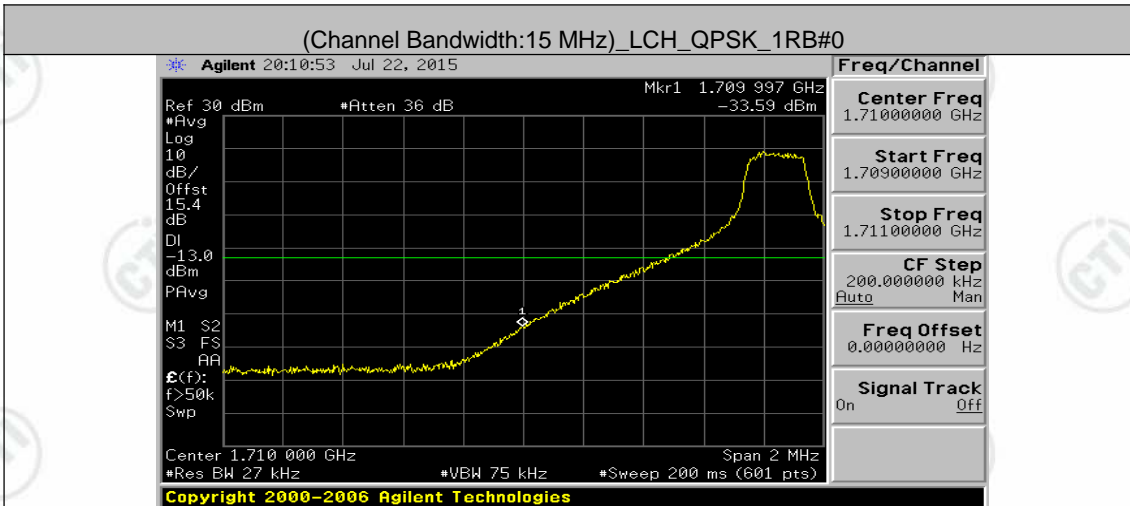


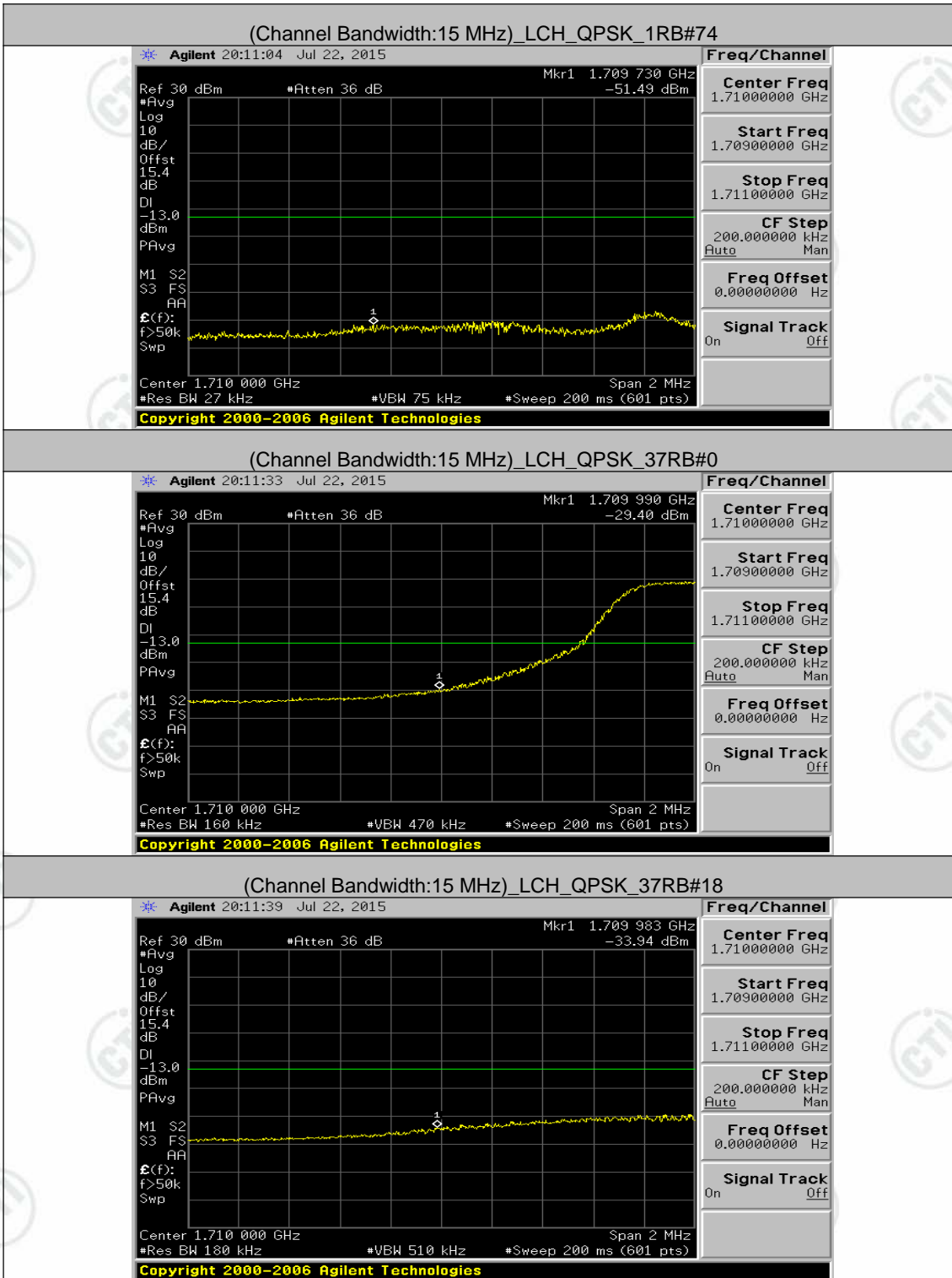


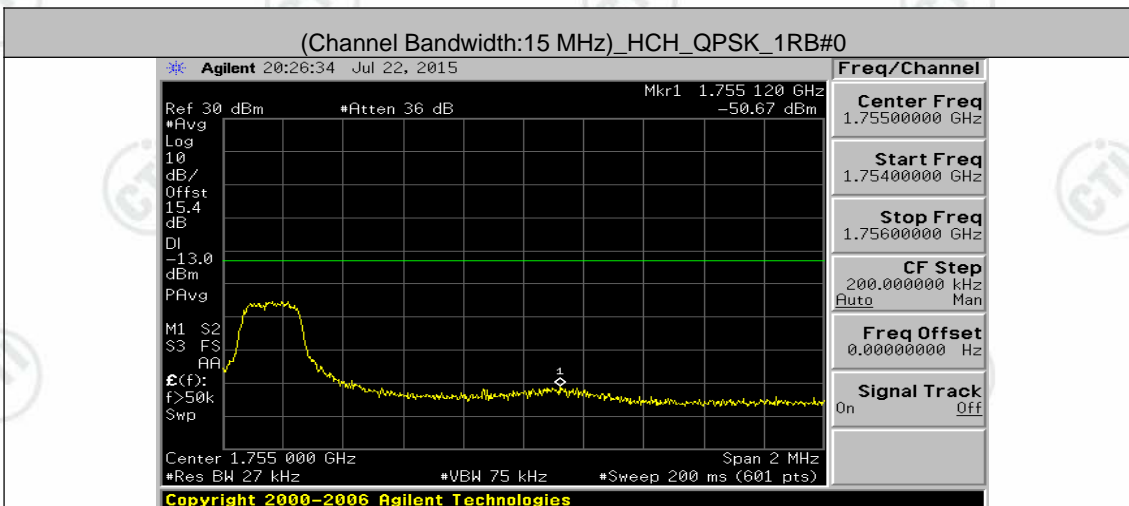
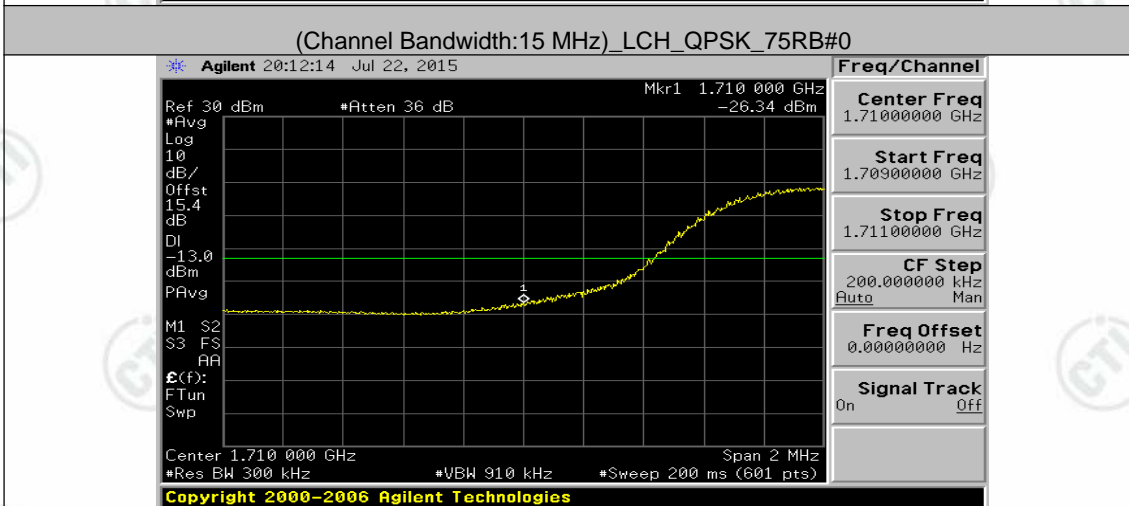
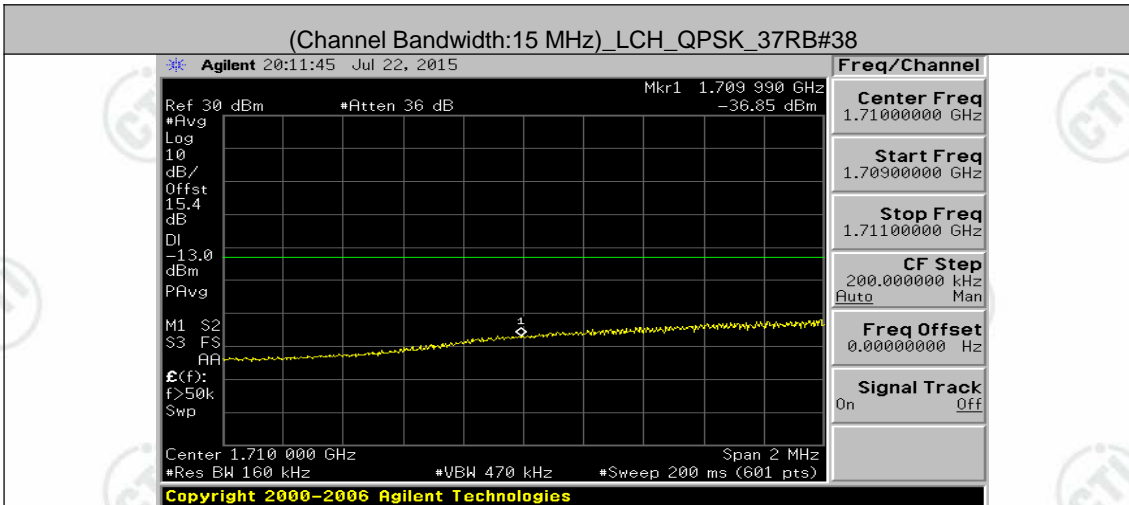


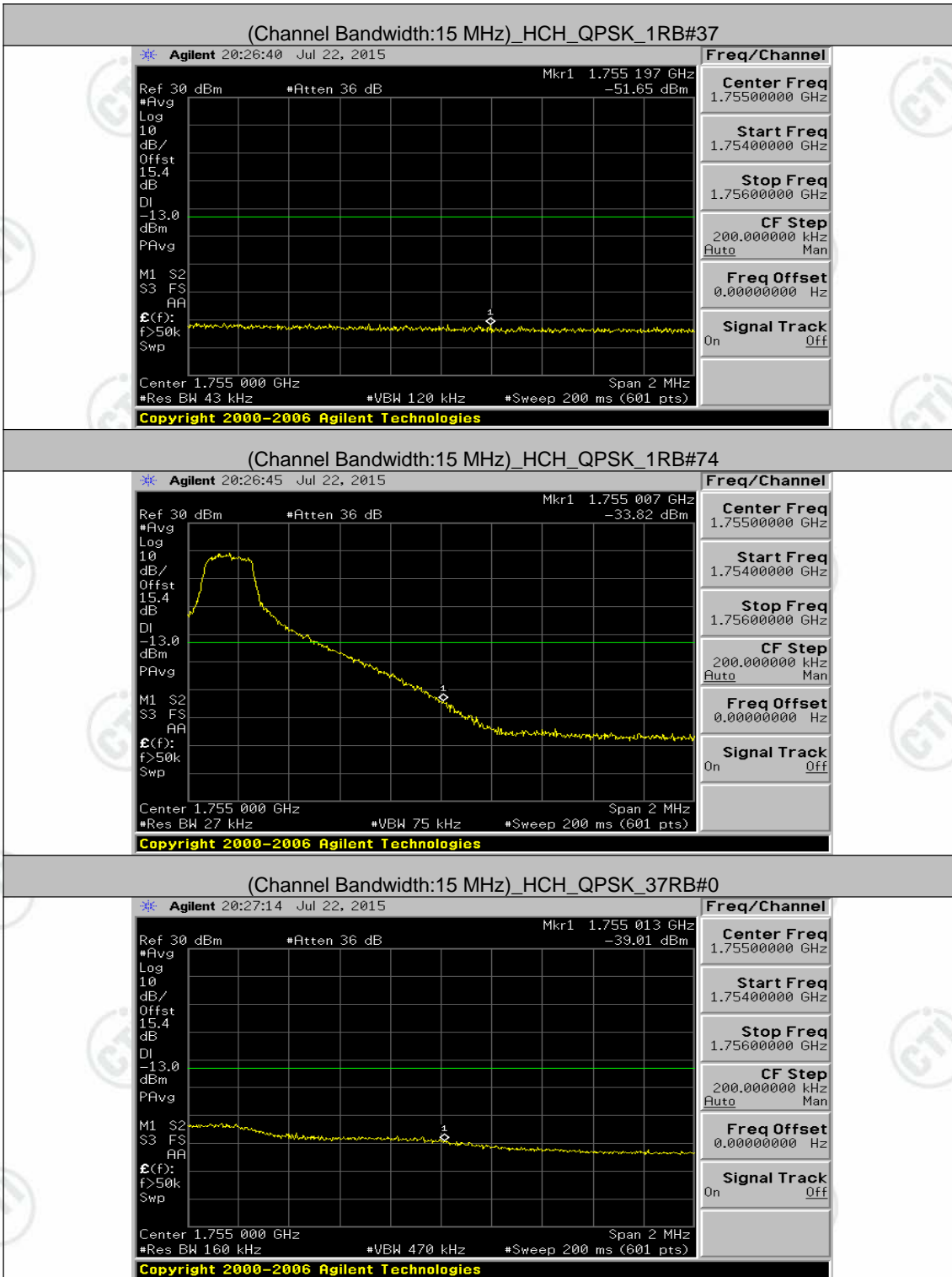


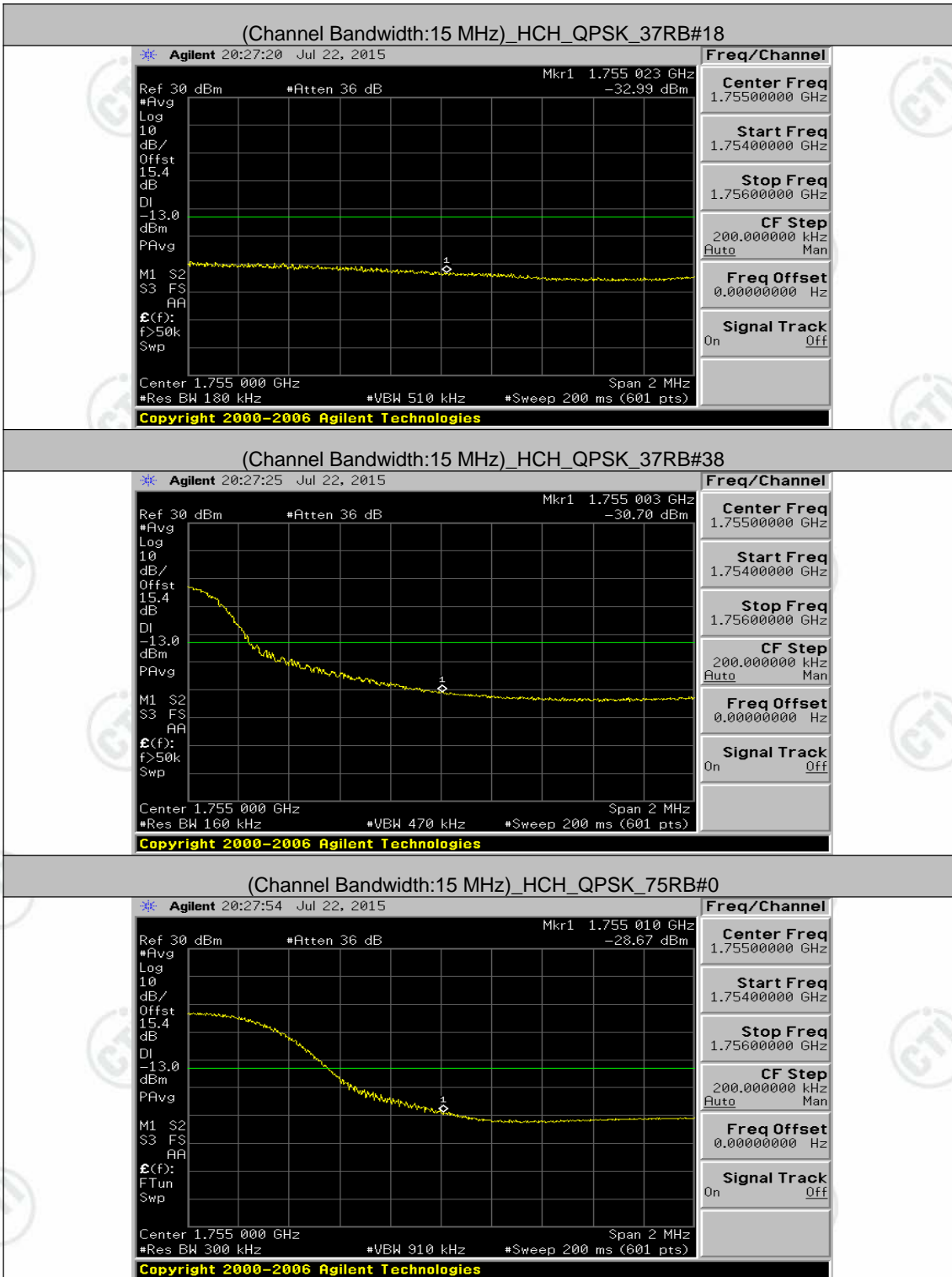
**Channel Bandwidth: 15 MHz**

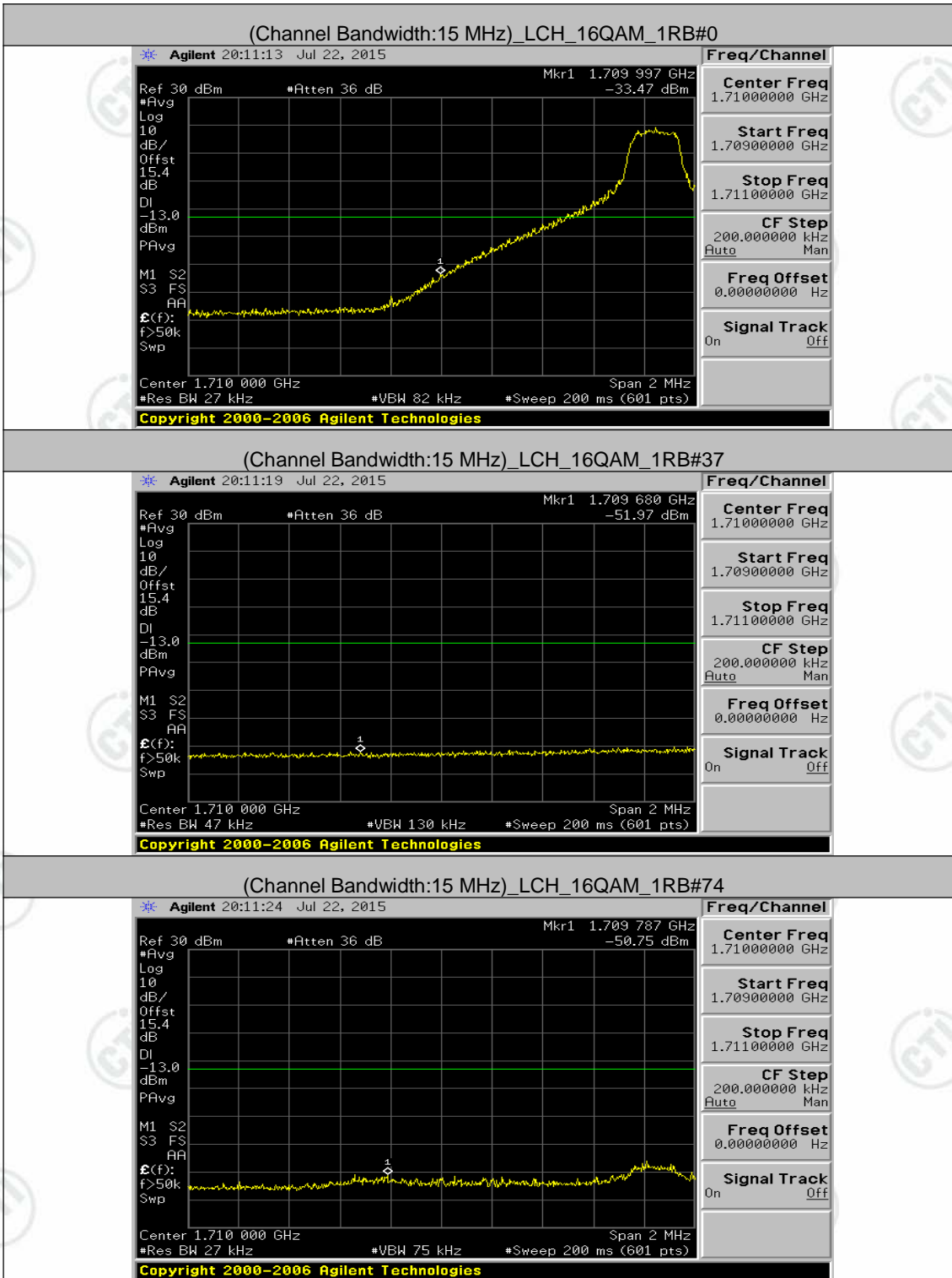




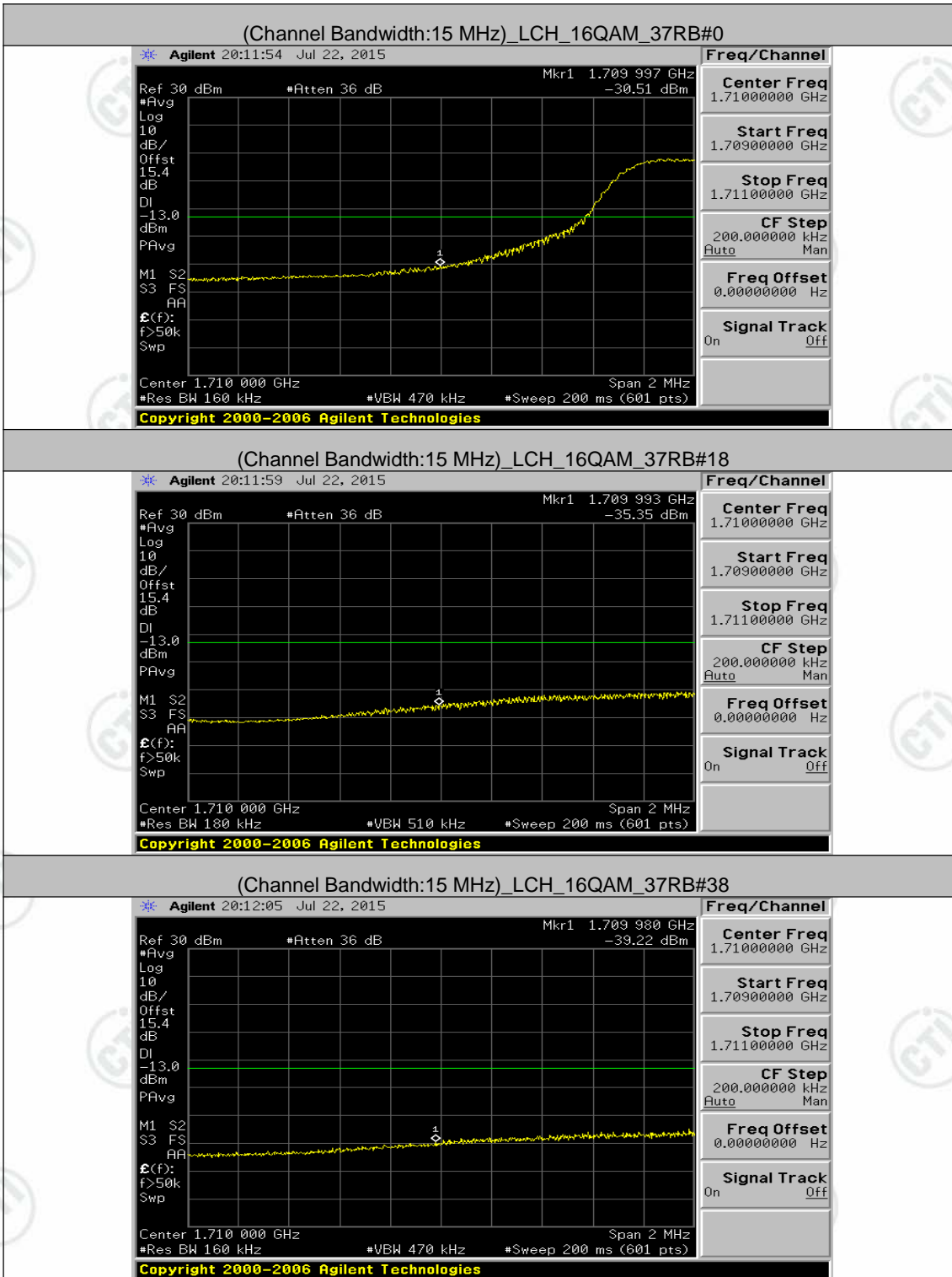


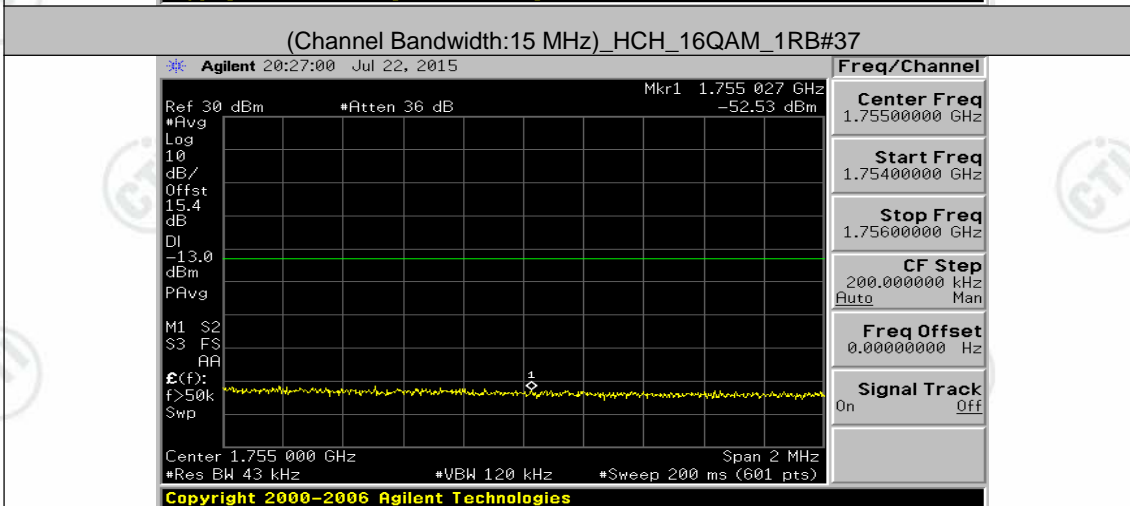
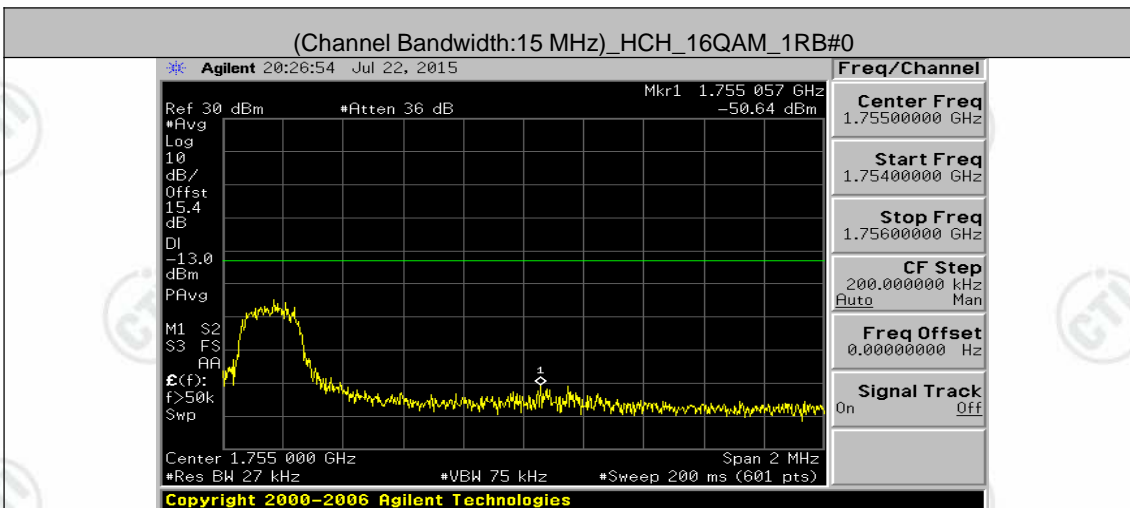
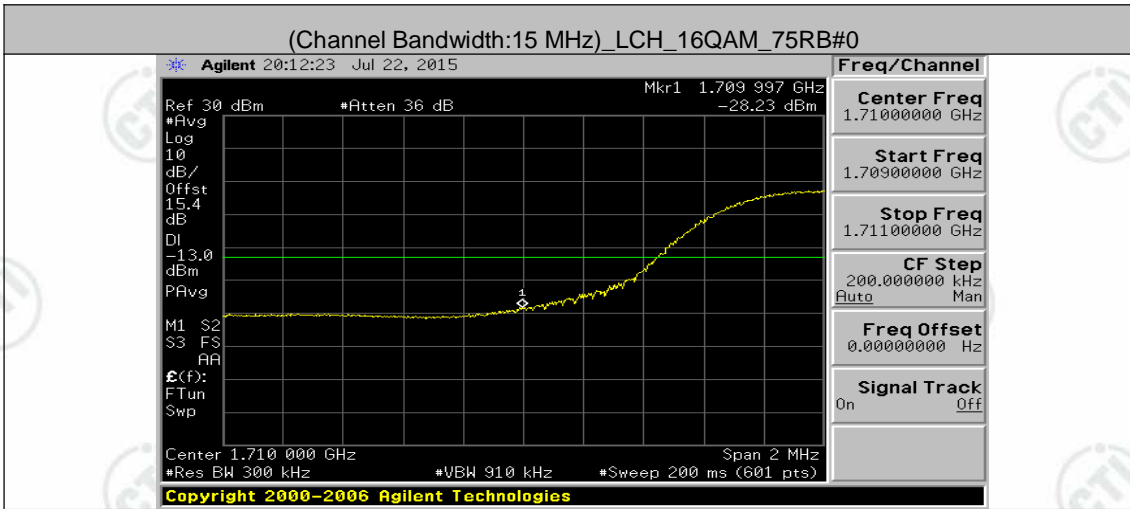


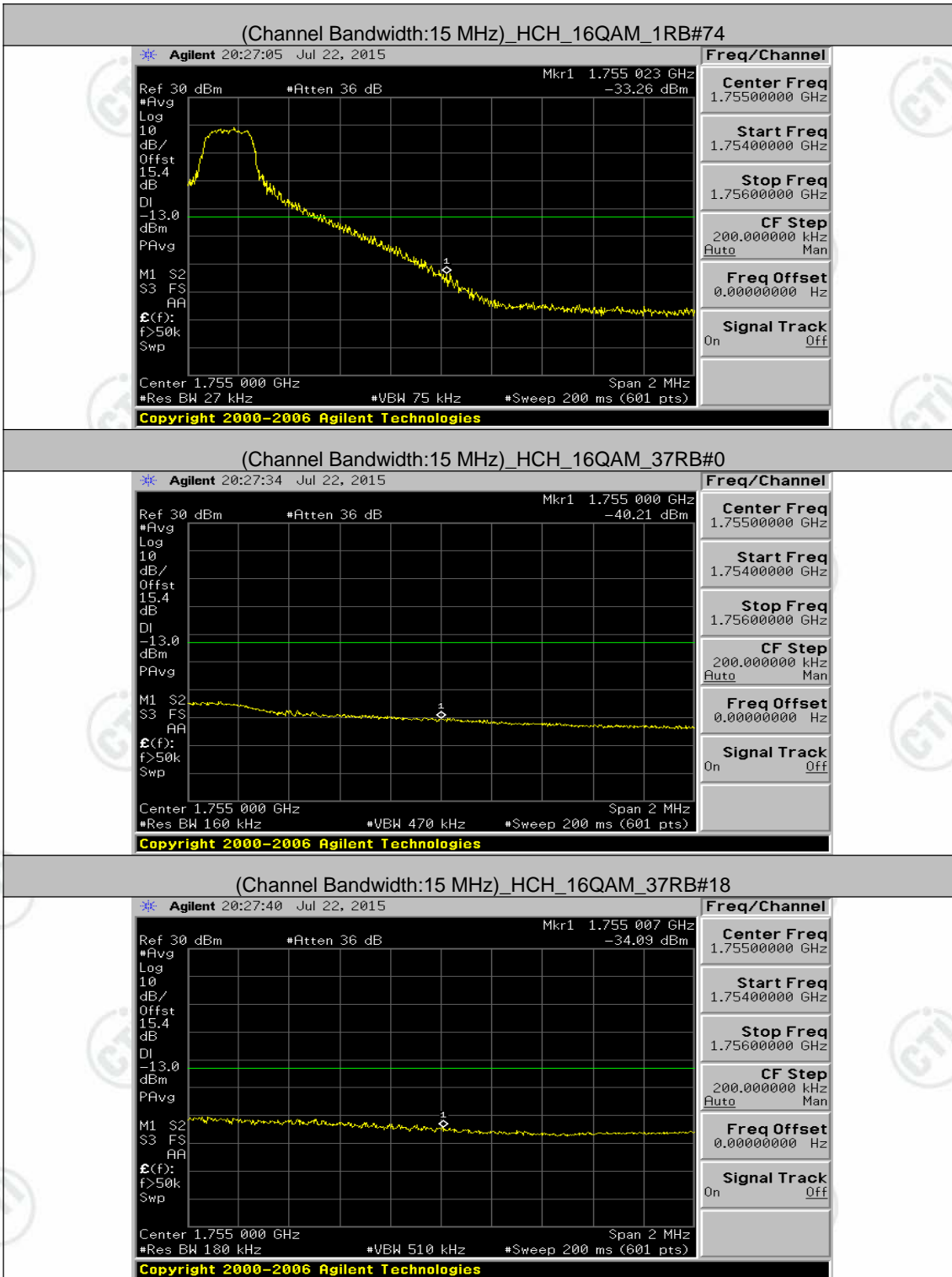


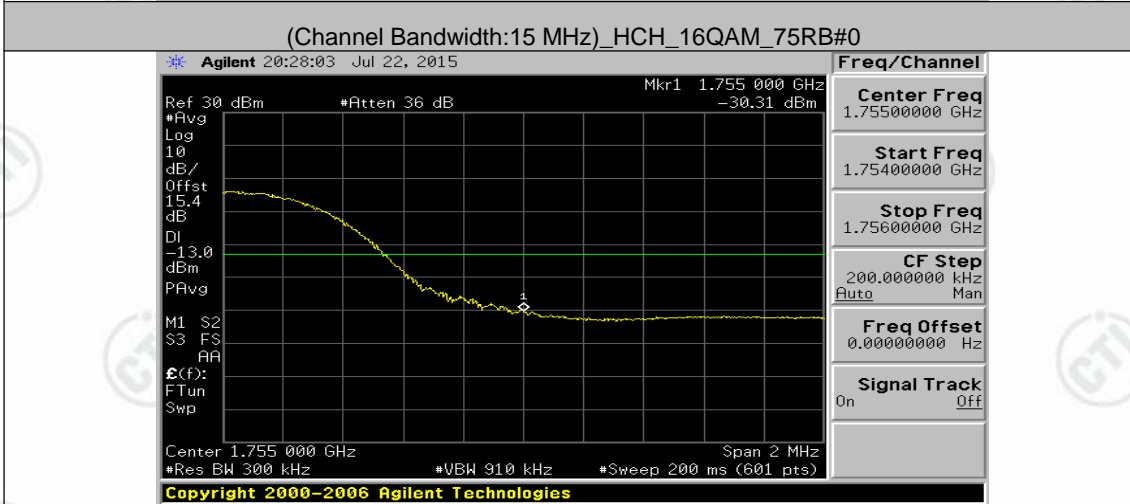
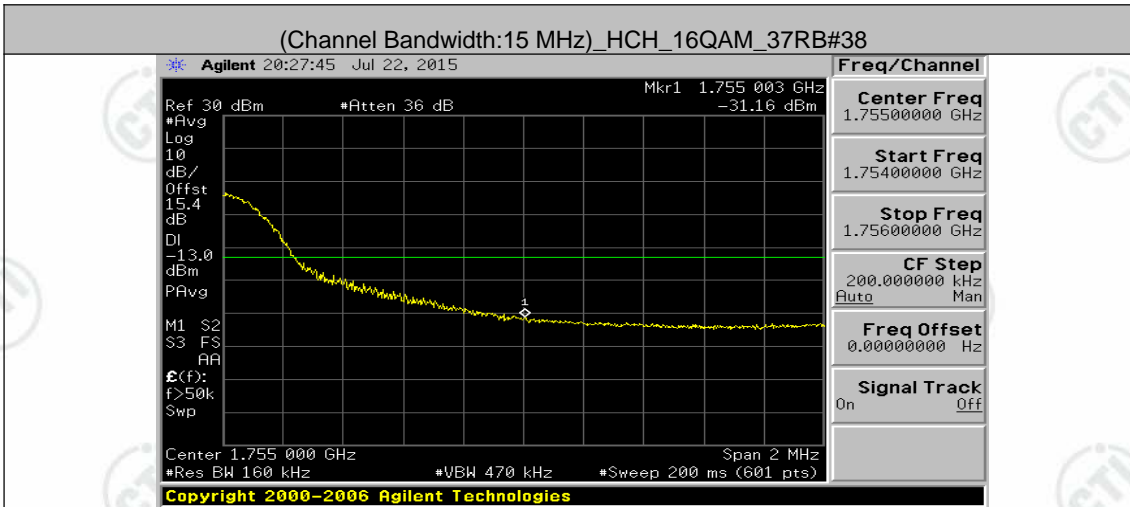




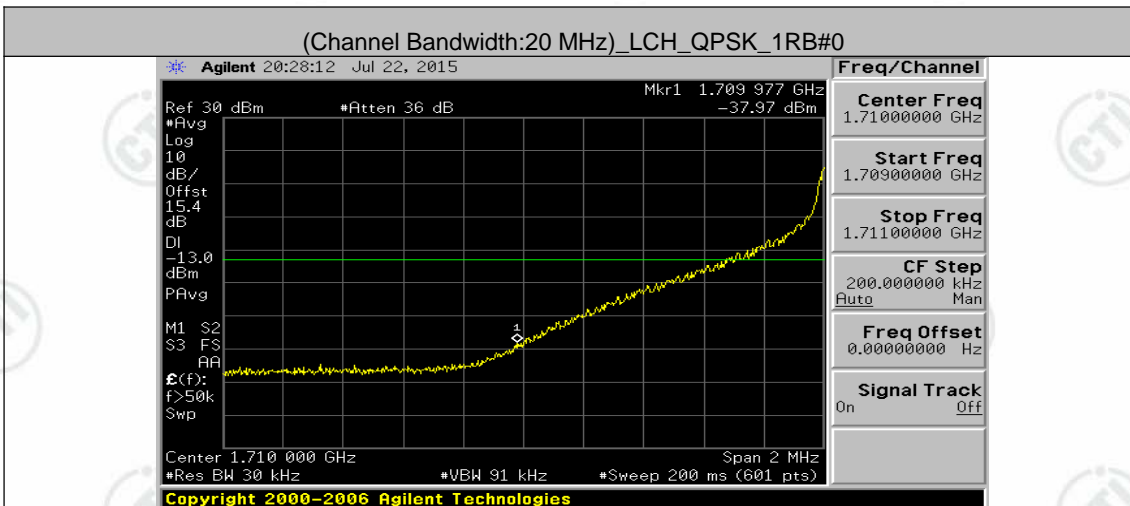


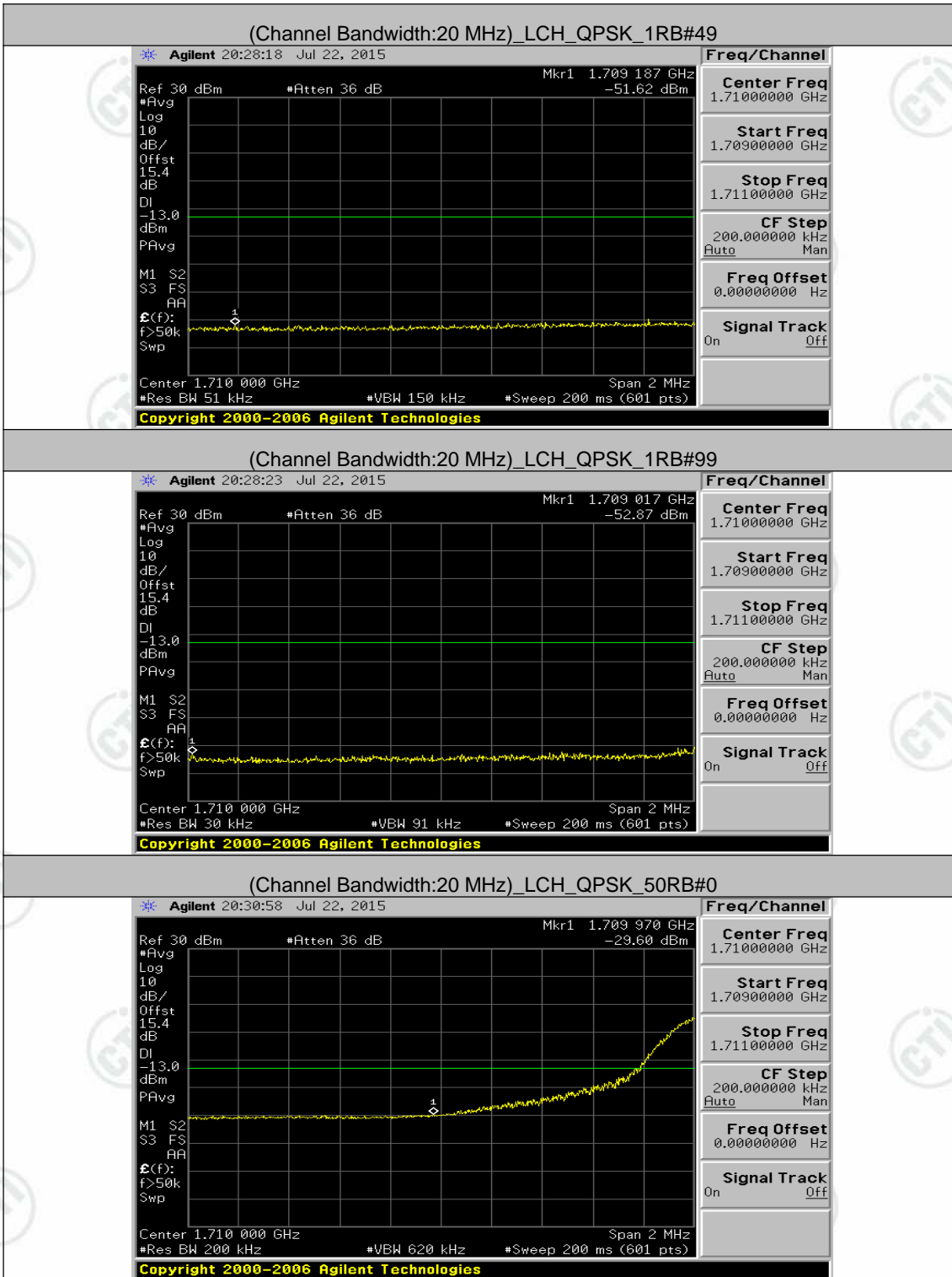


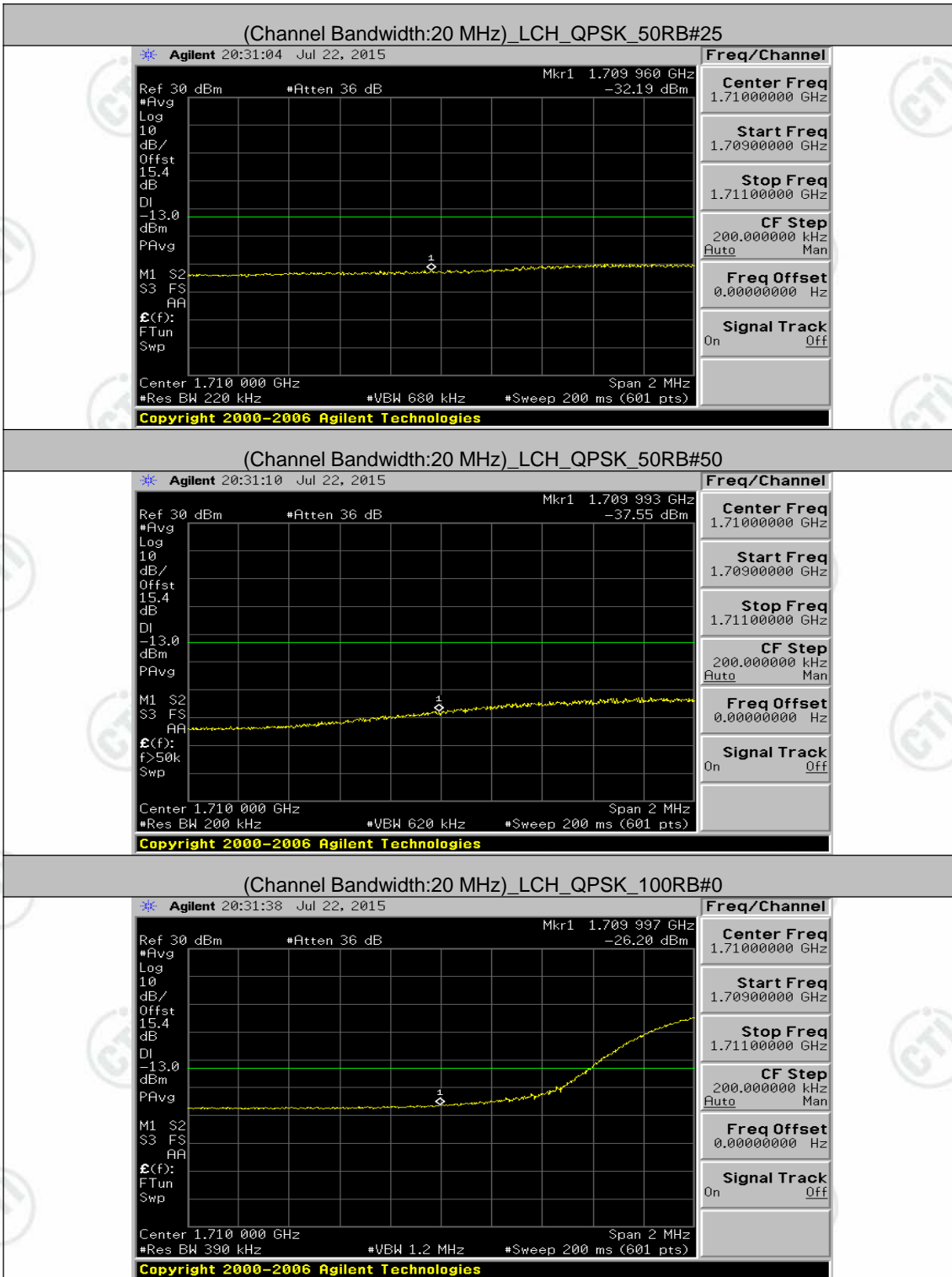


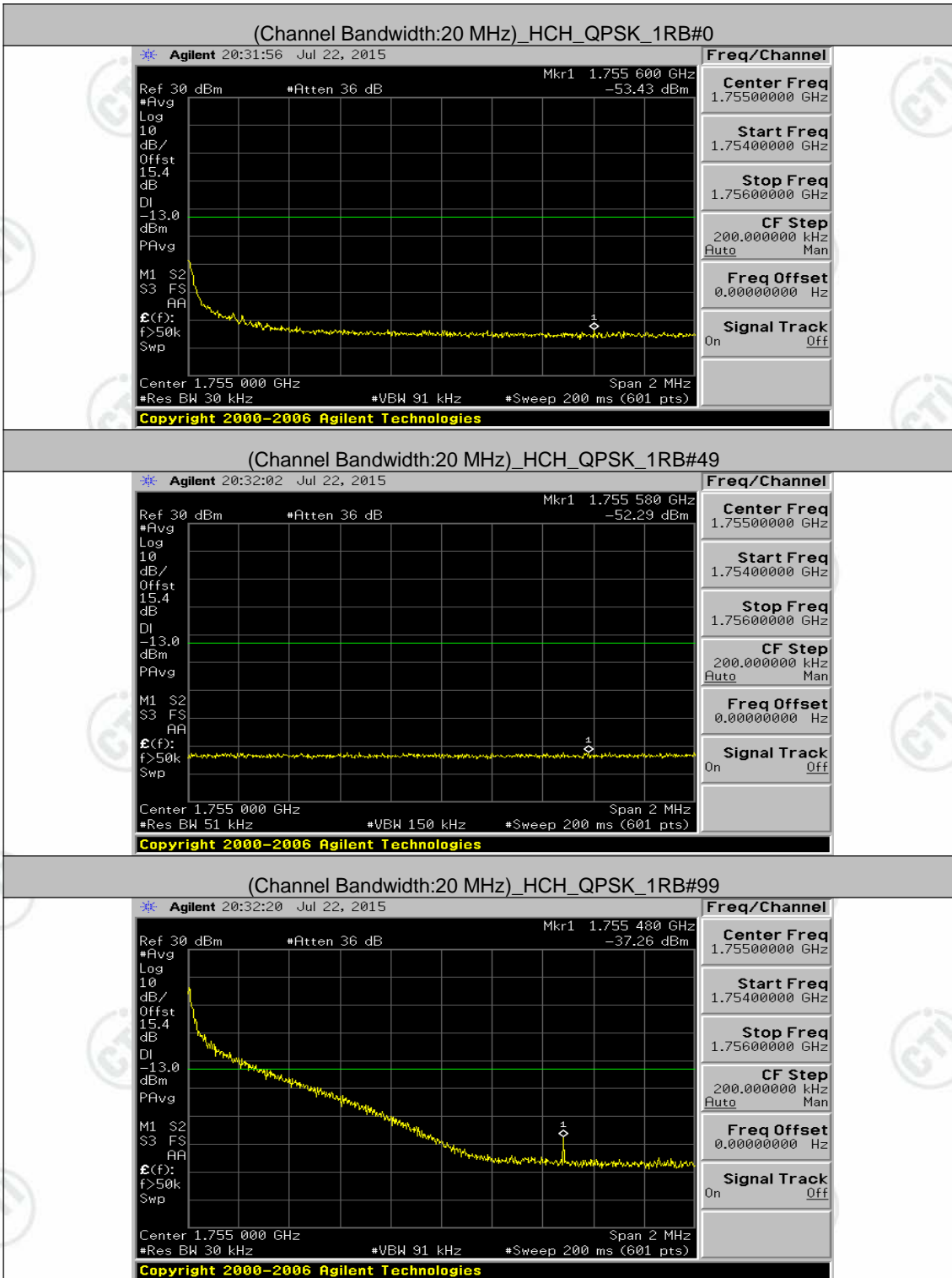


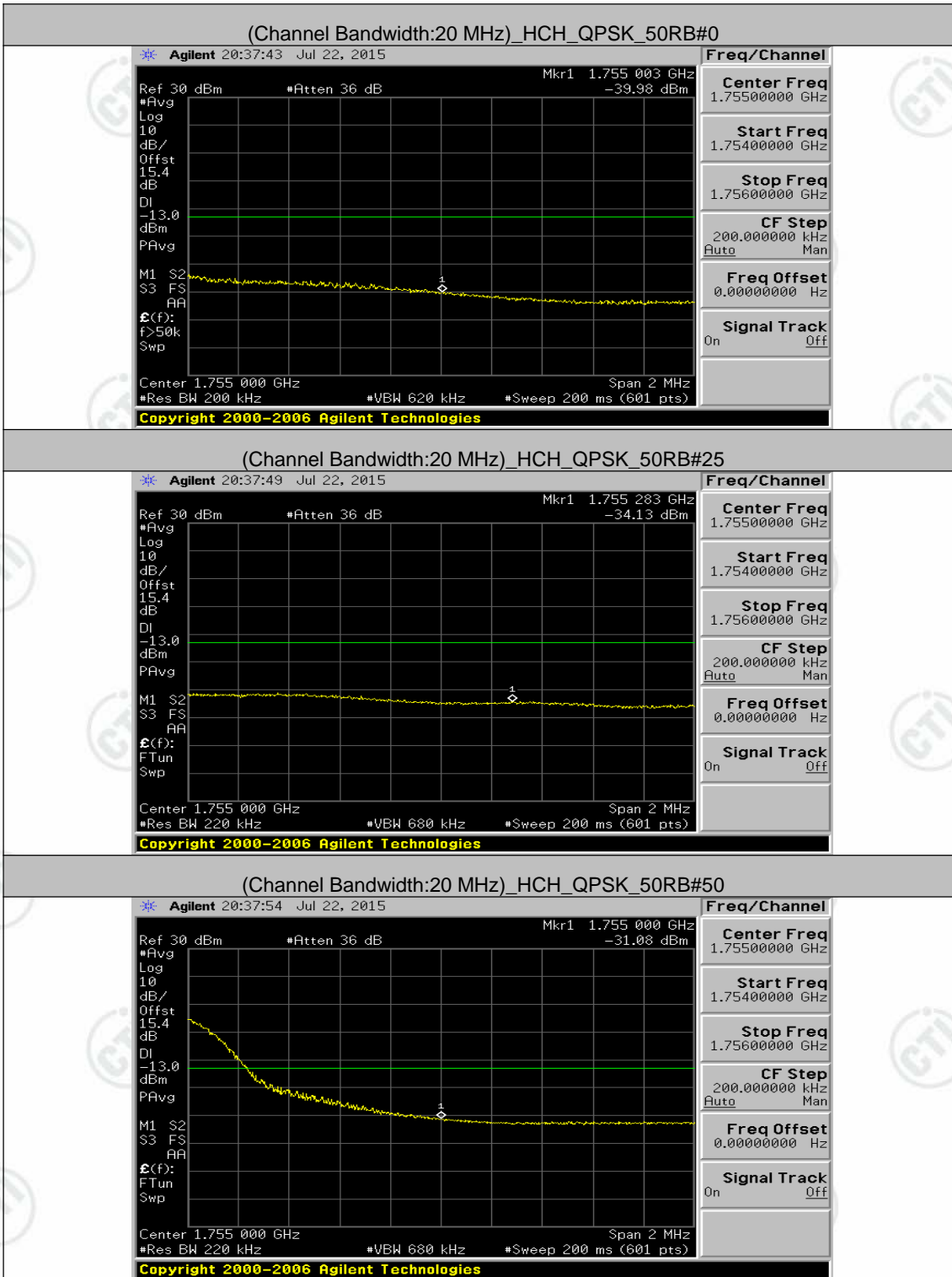
Channel Bandwidth: 20 MHz



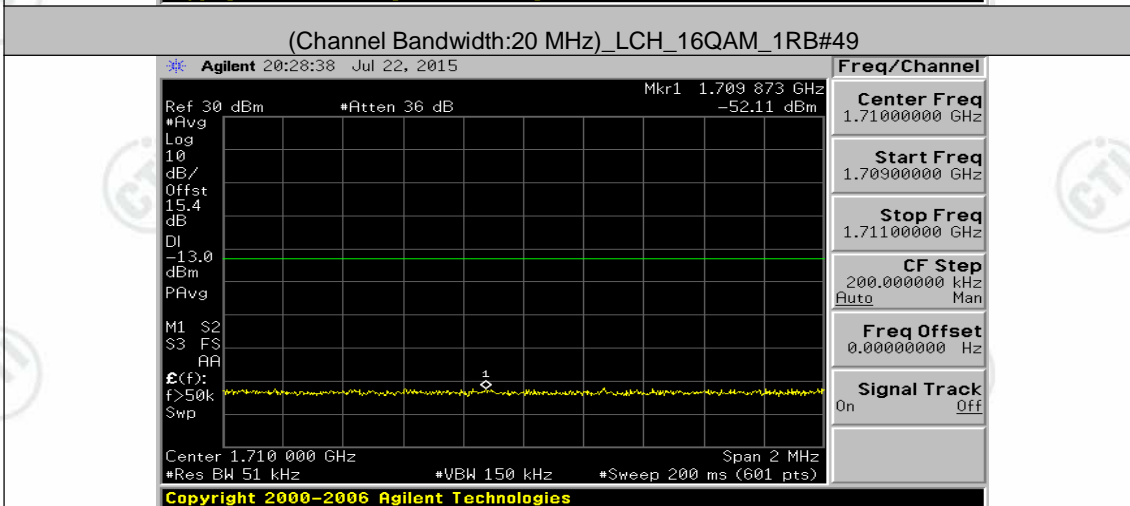
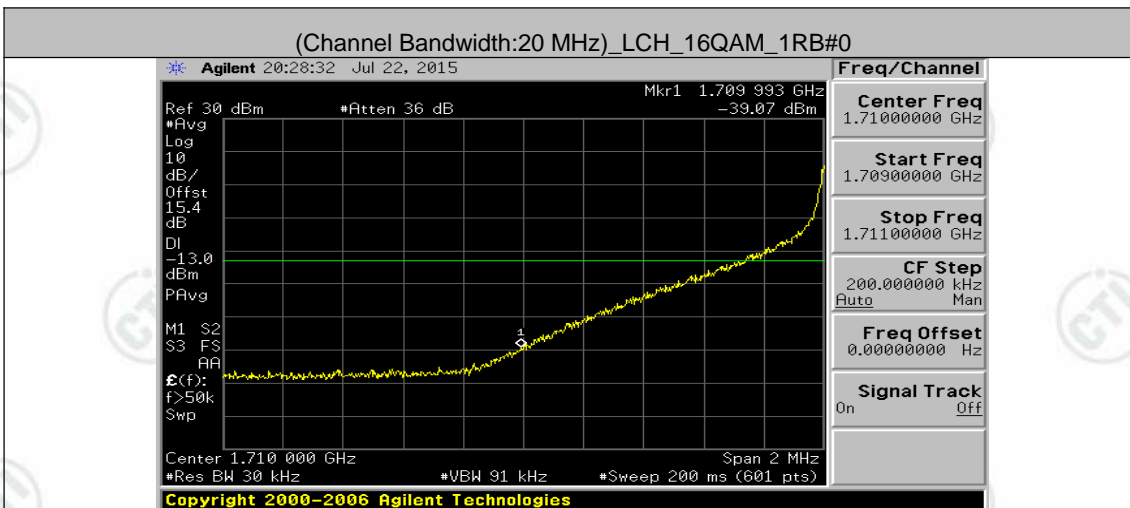
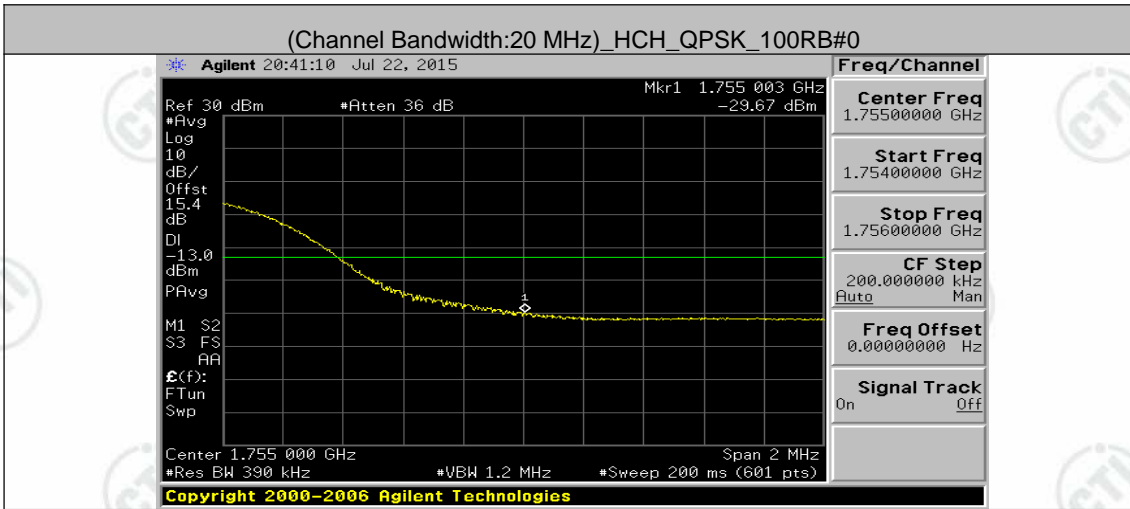


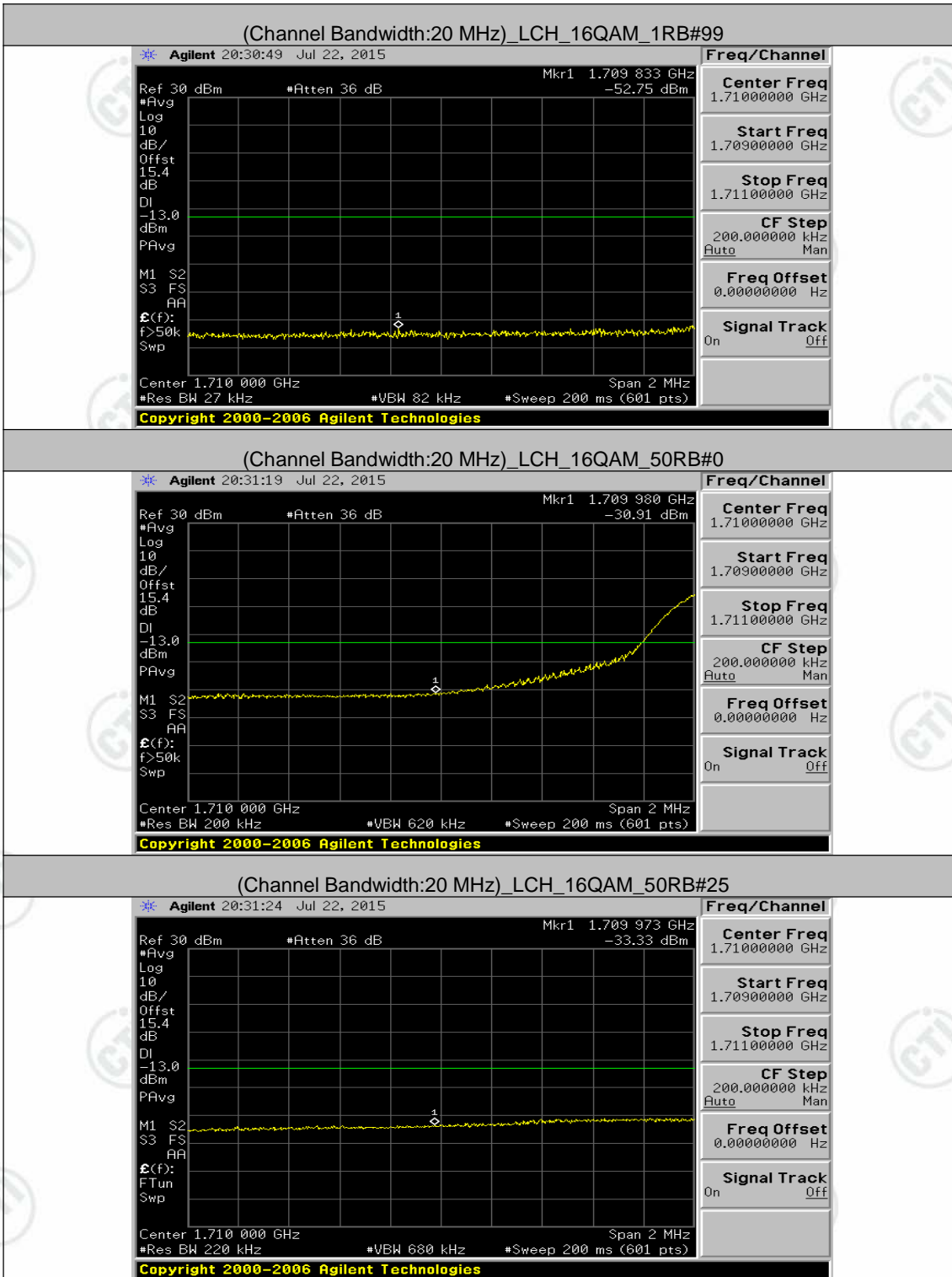


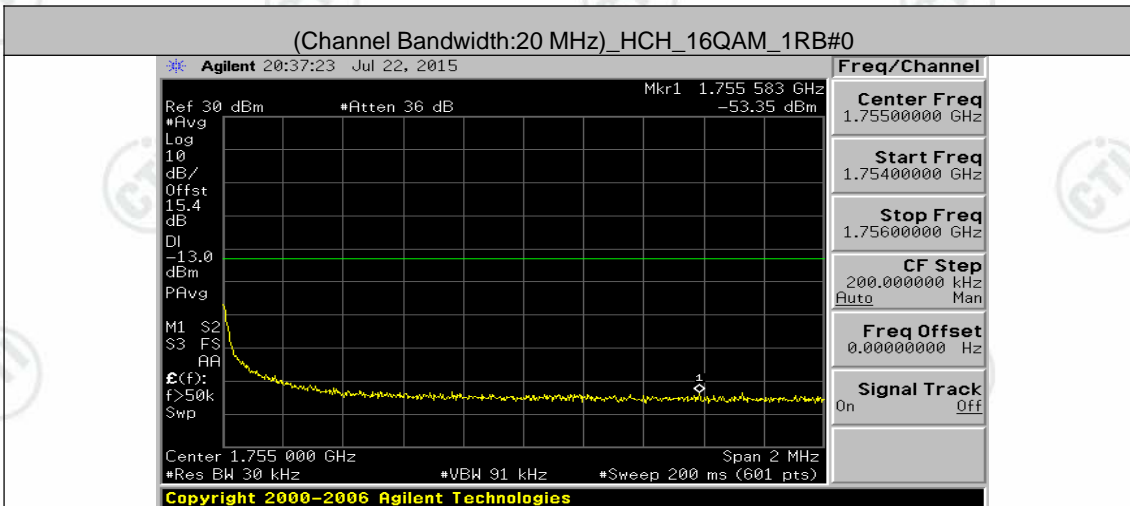
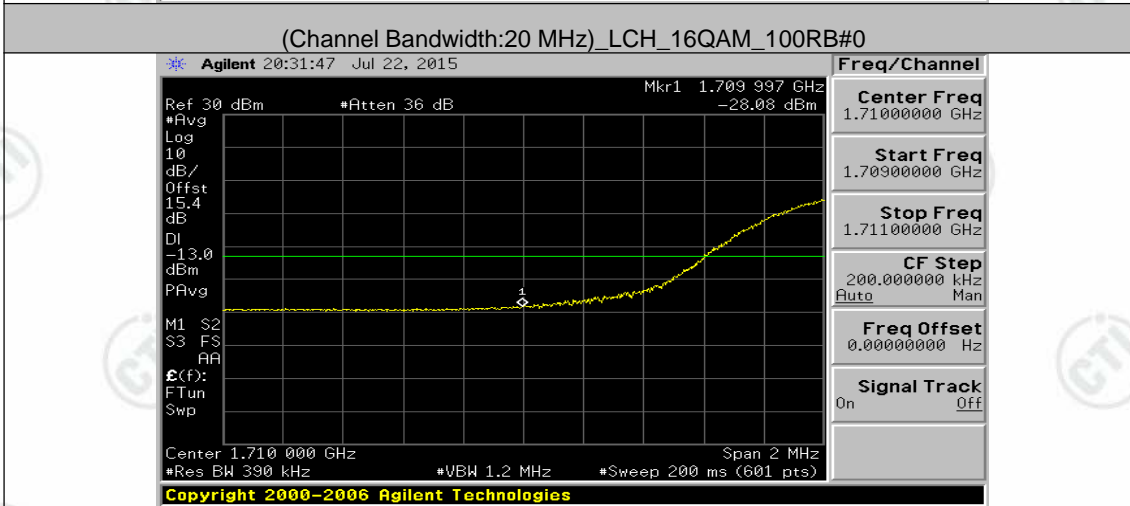
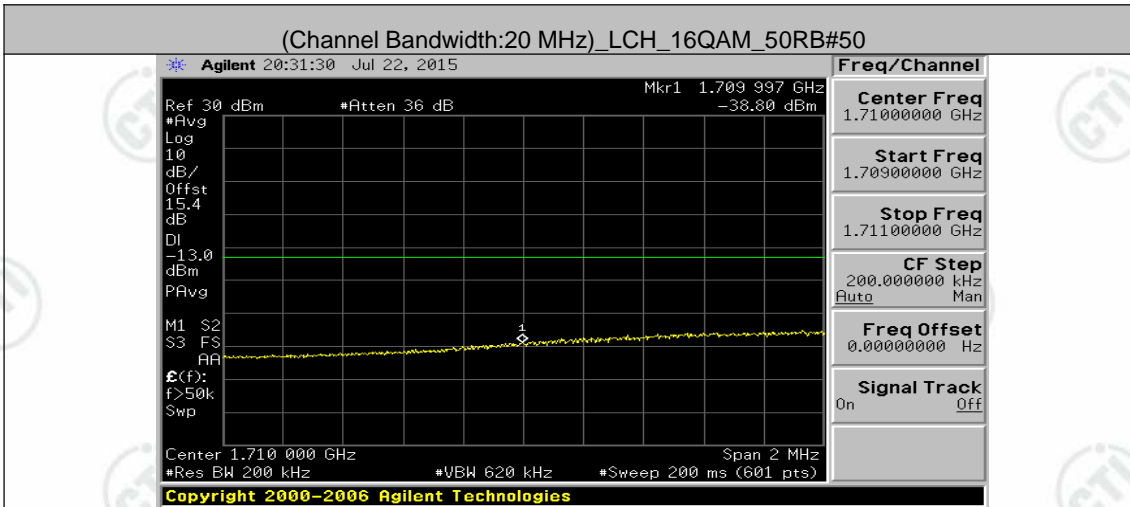


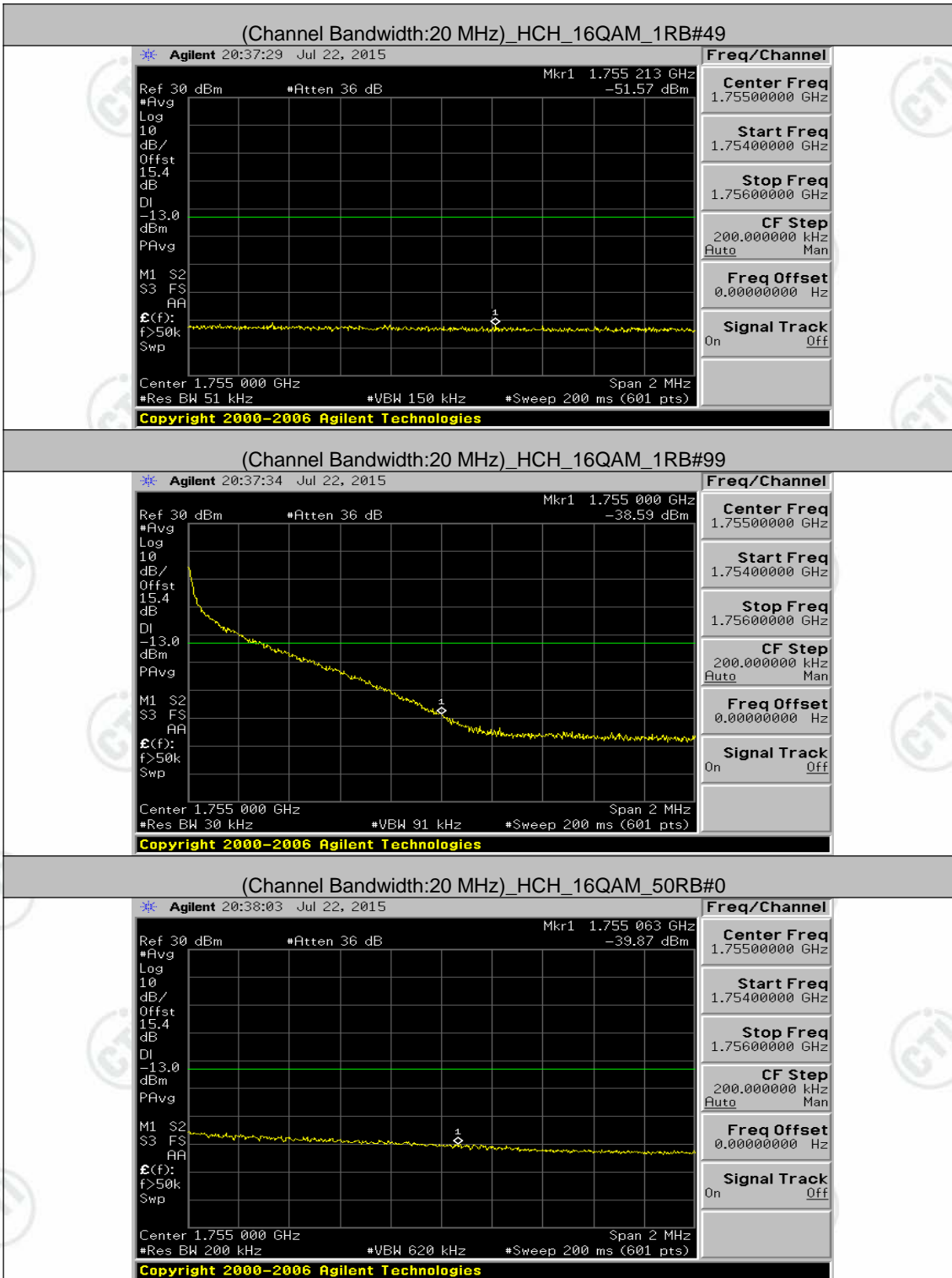


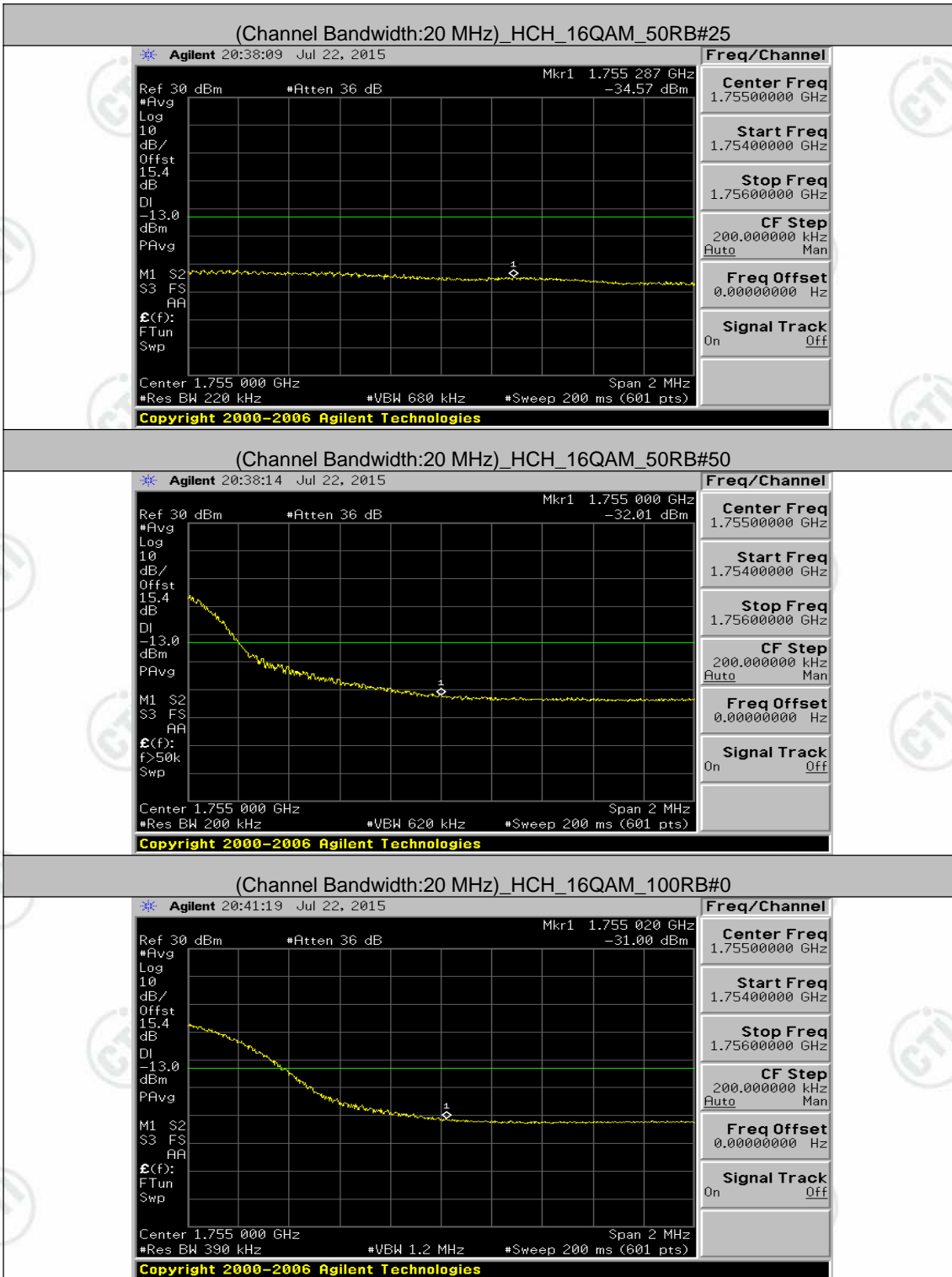








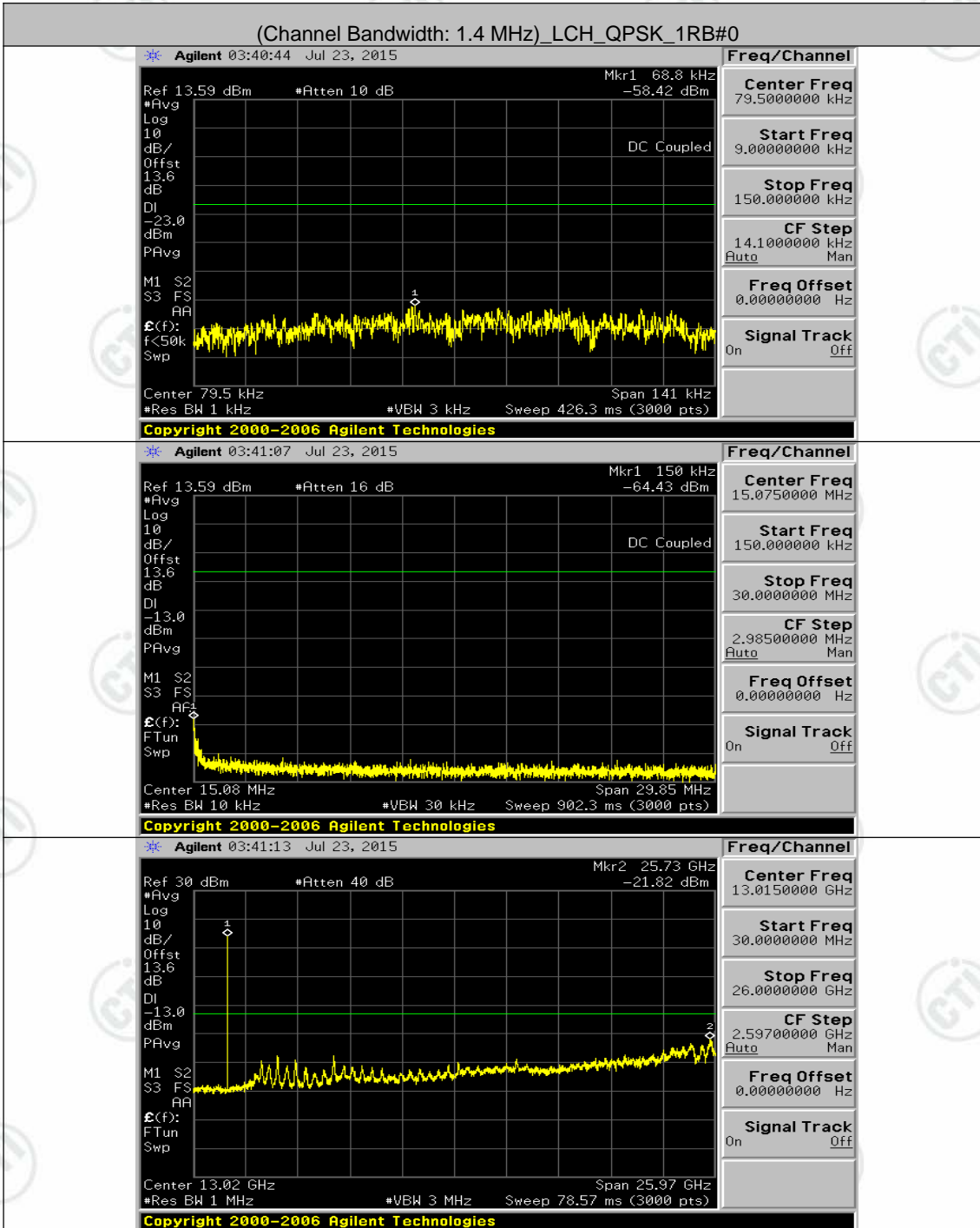


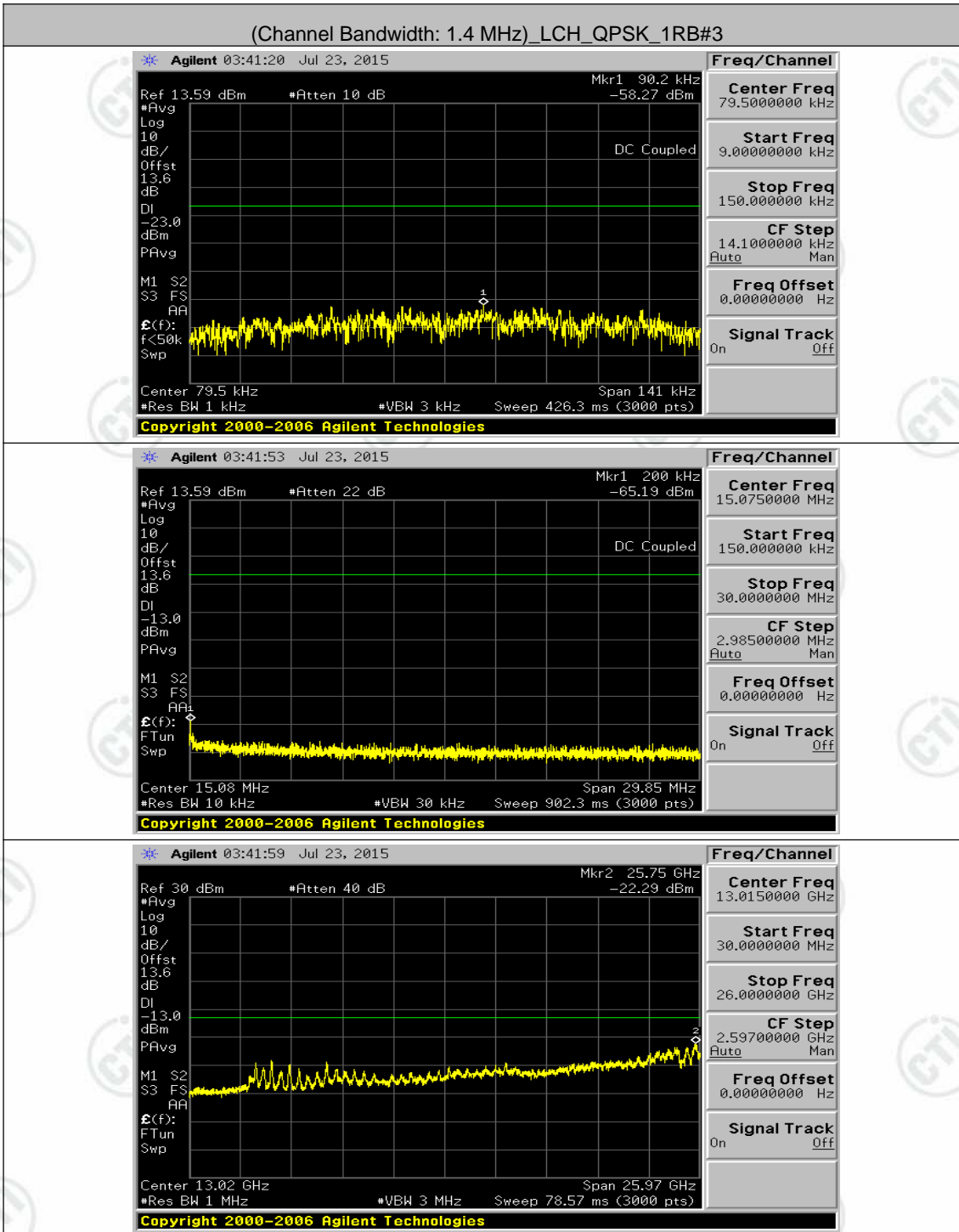


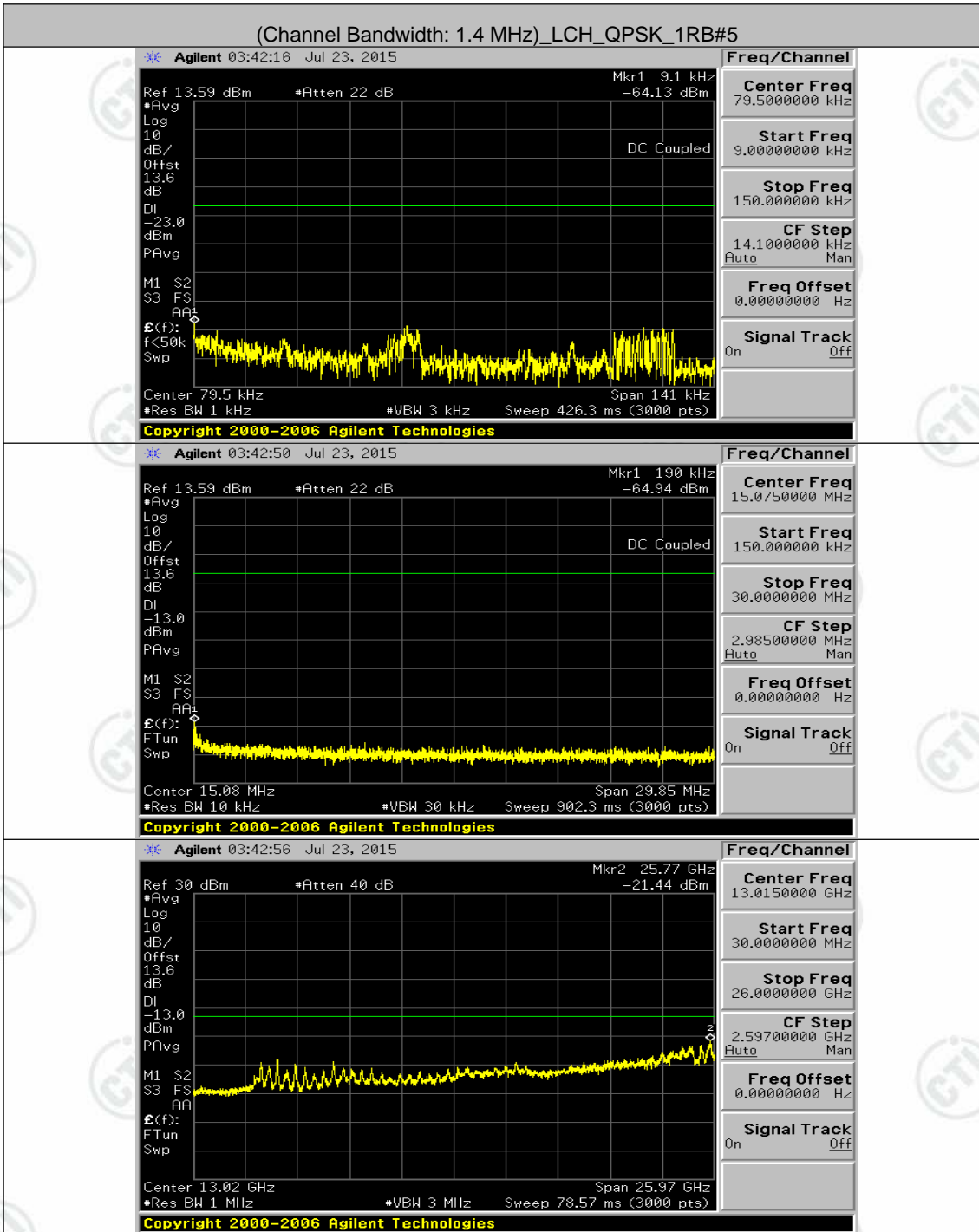
## Appendix E: Conducted Spurious Emission

### Test Graphs

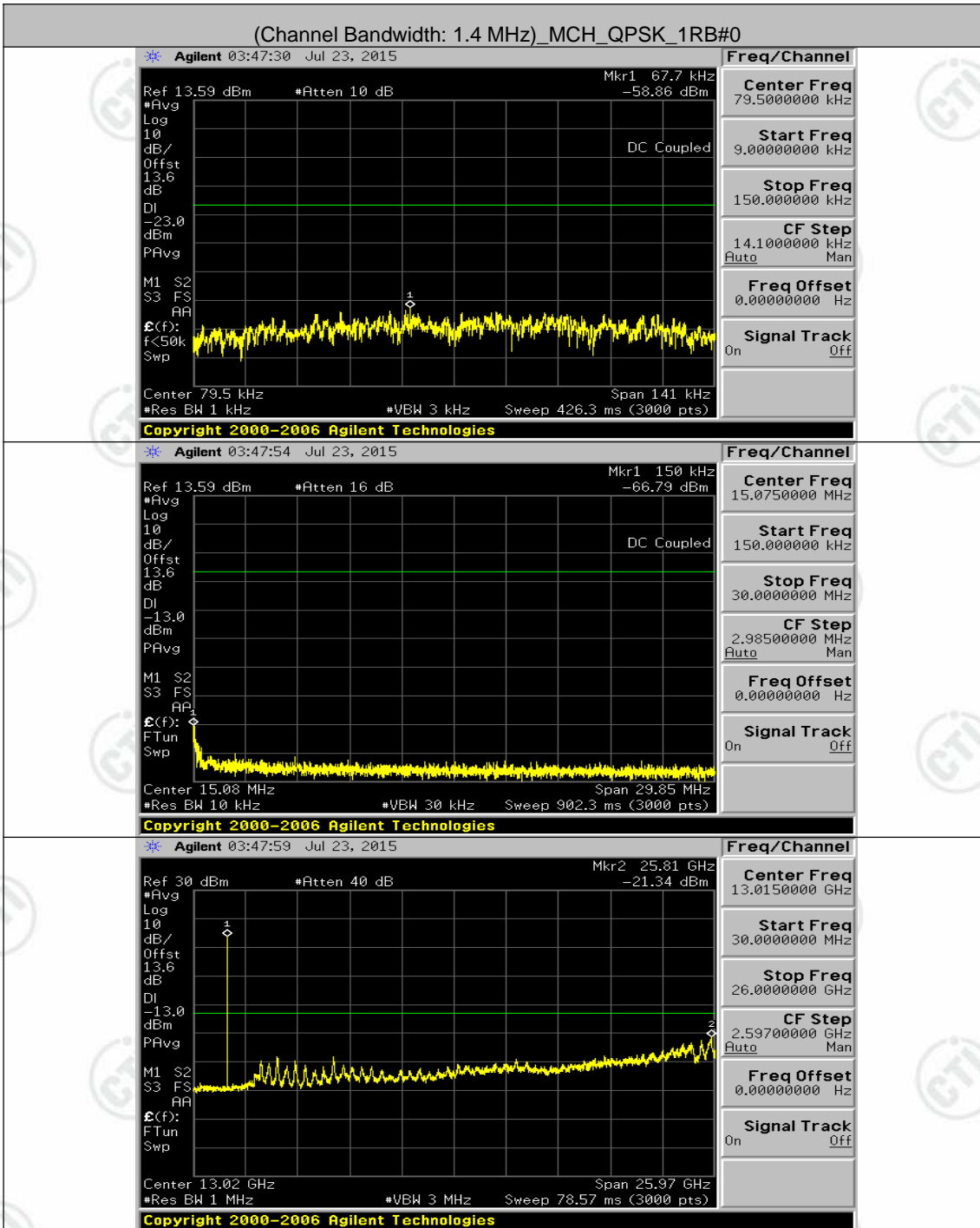
Channel Bandwidth: 1.4 MHz

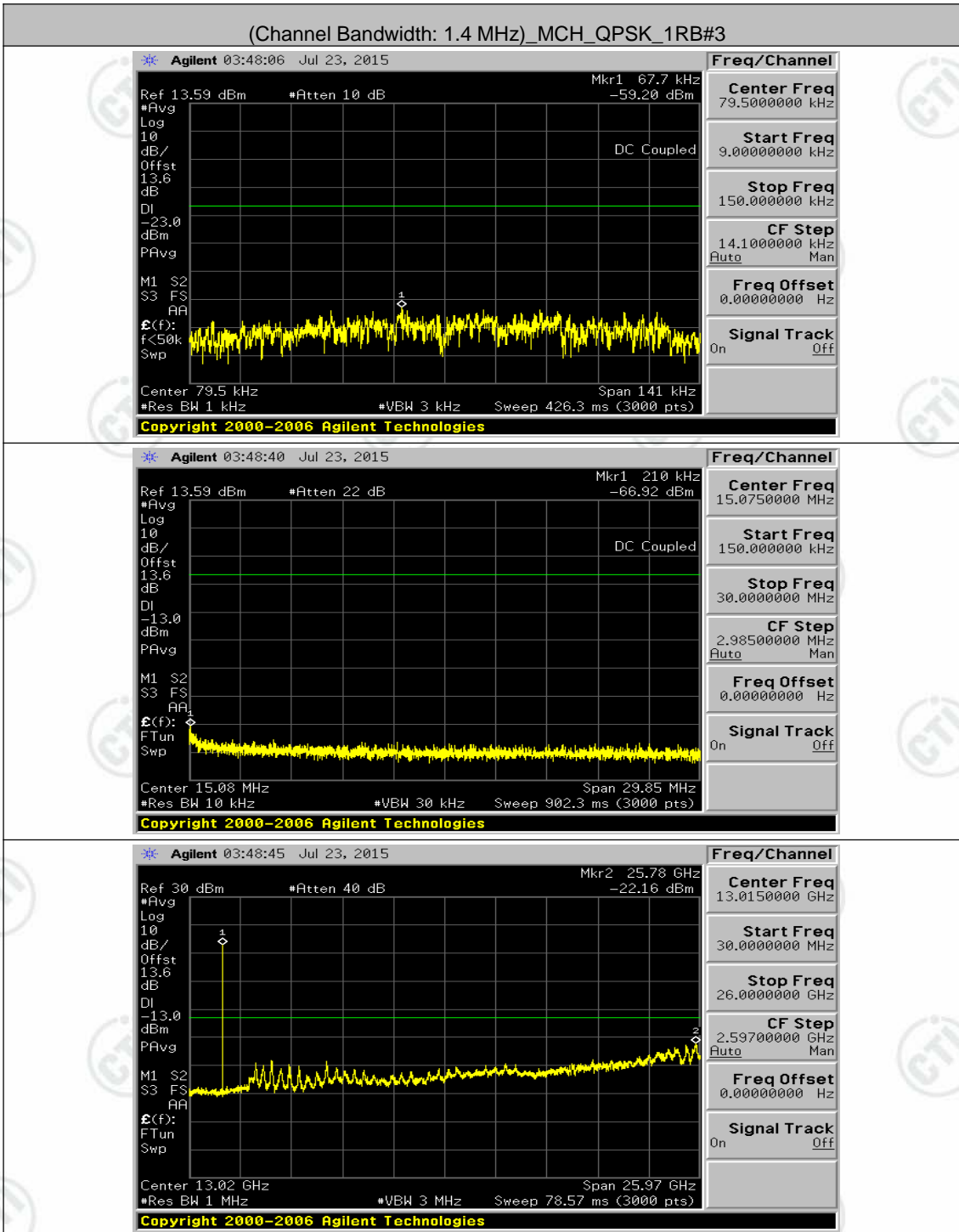


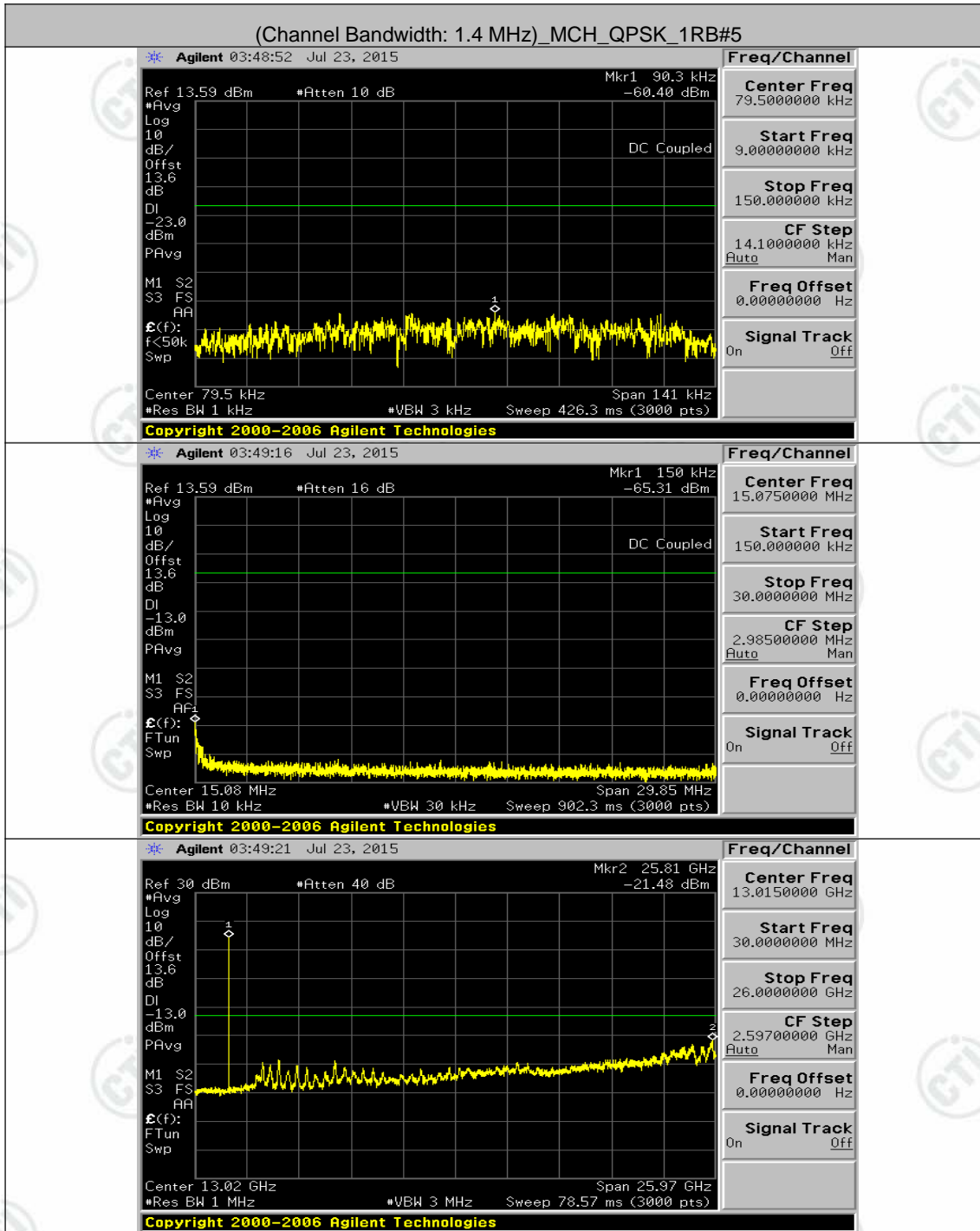


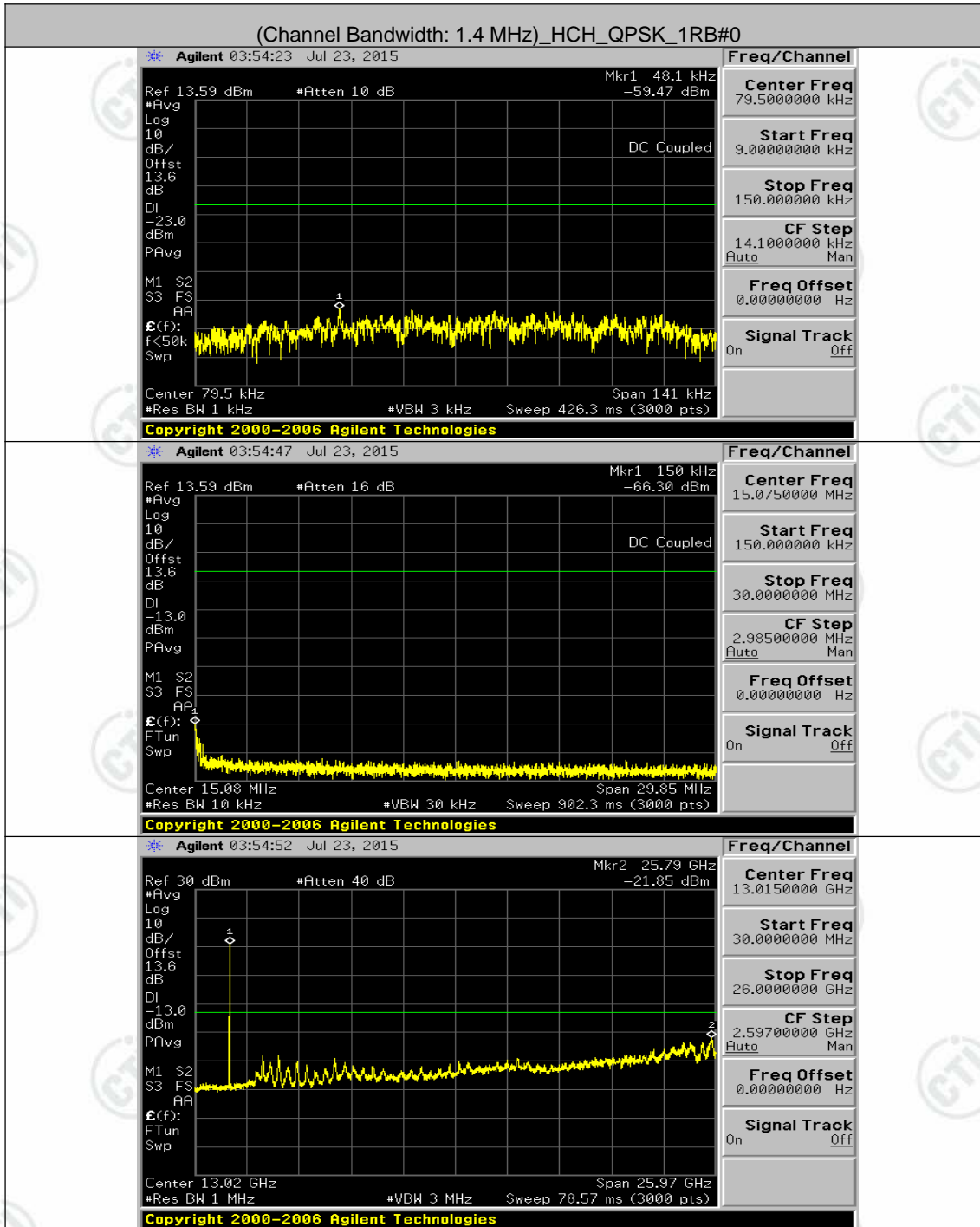


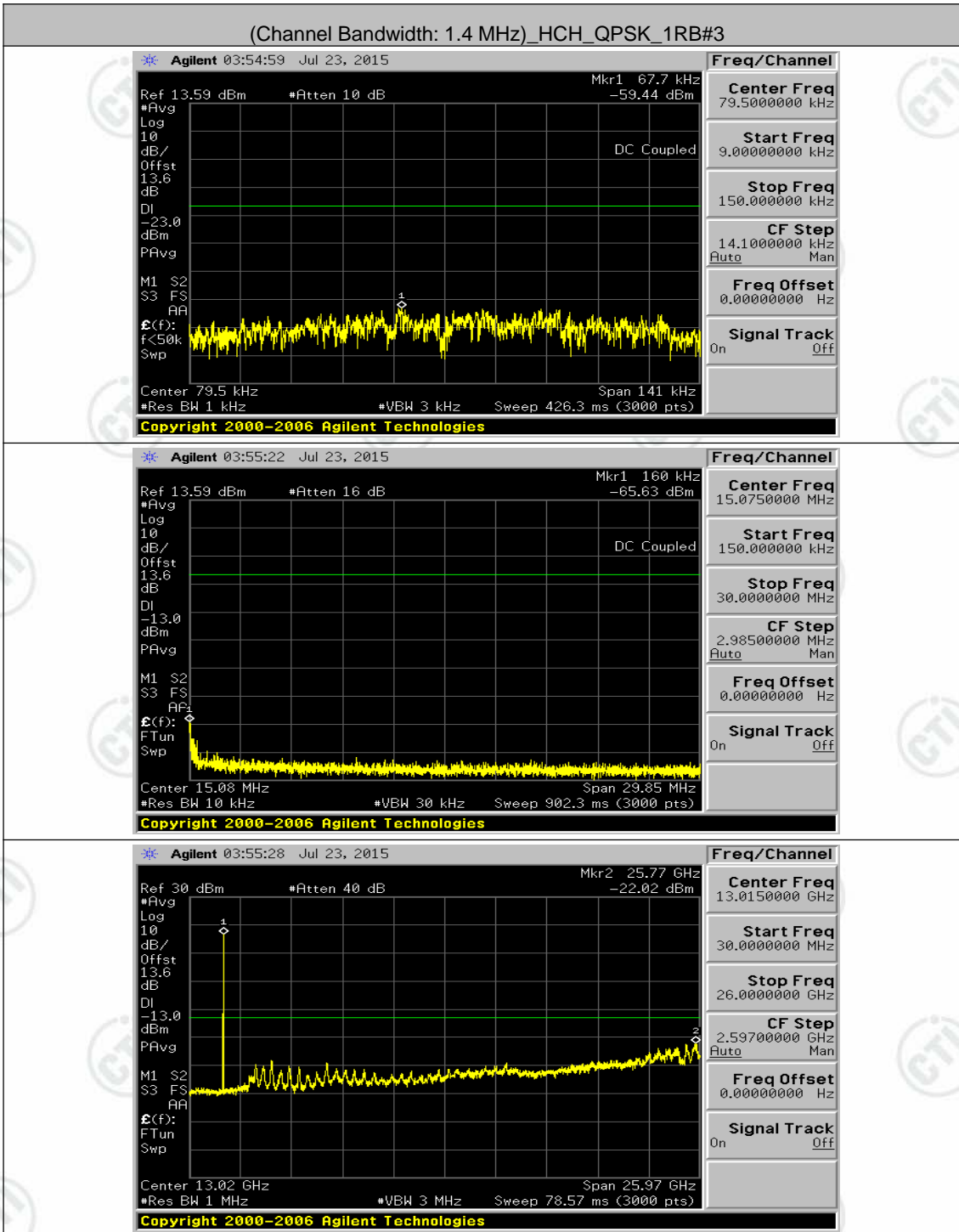


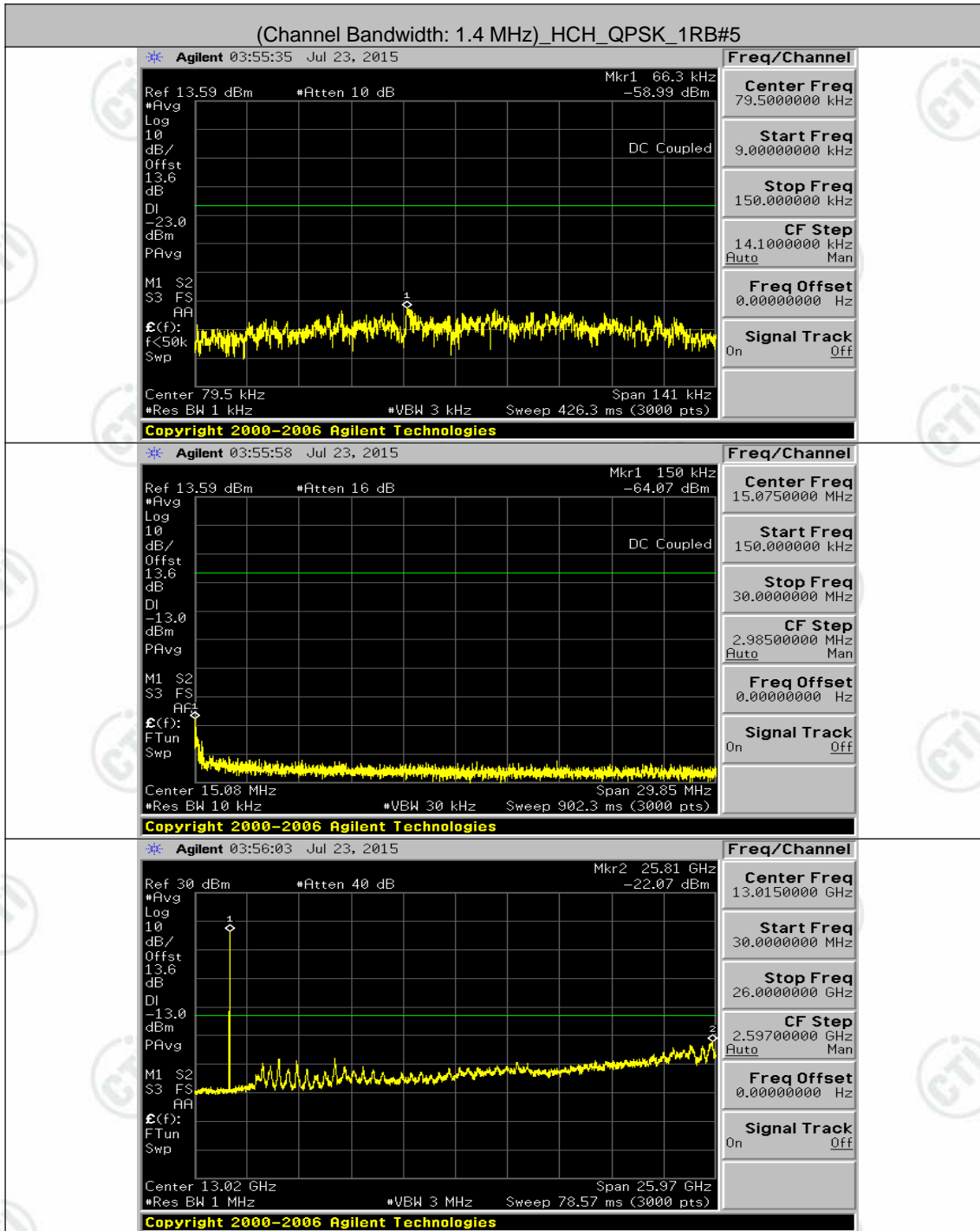


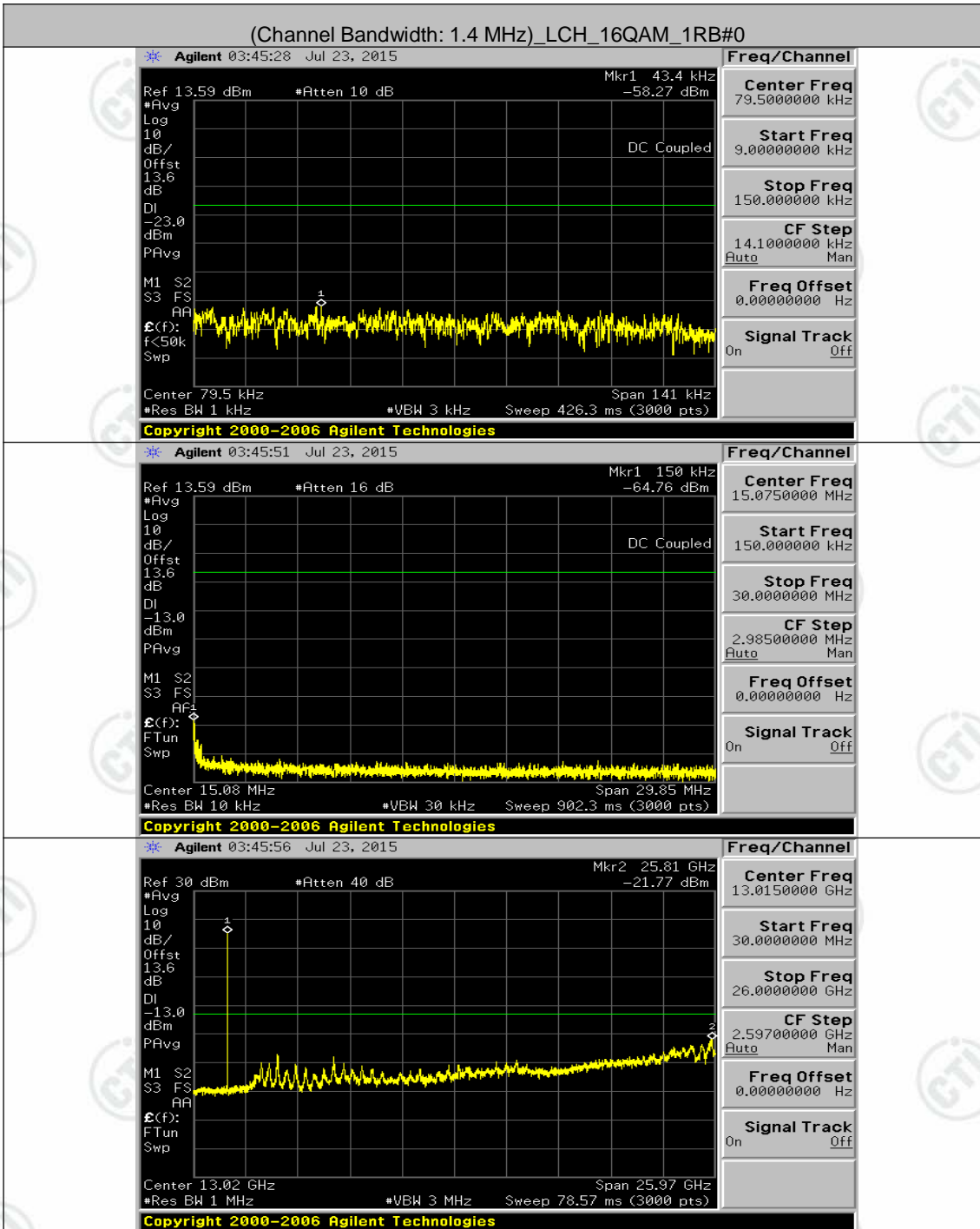


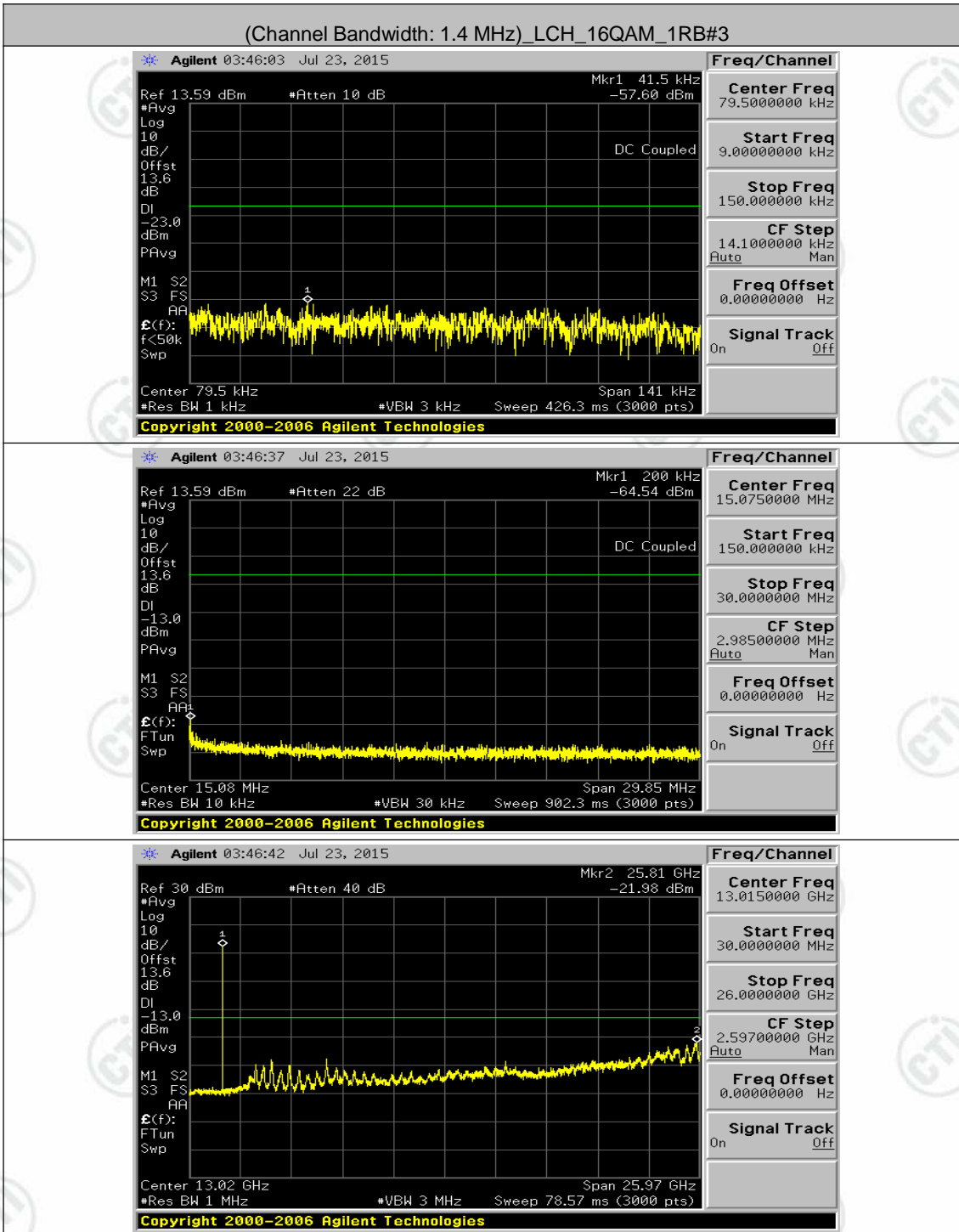




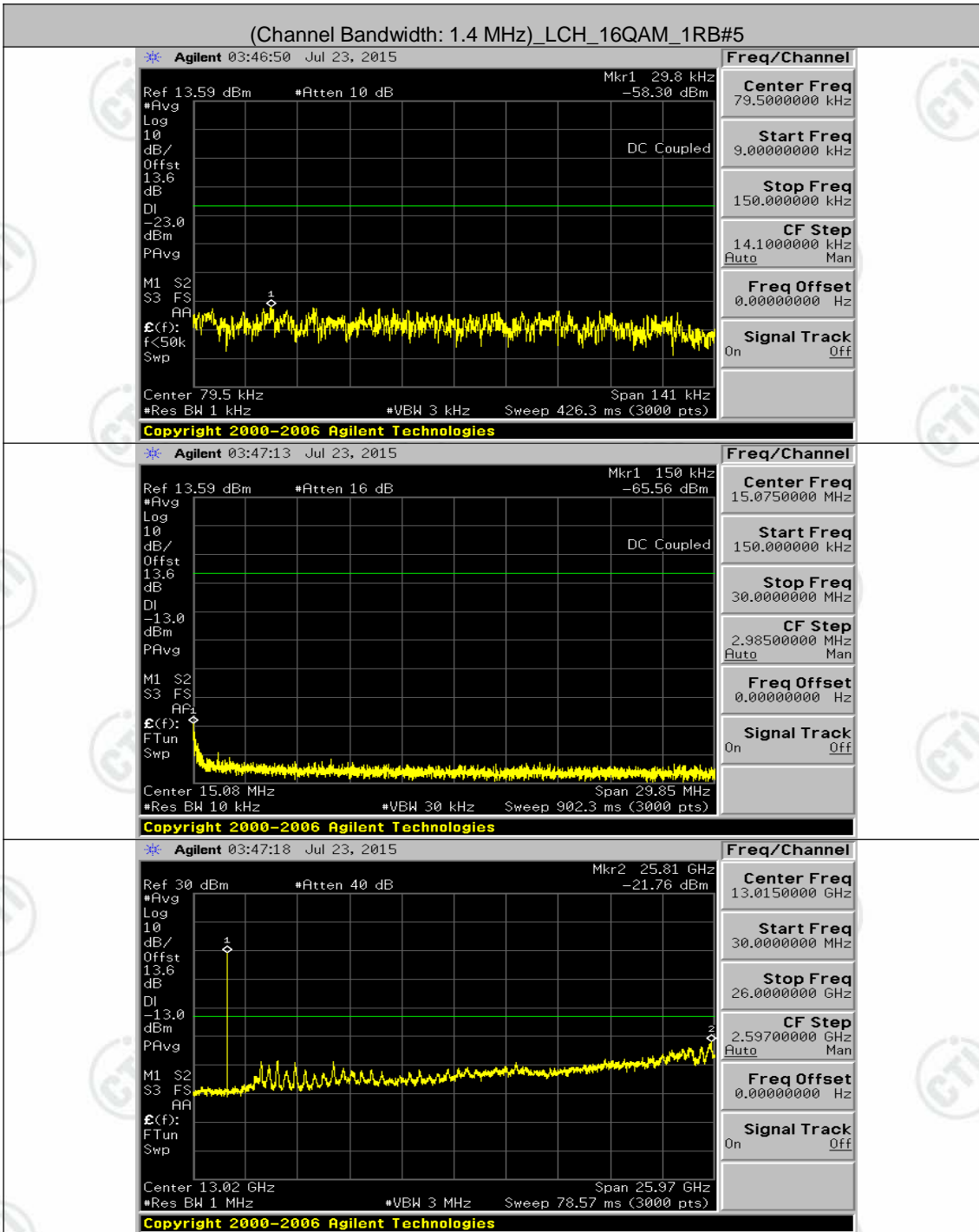


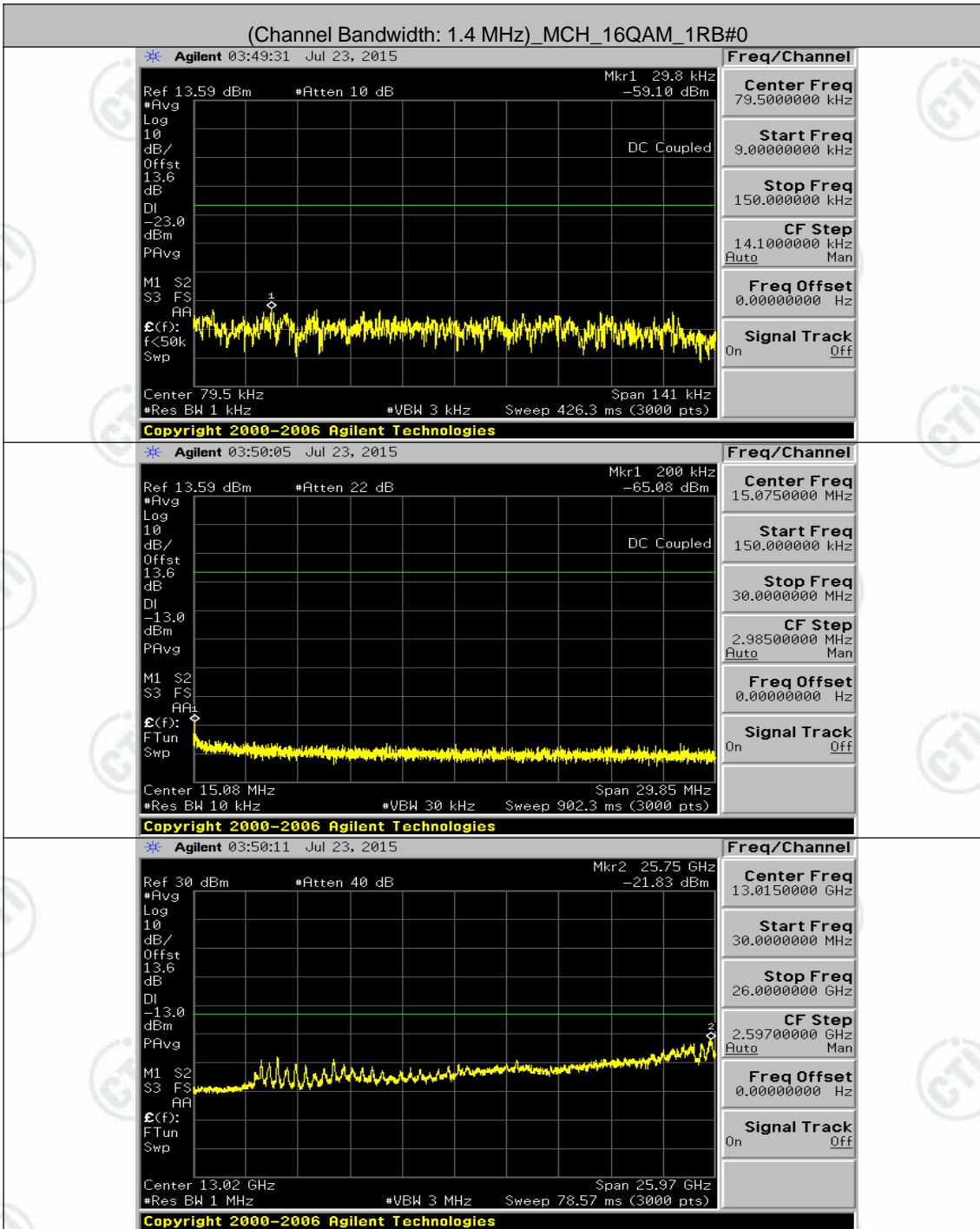


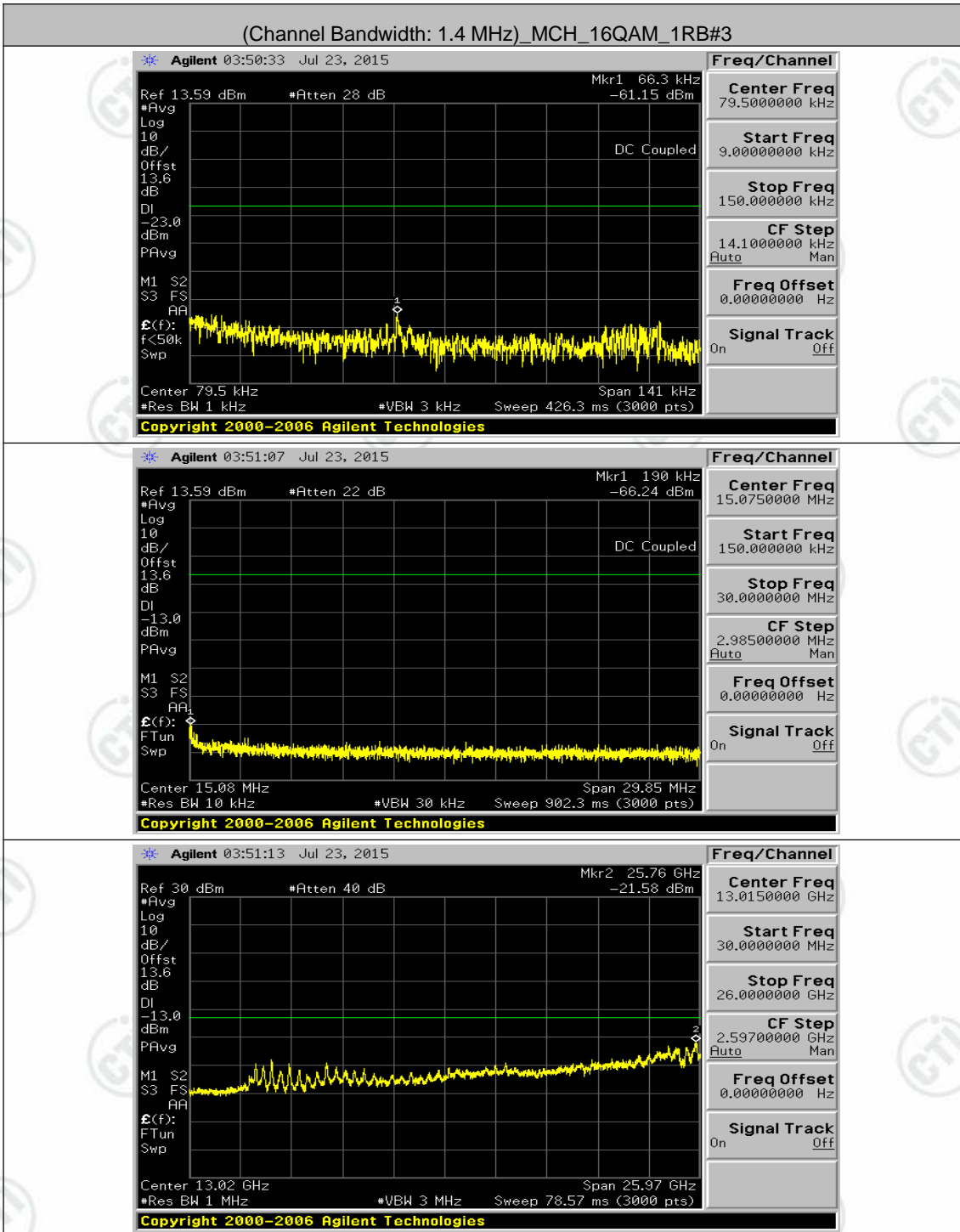


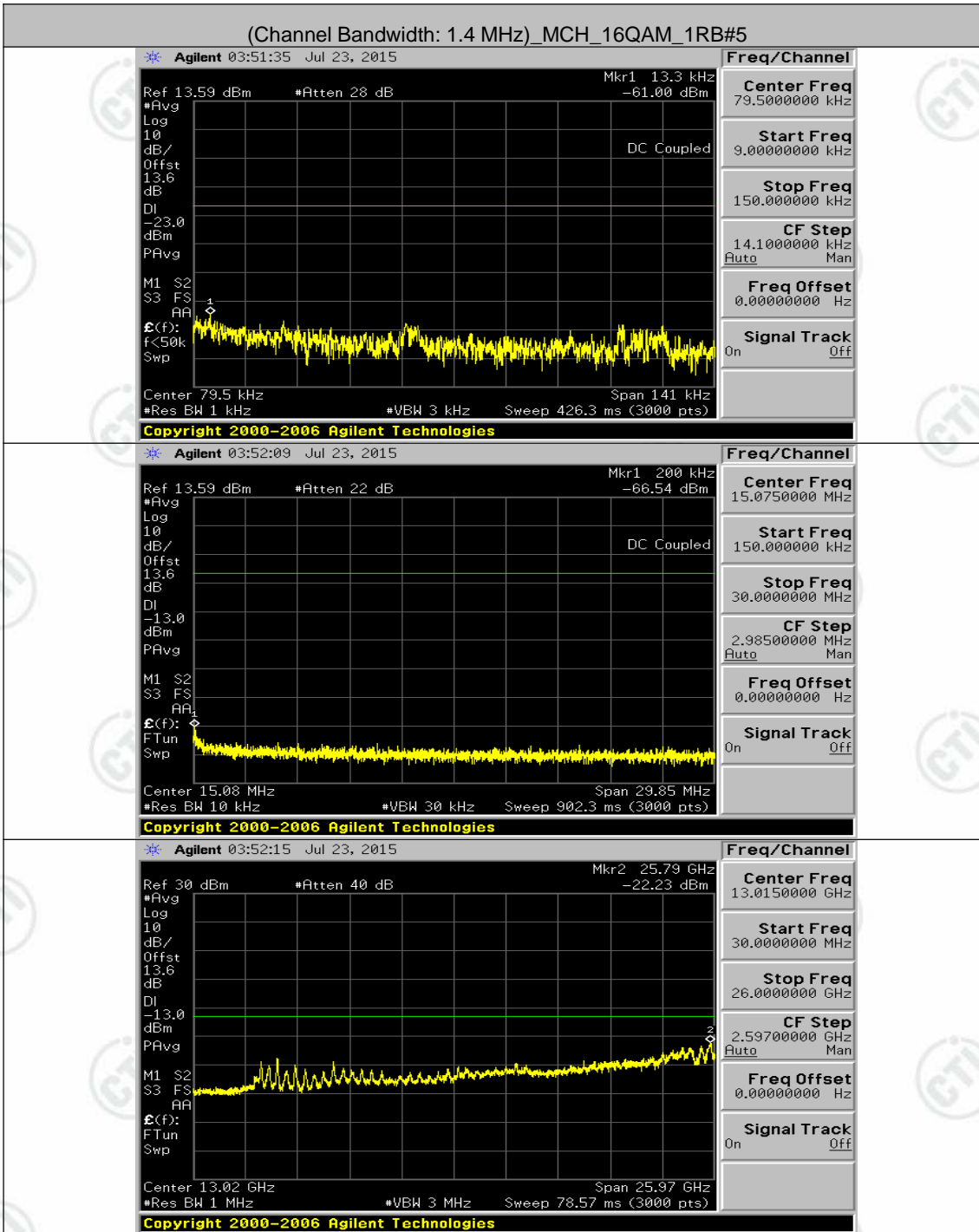


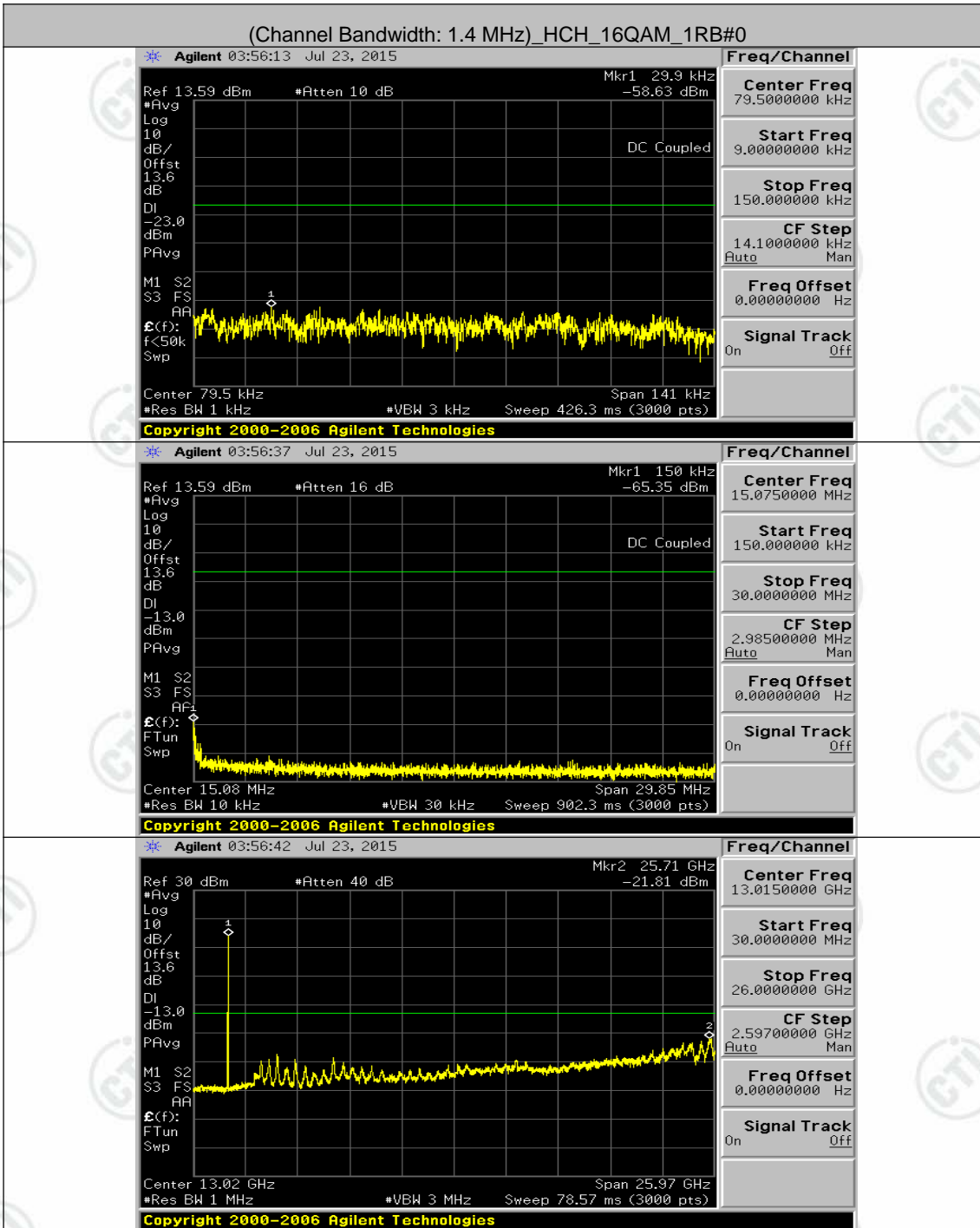


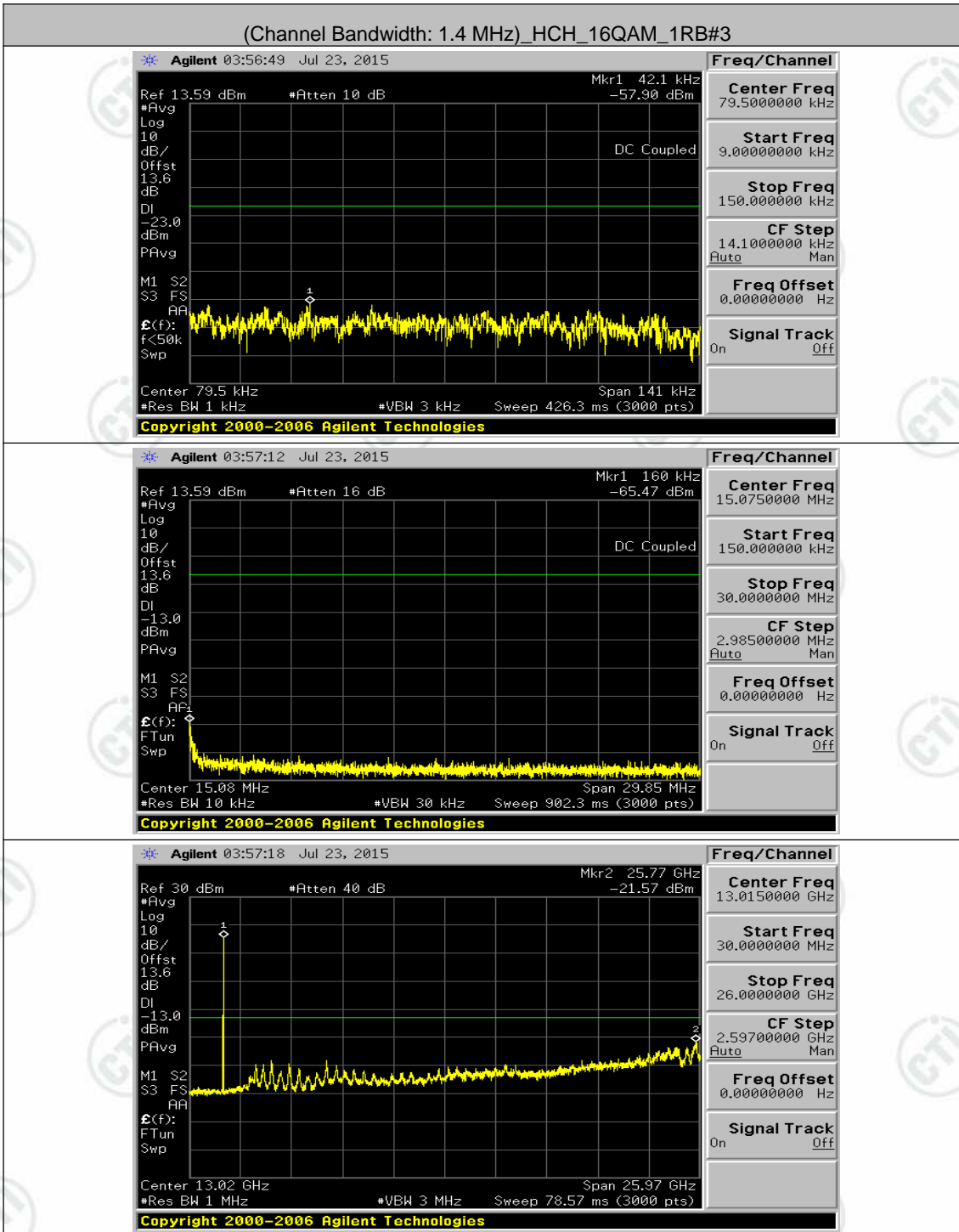


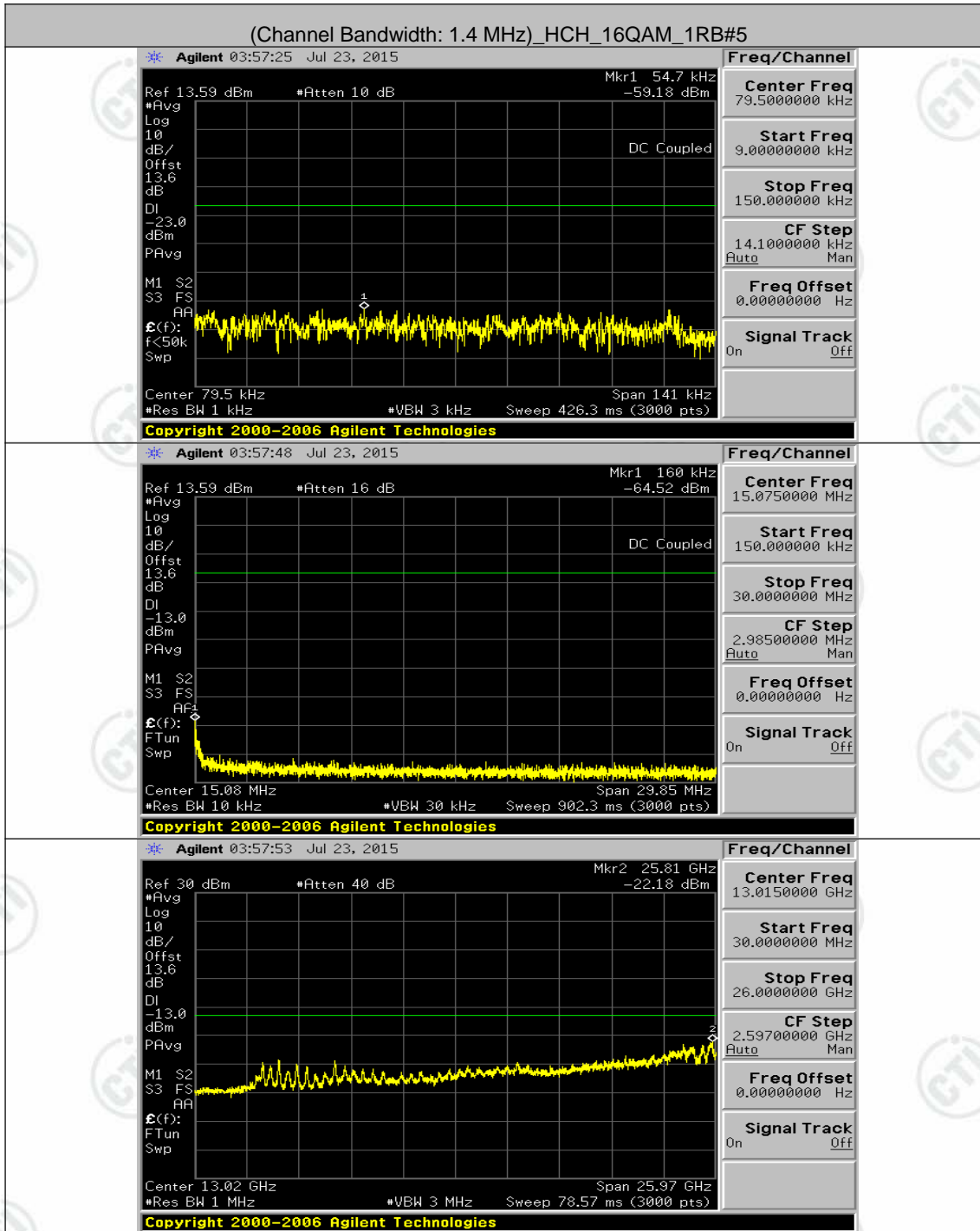




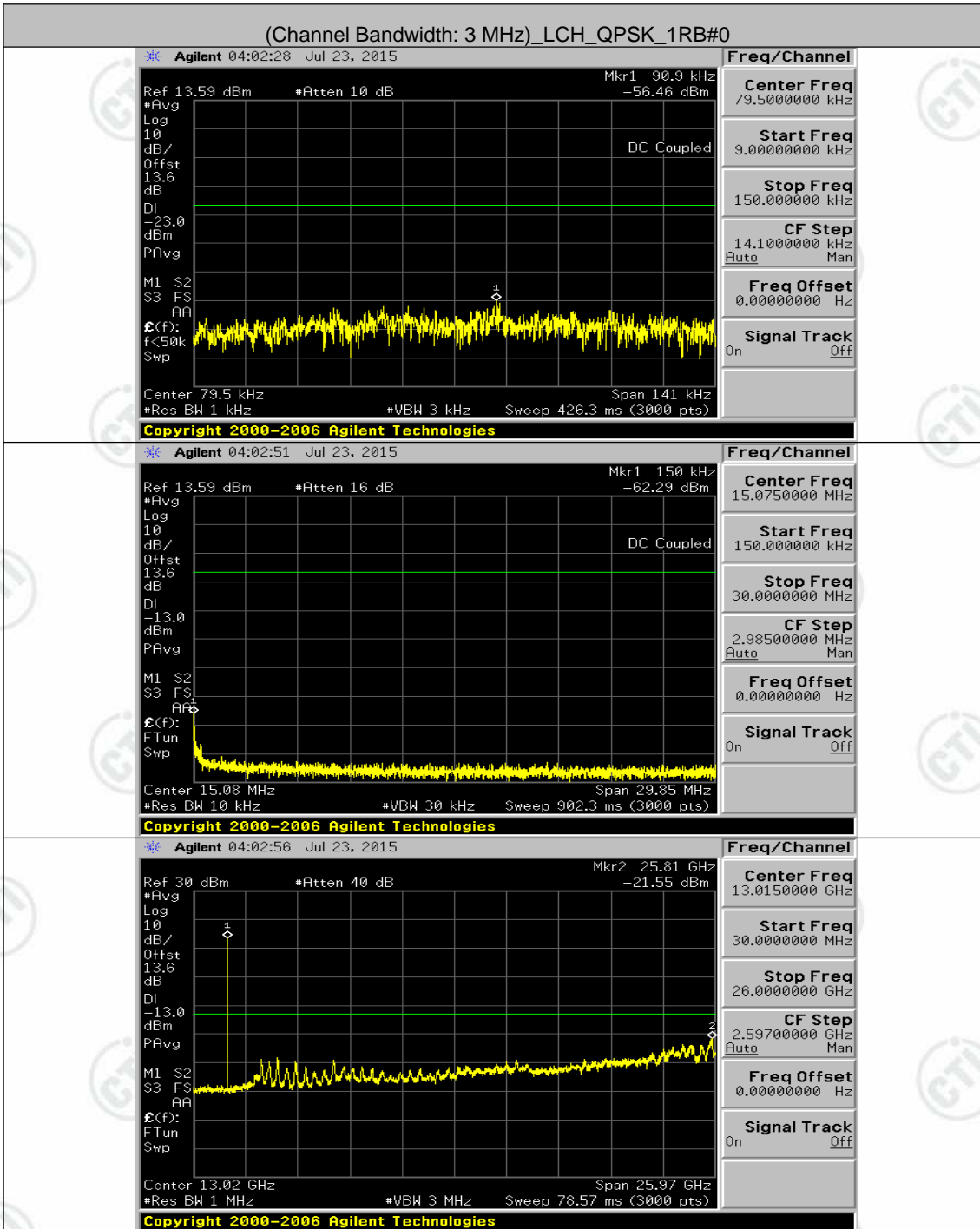




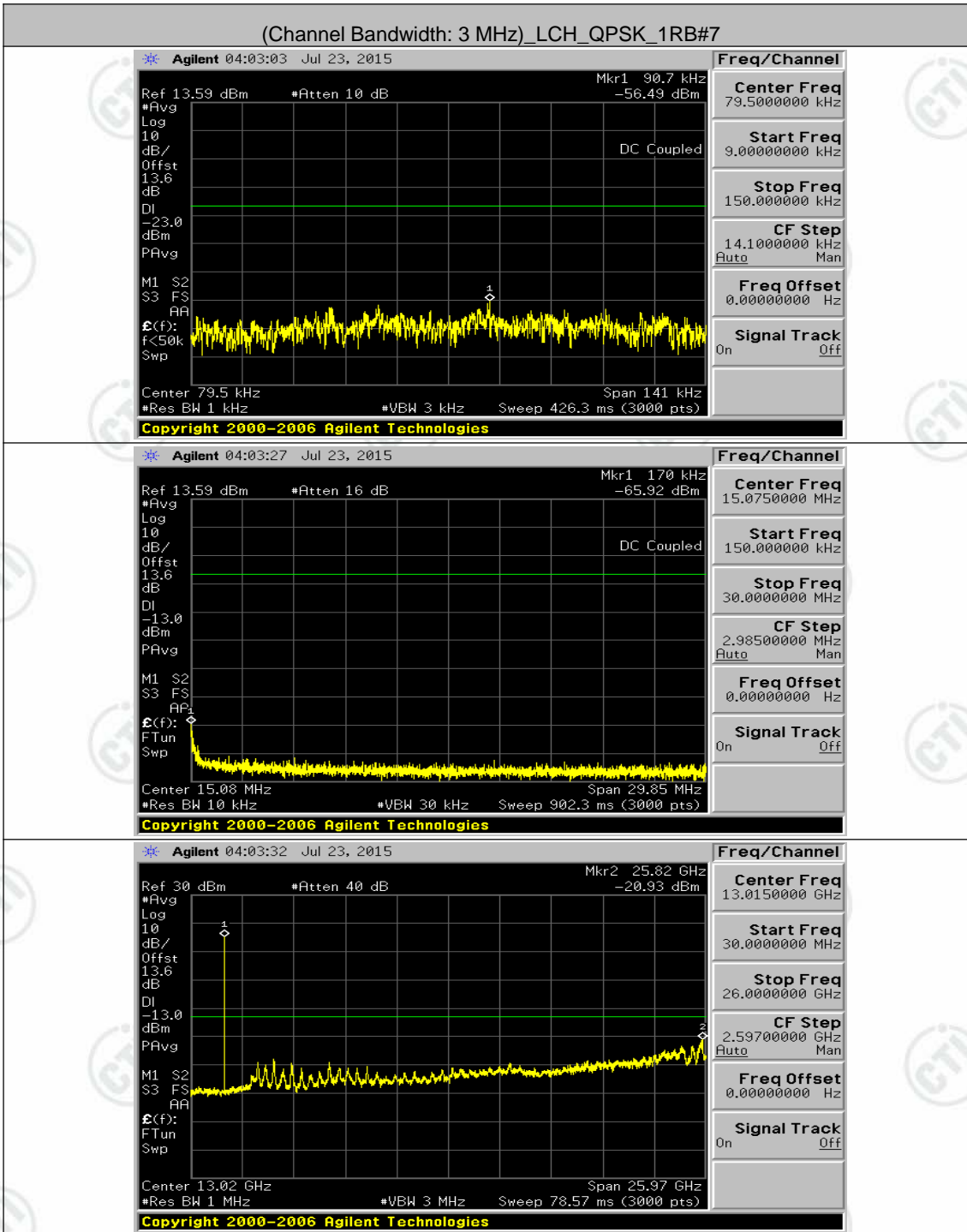


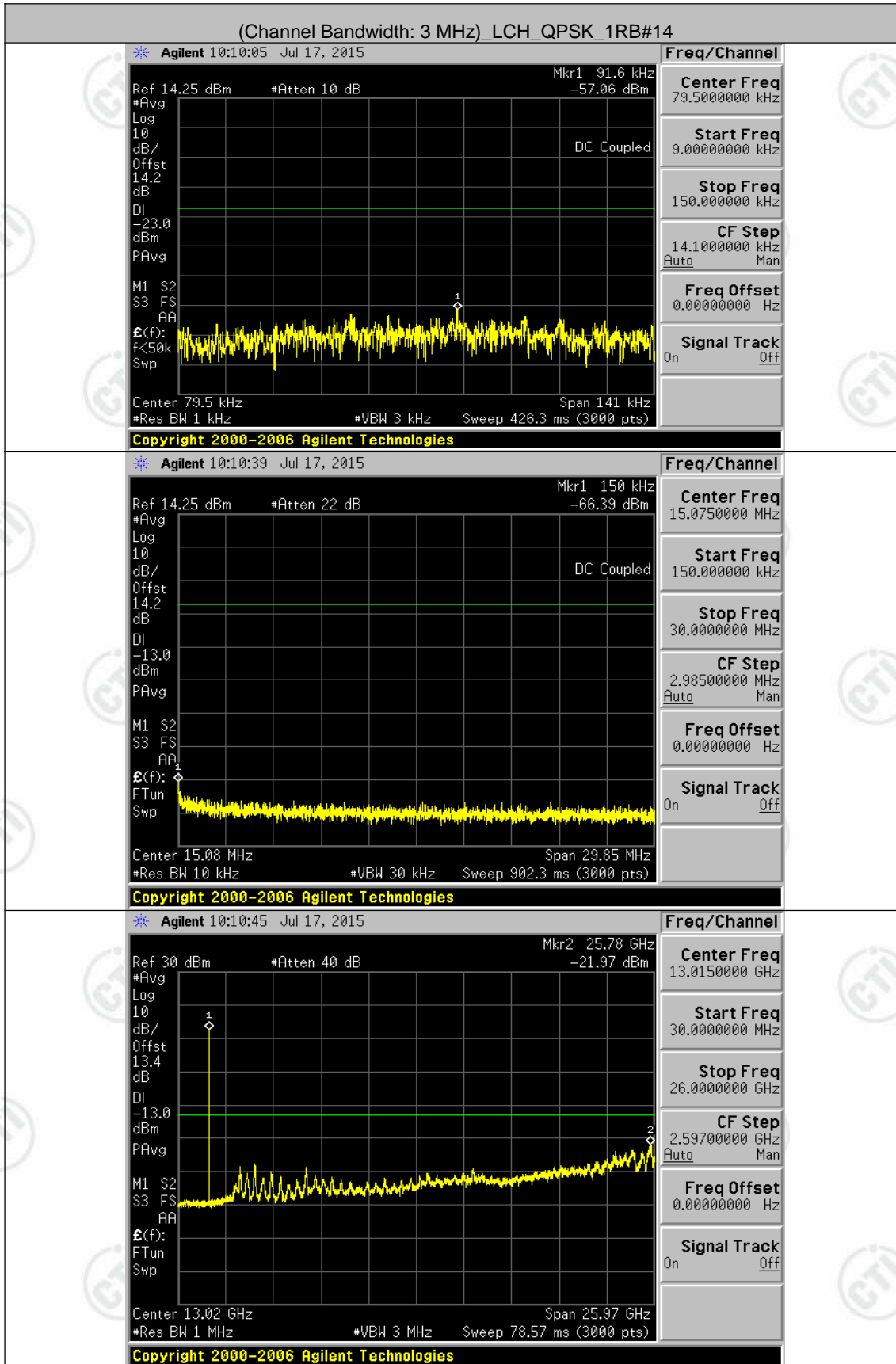


Channel Bandwidth: 3 MHz

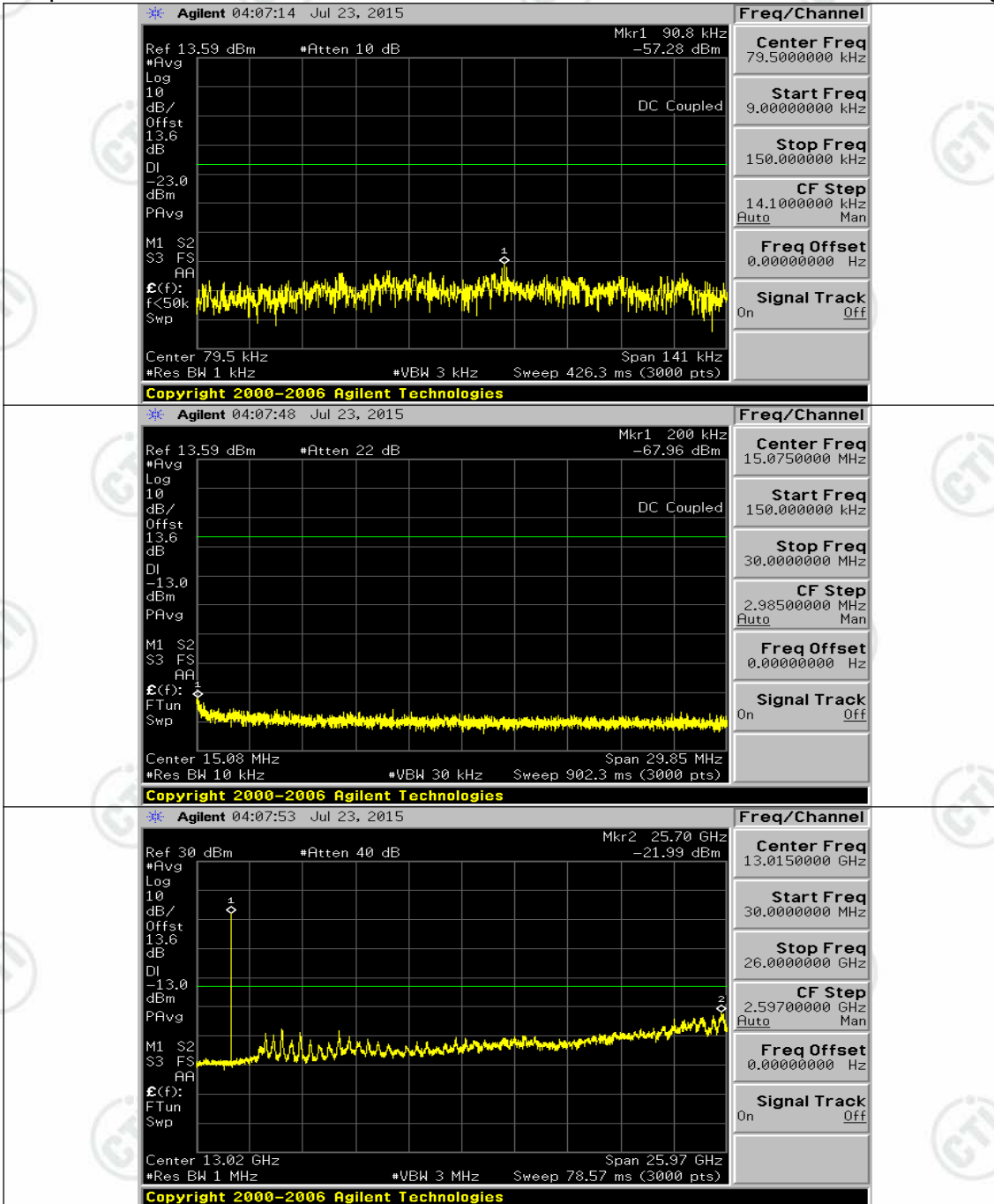


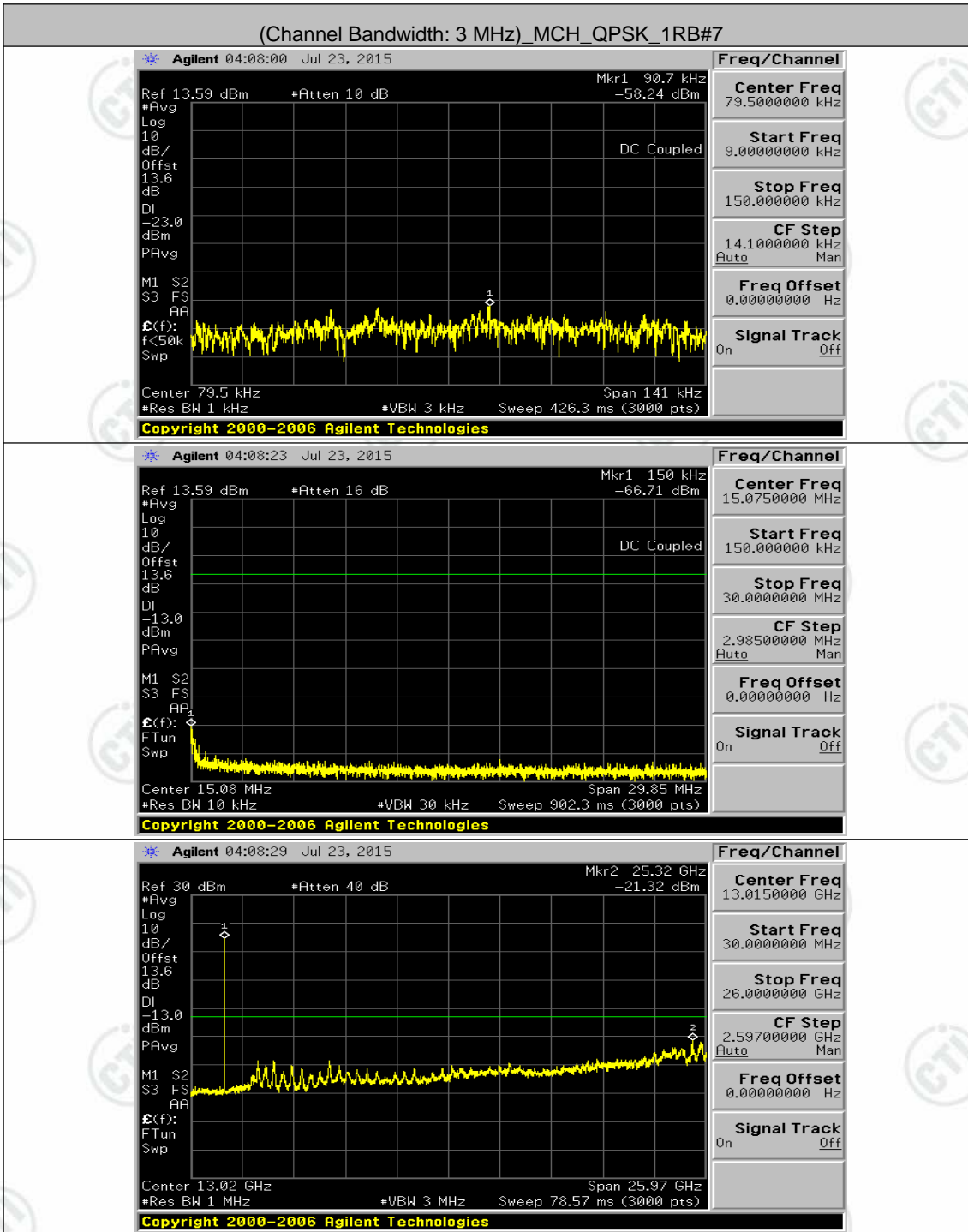


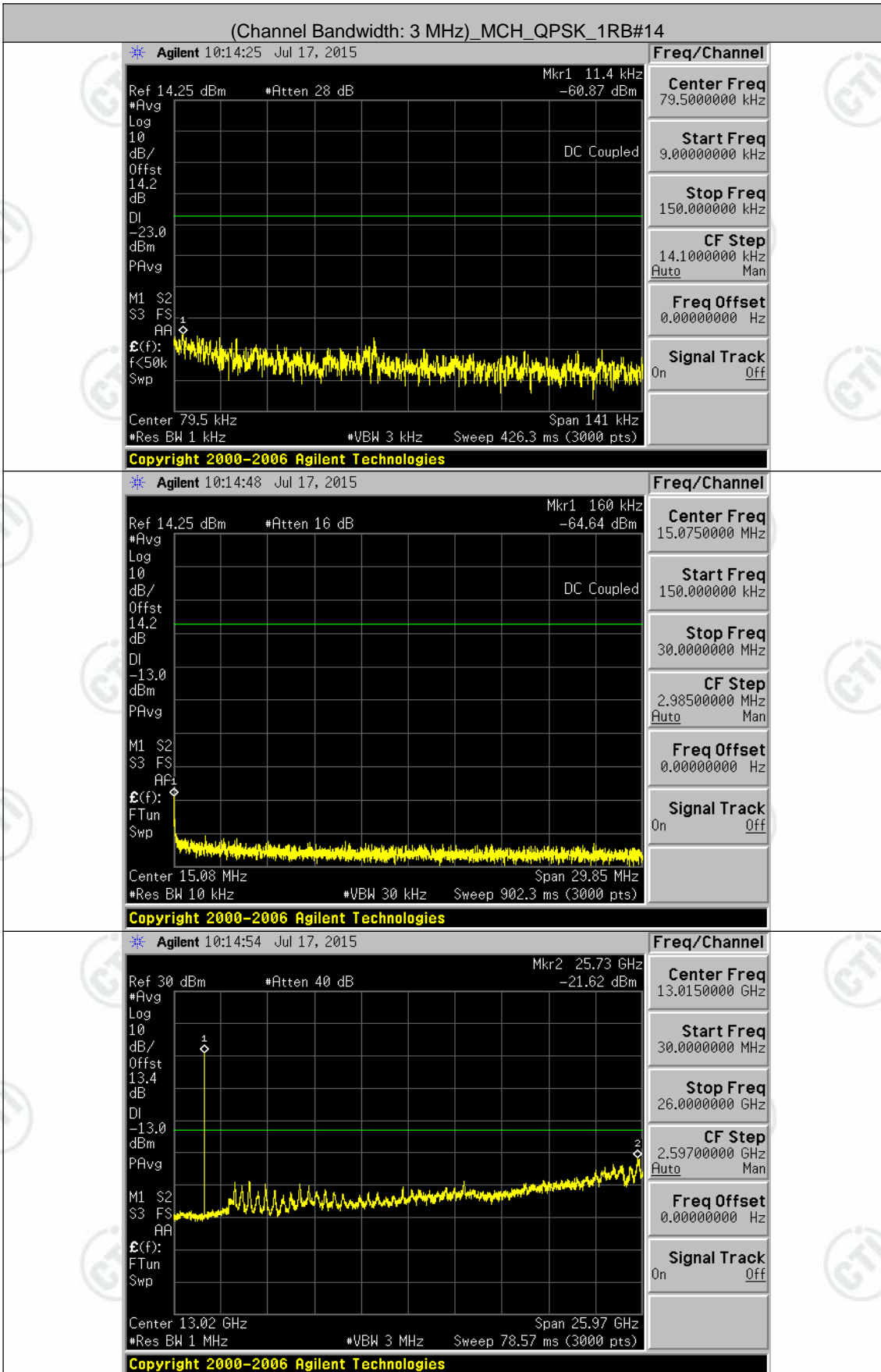


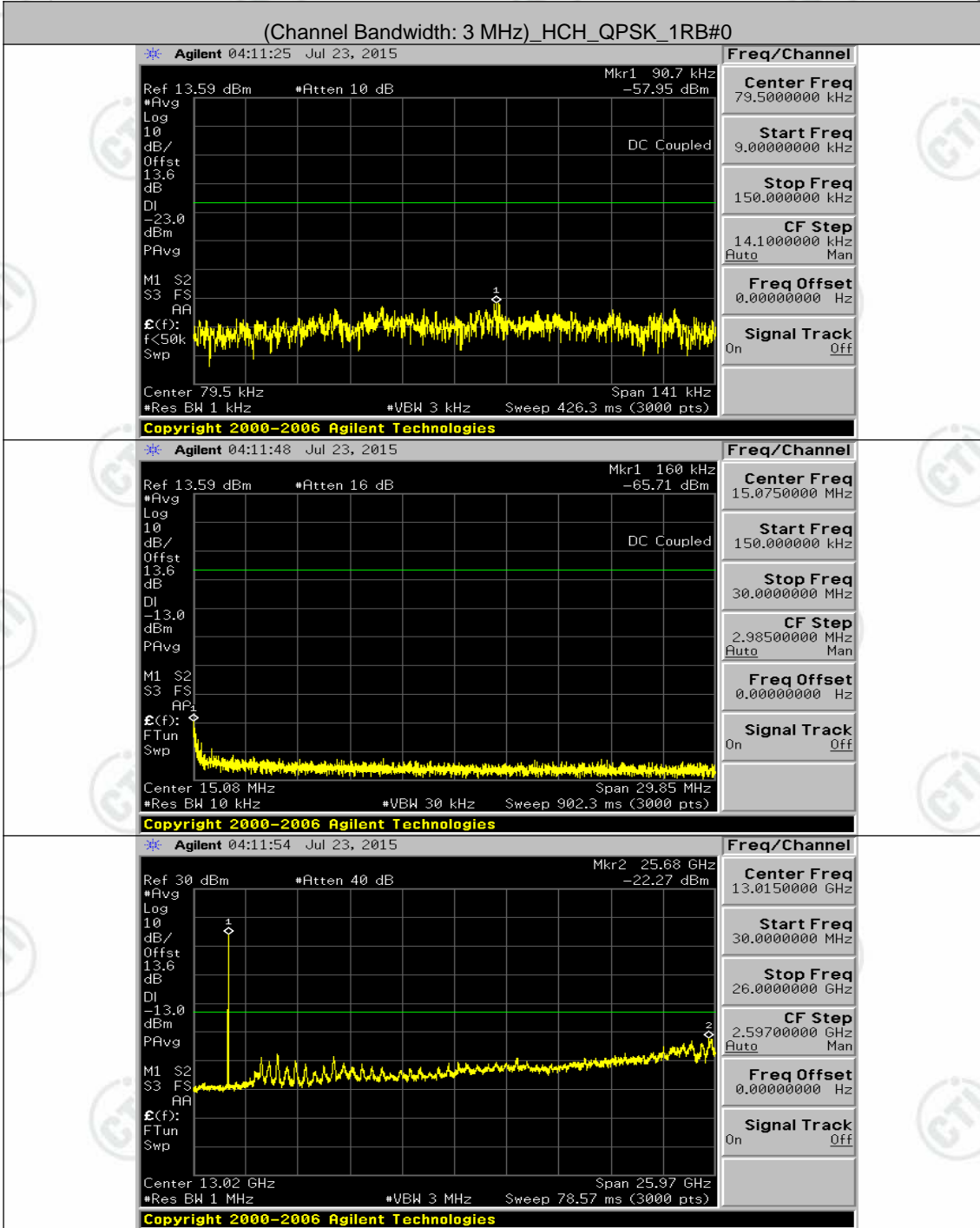


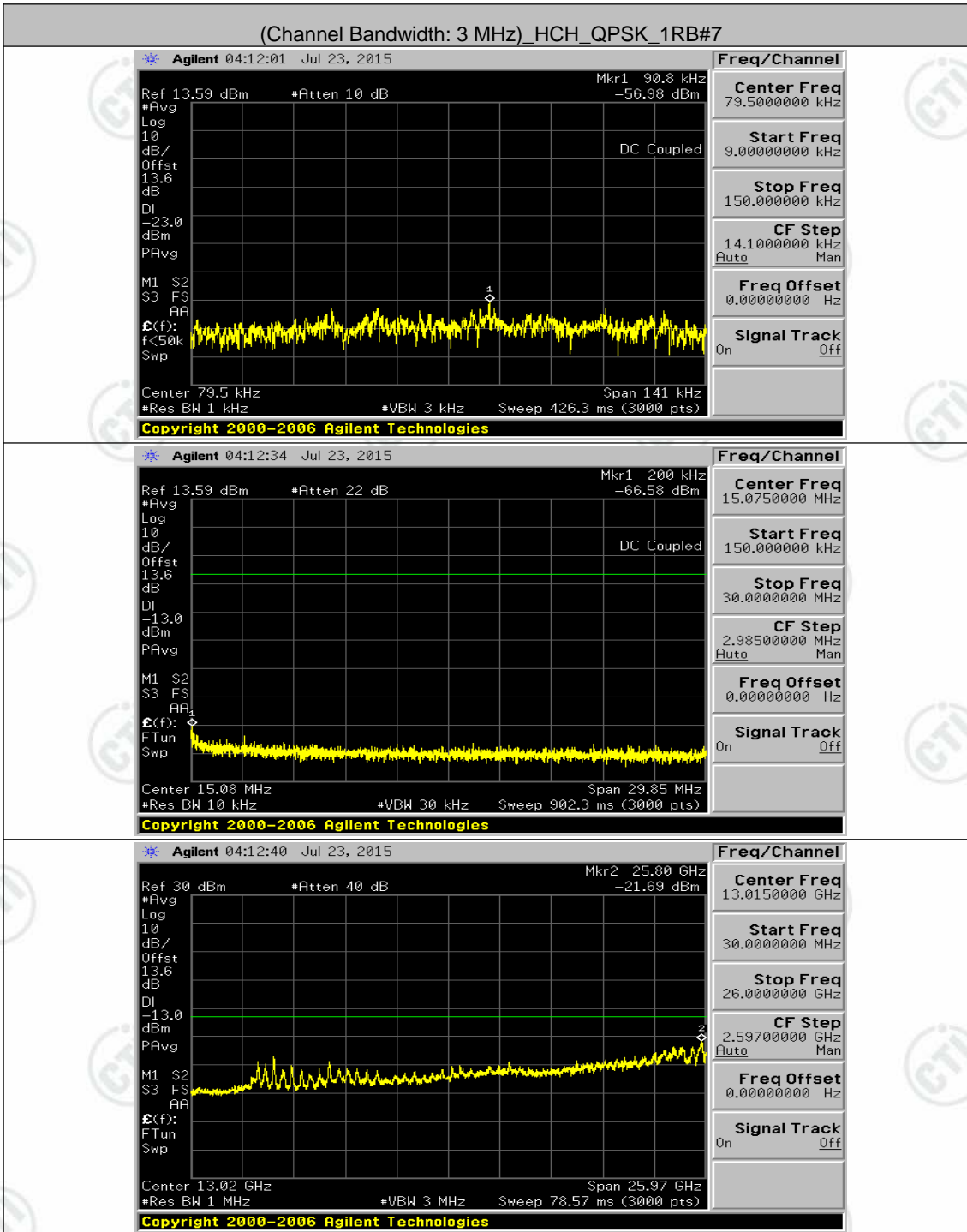
(Channel Bandwidth: 3 MHz)\_MCH\_QPSK\_1RB#0

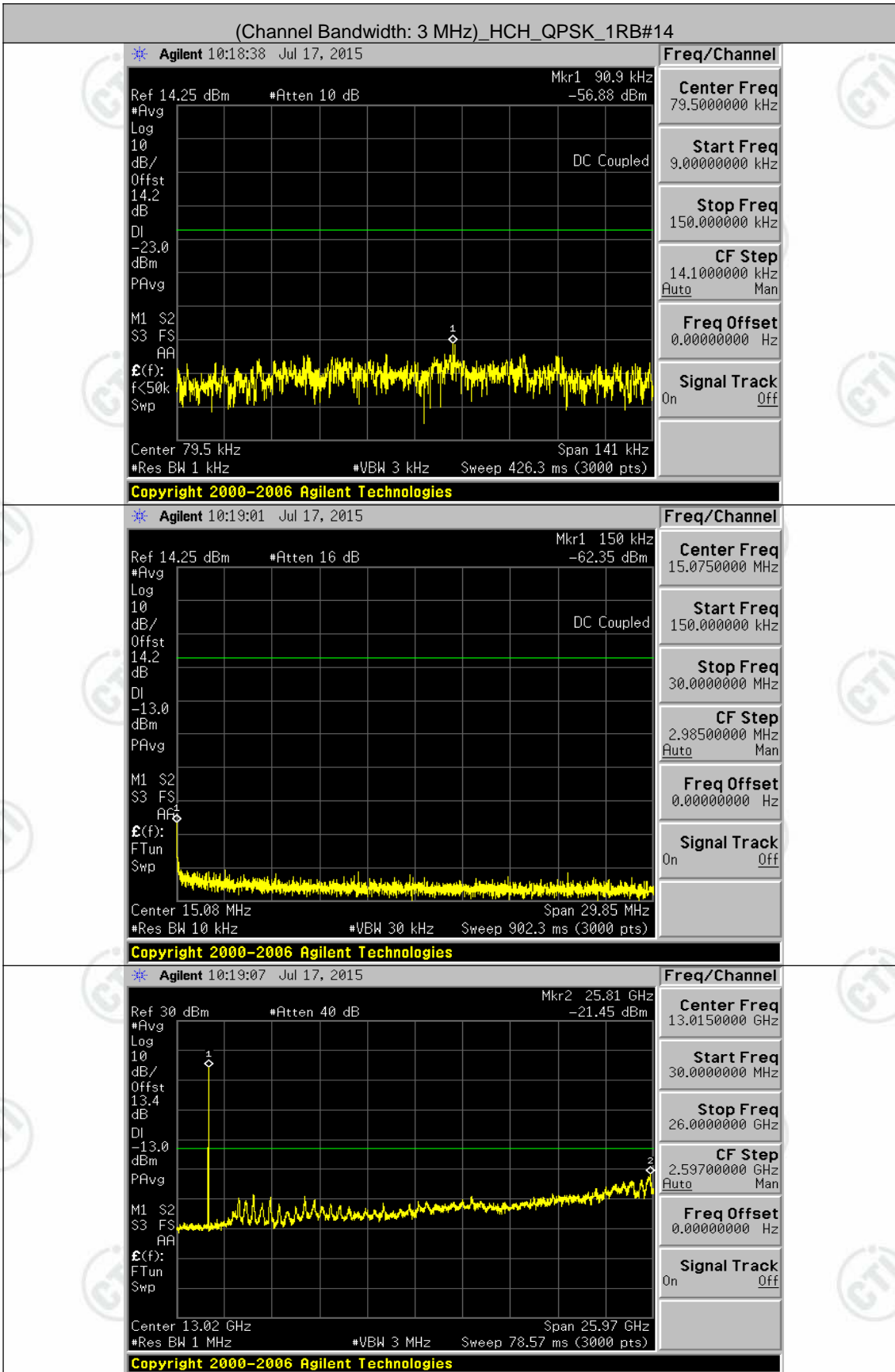




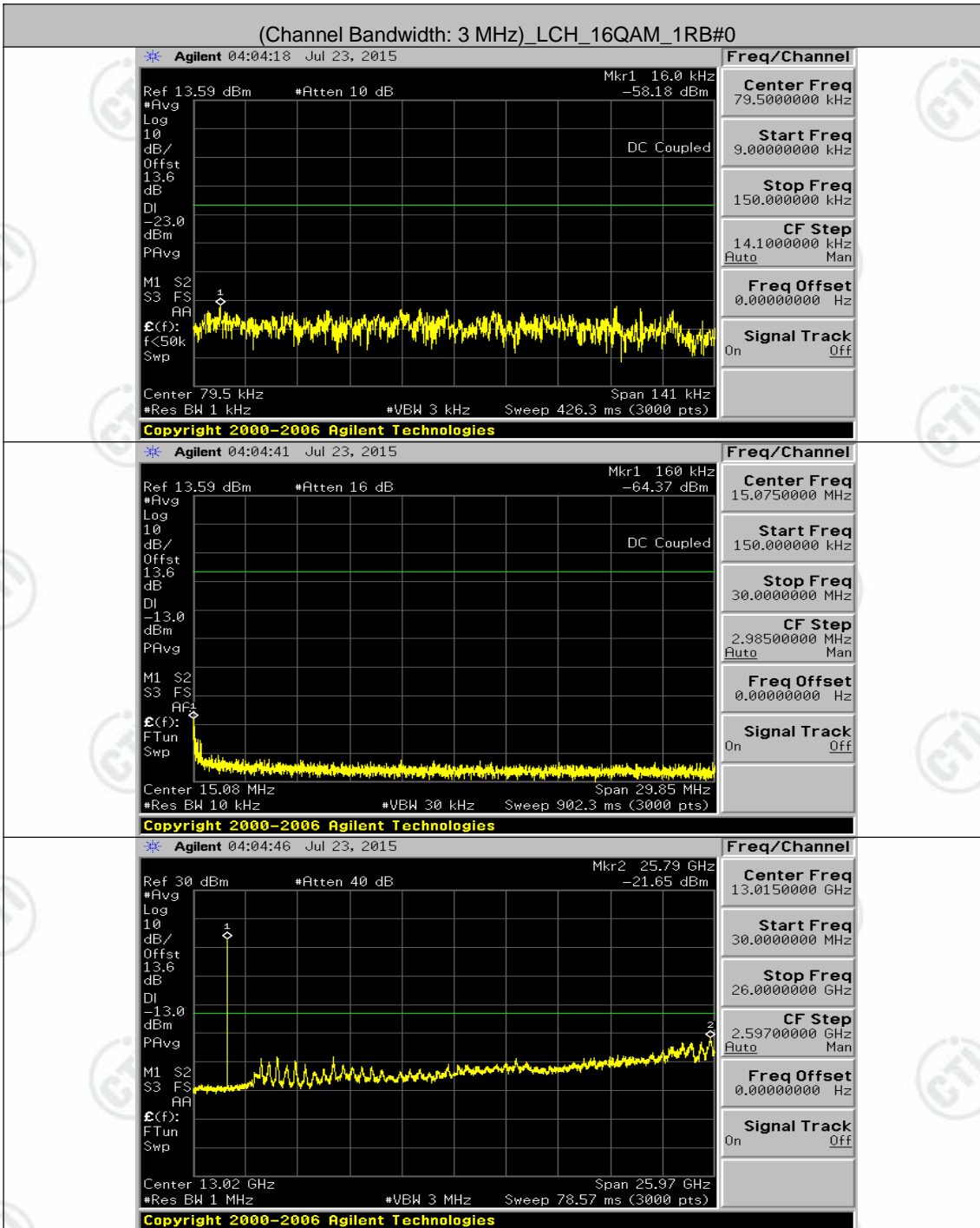


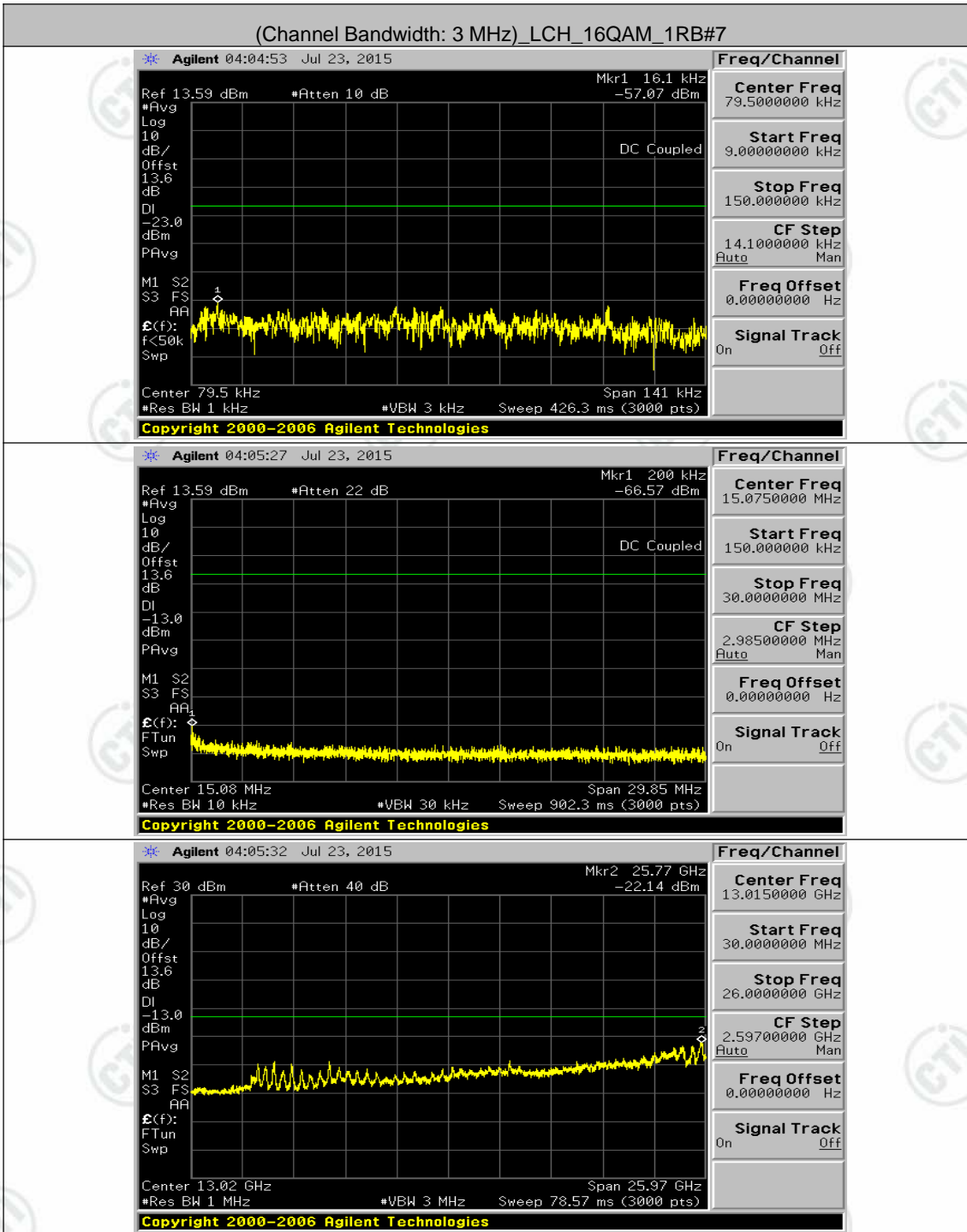


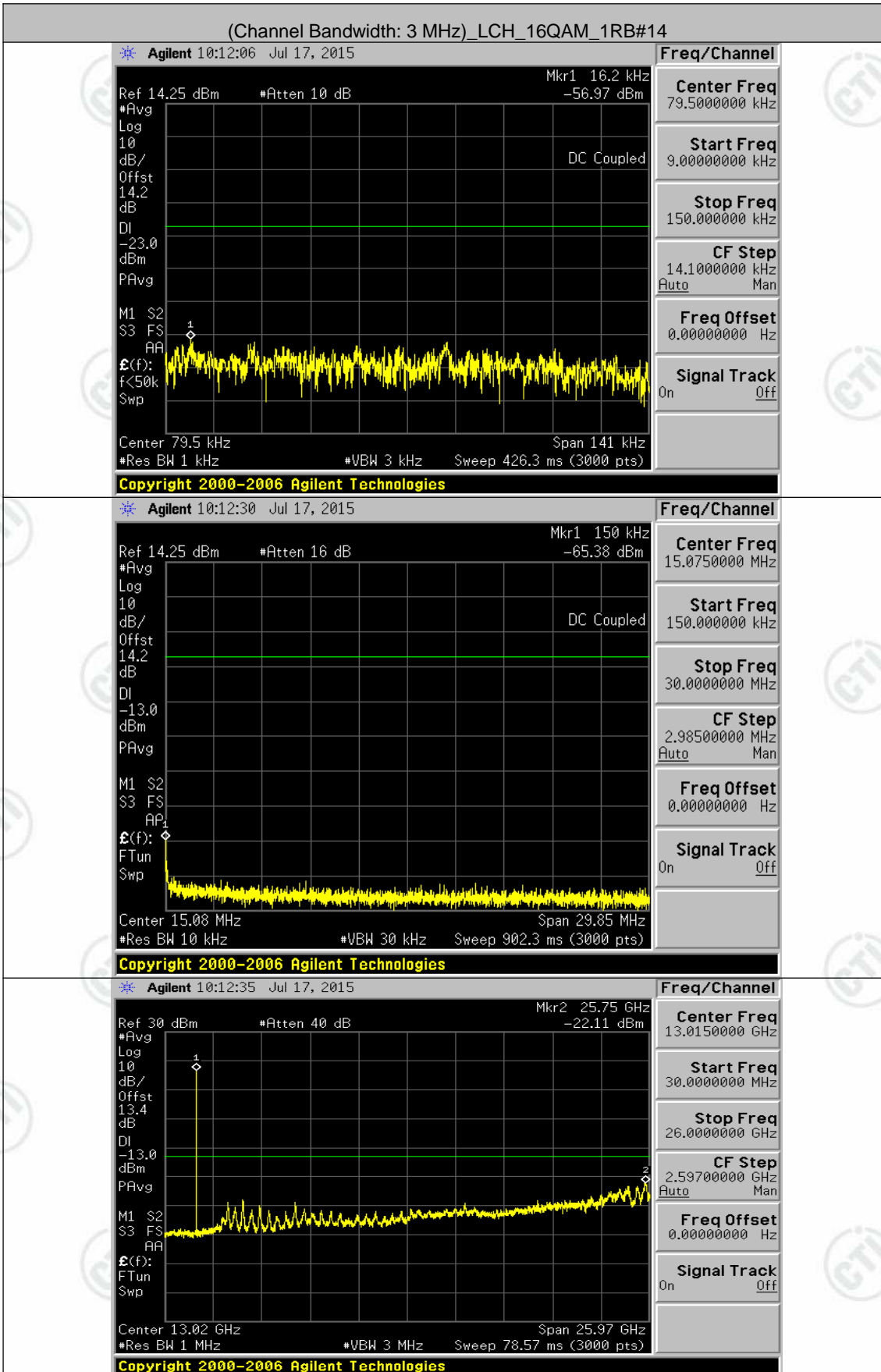


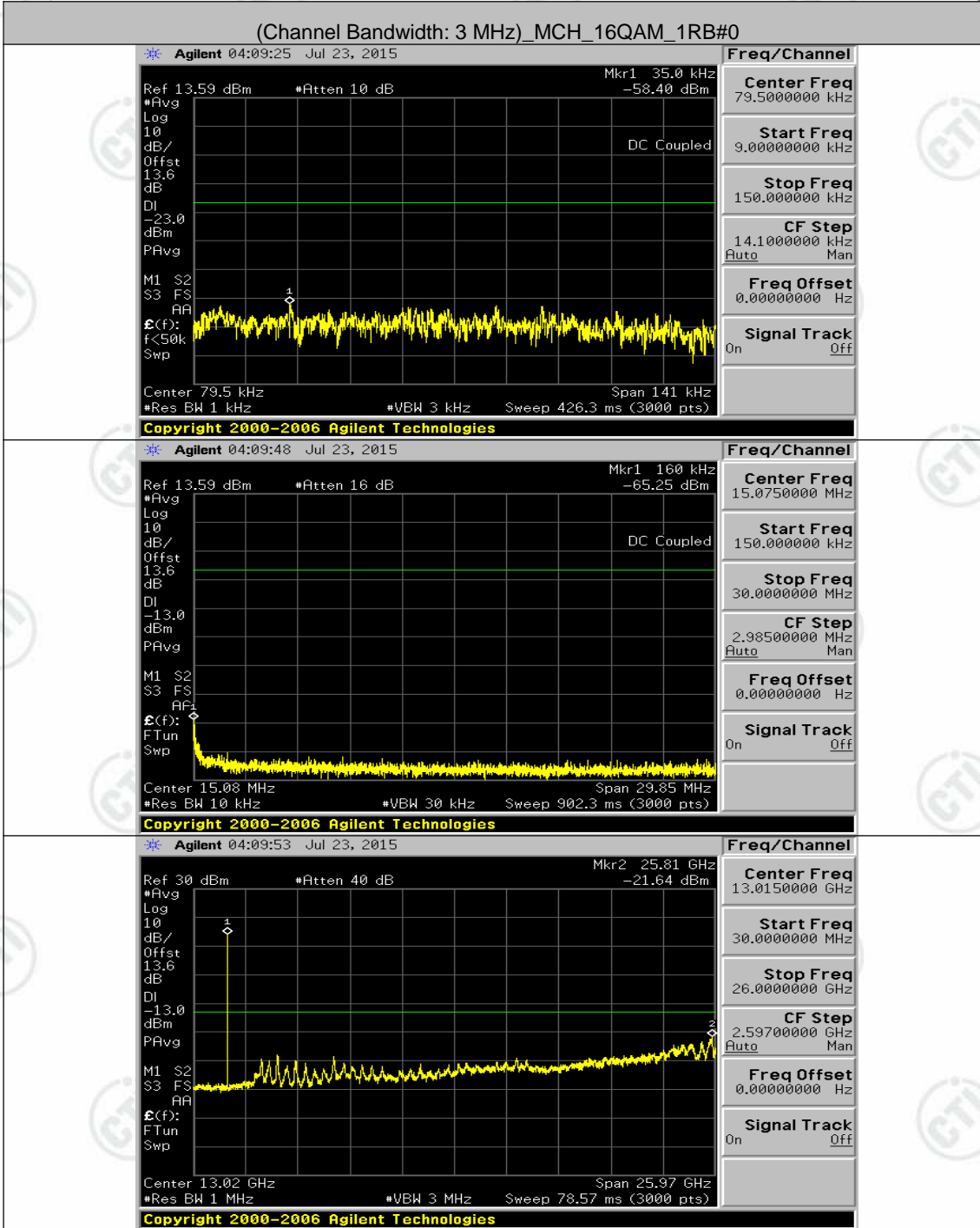


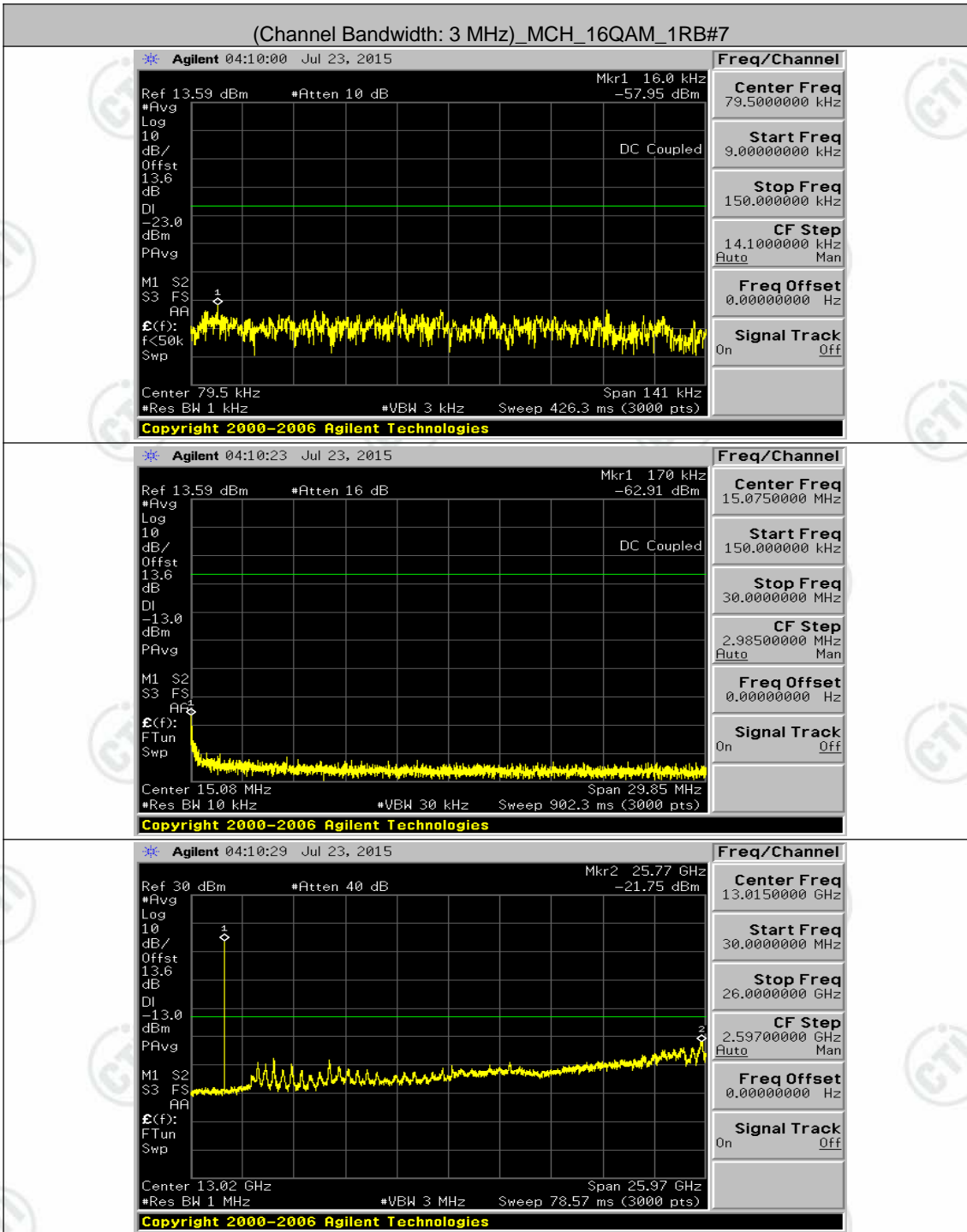


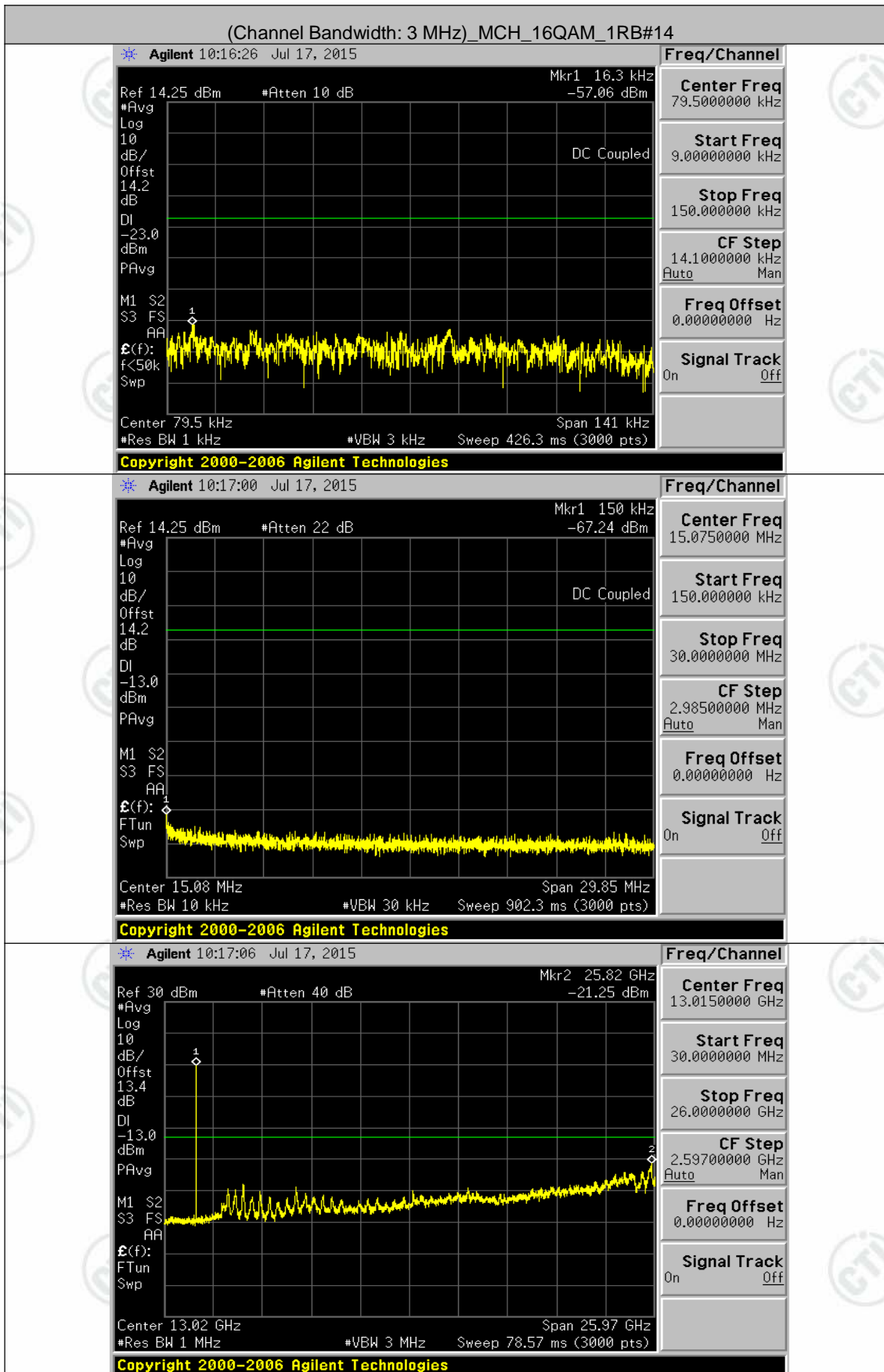


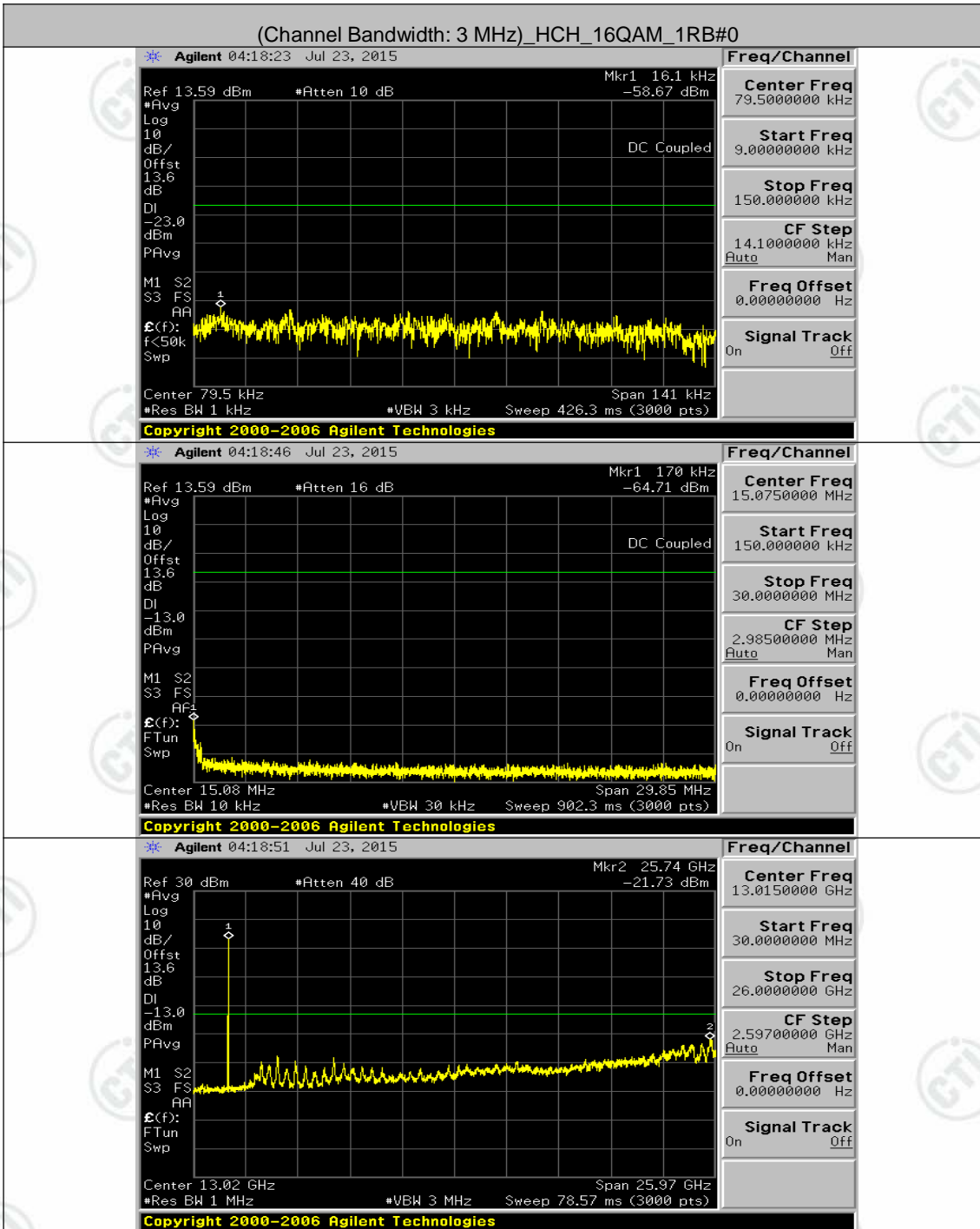


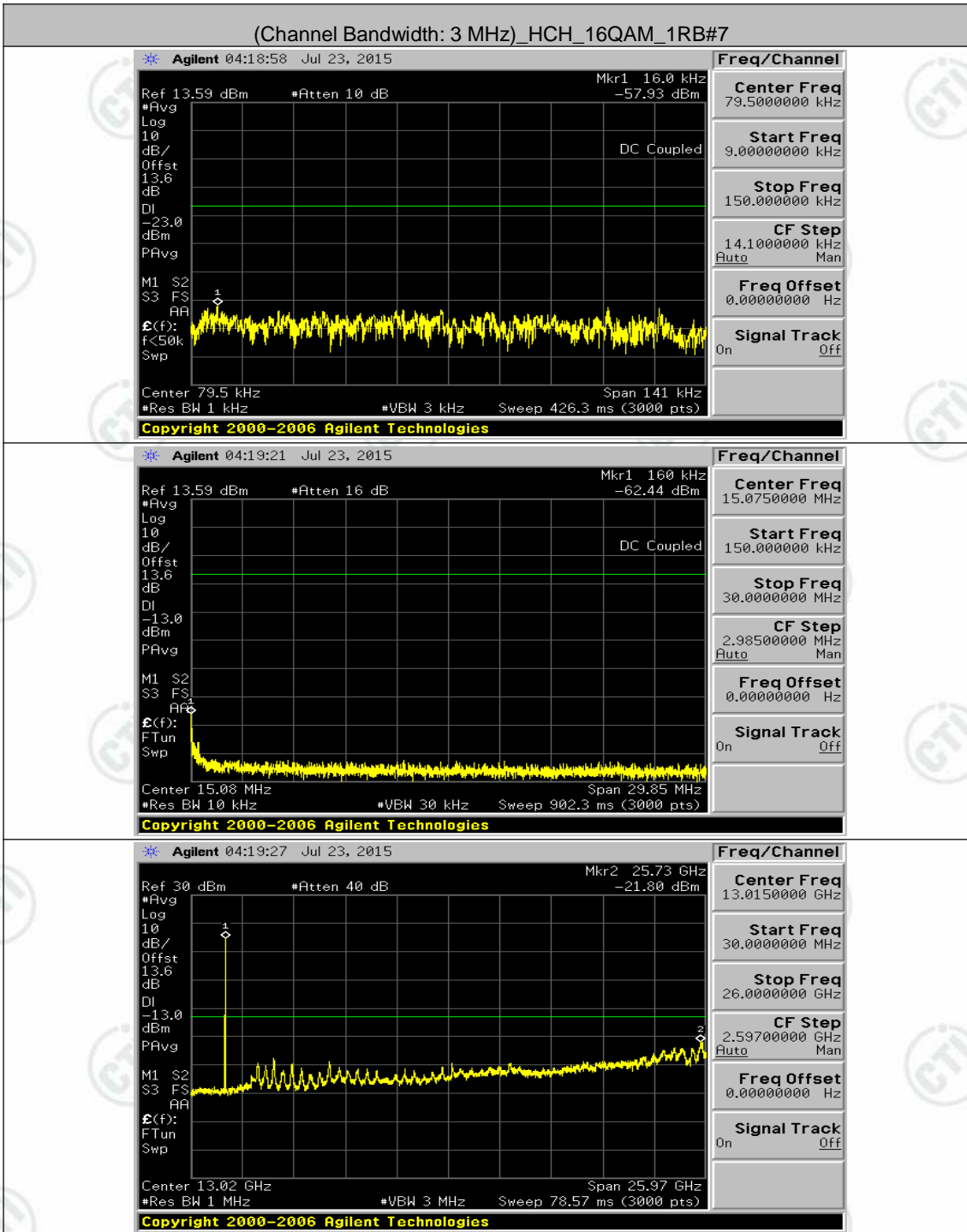




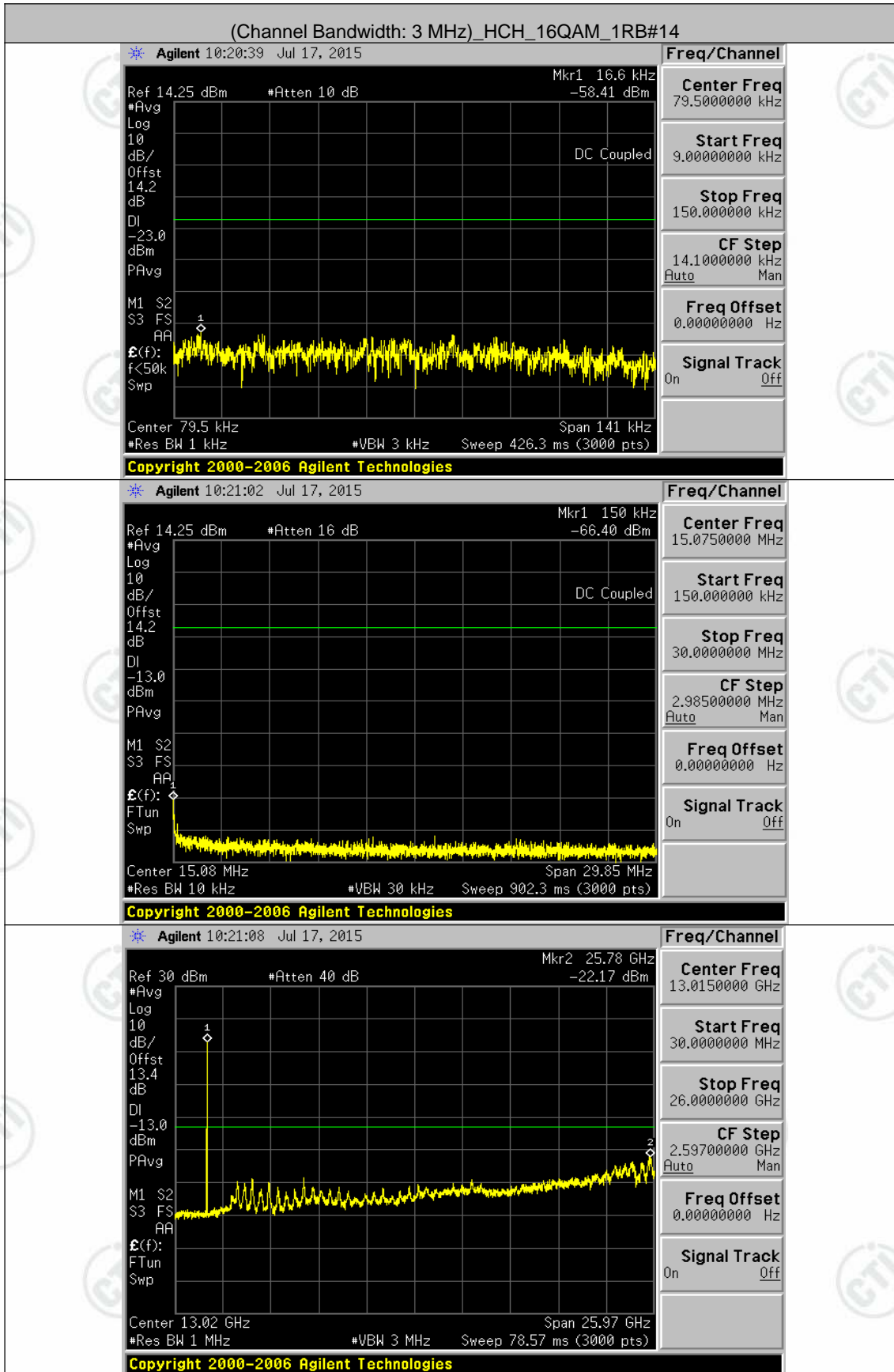




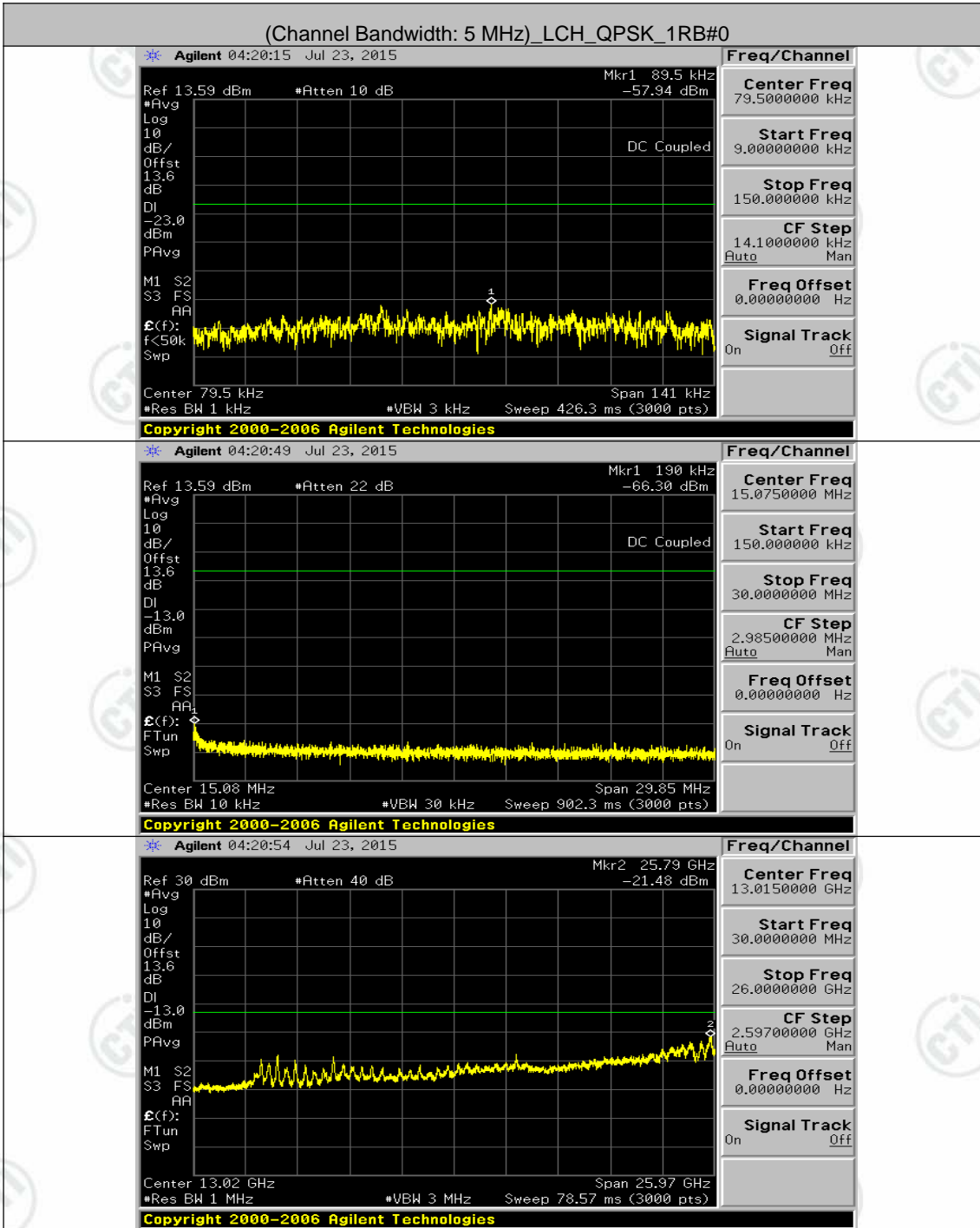


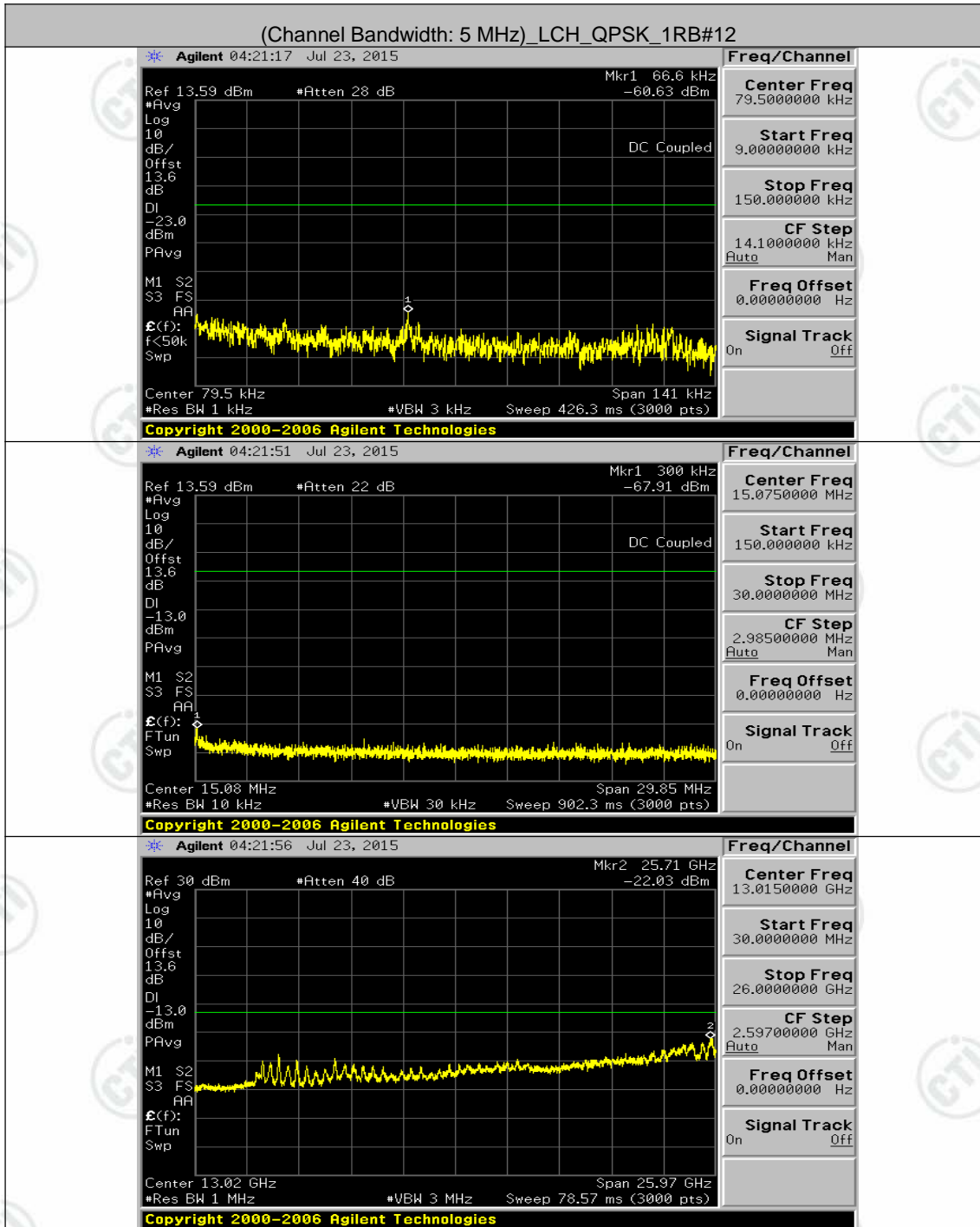


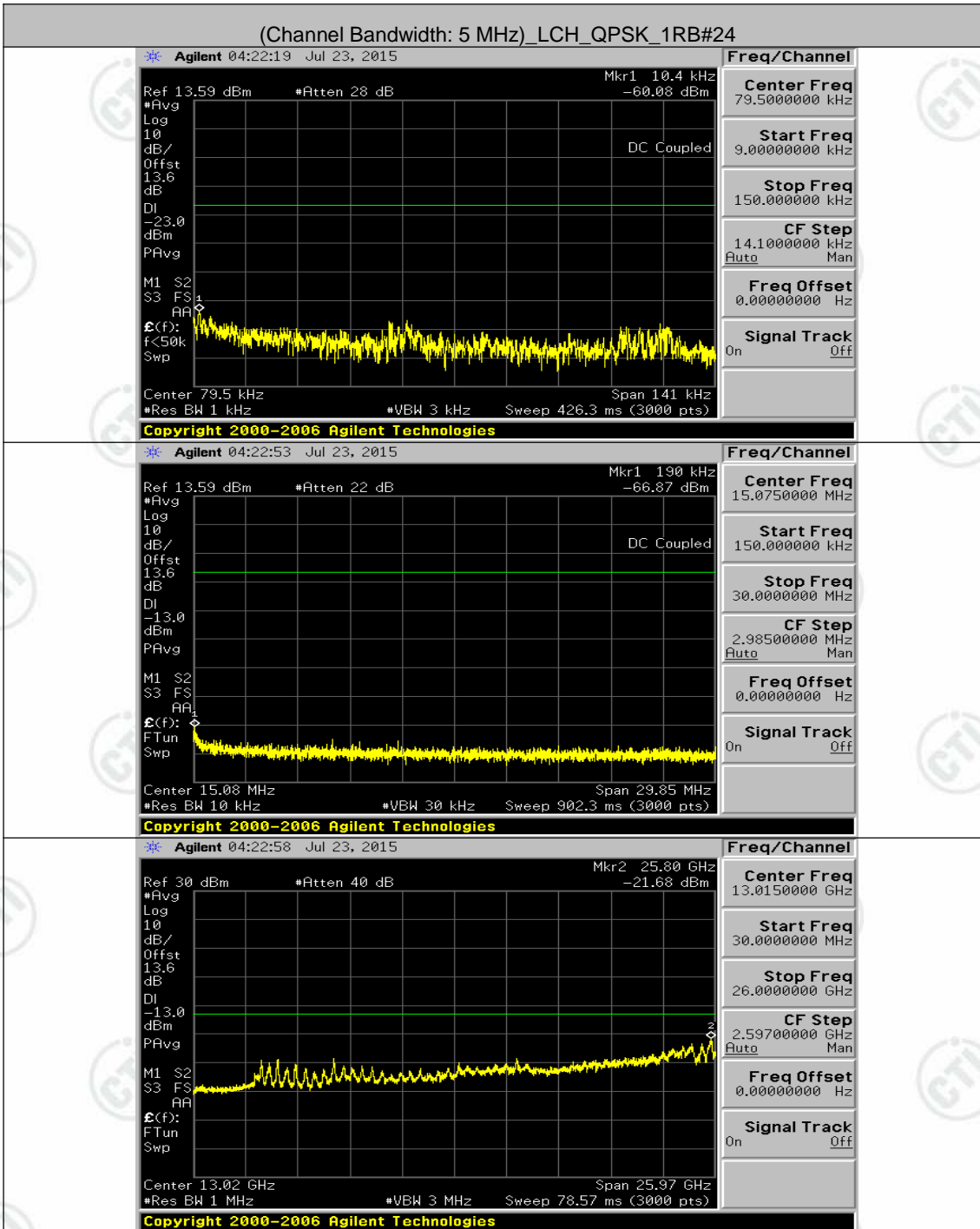


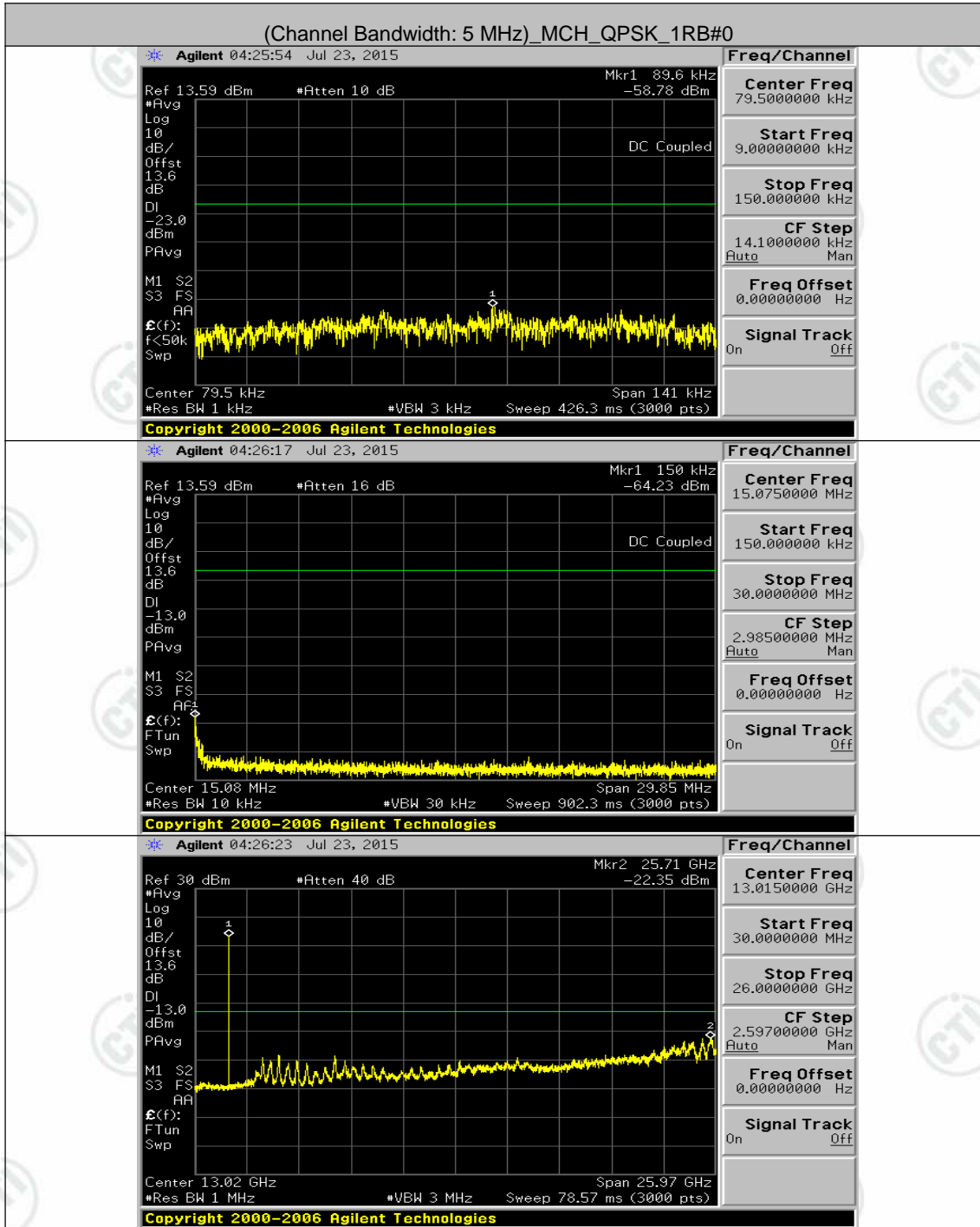


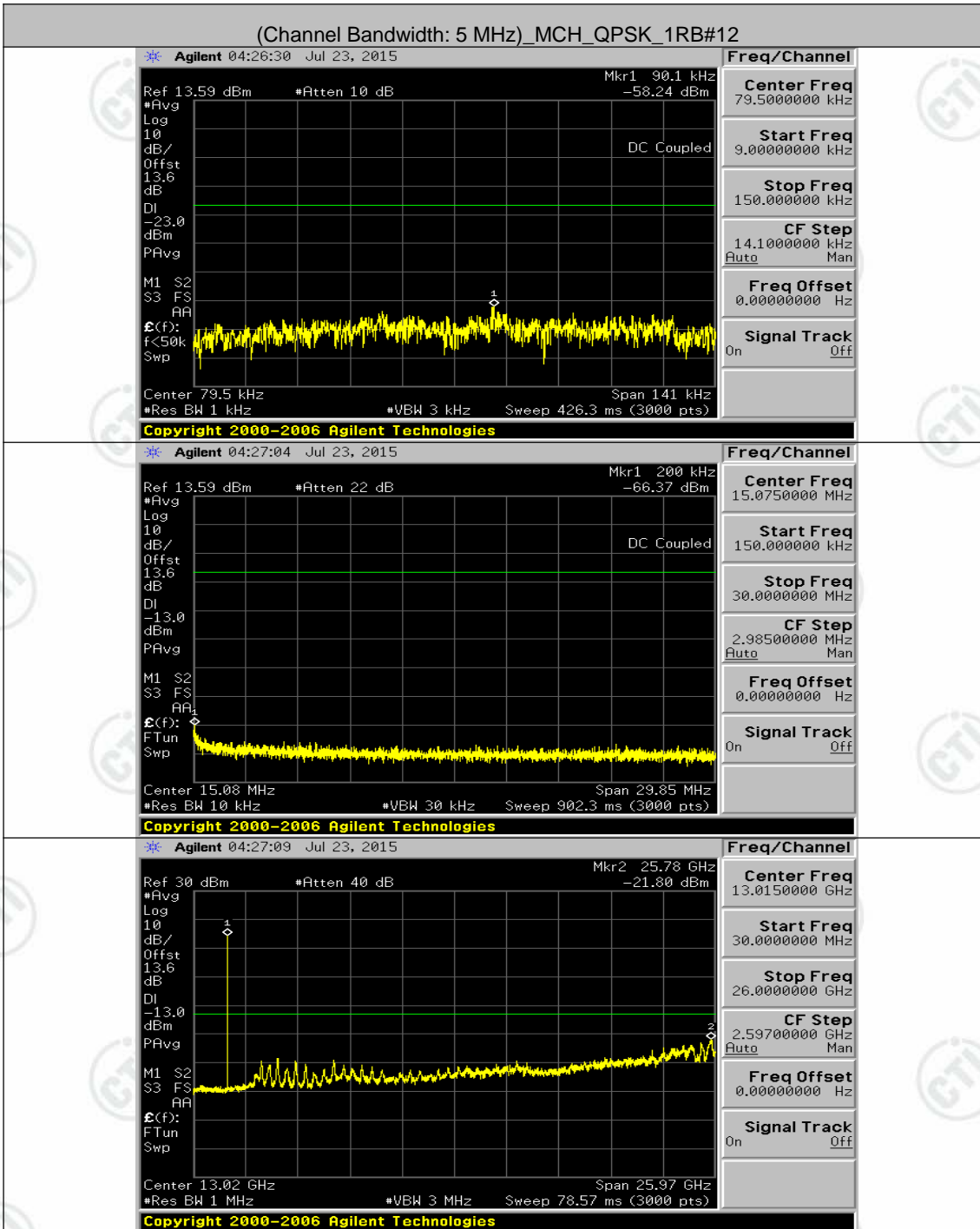
Channel Bandwidth: 5 MHz

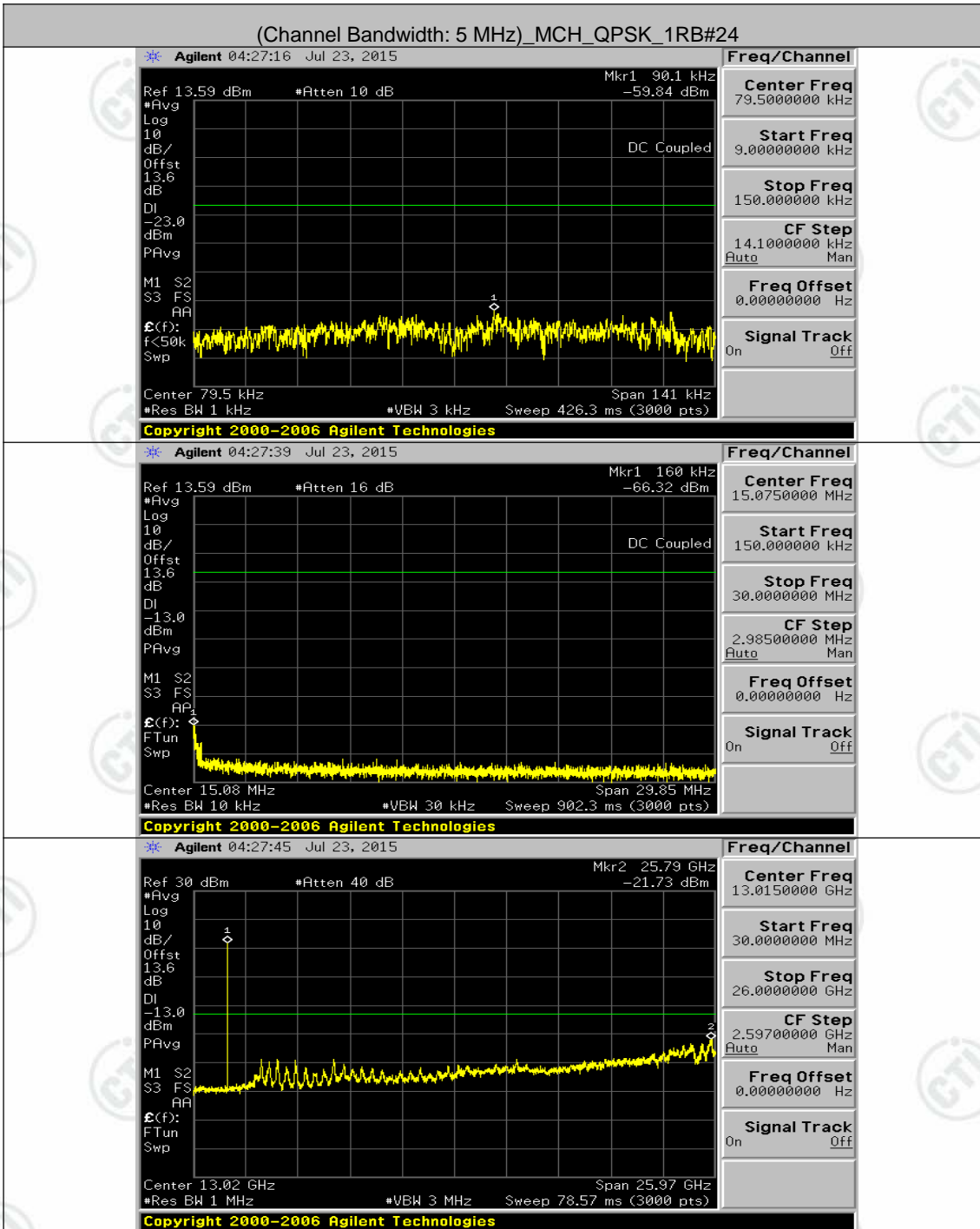


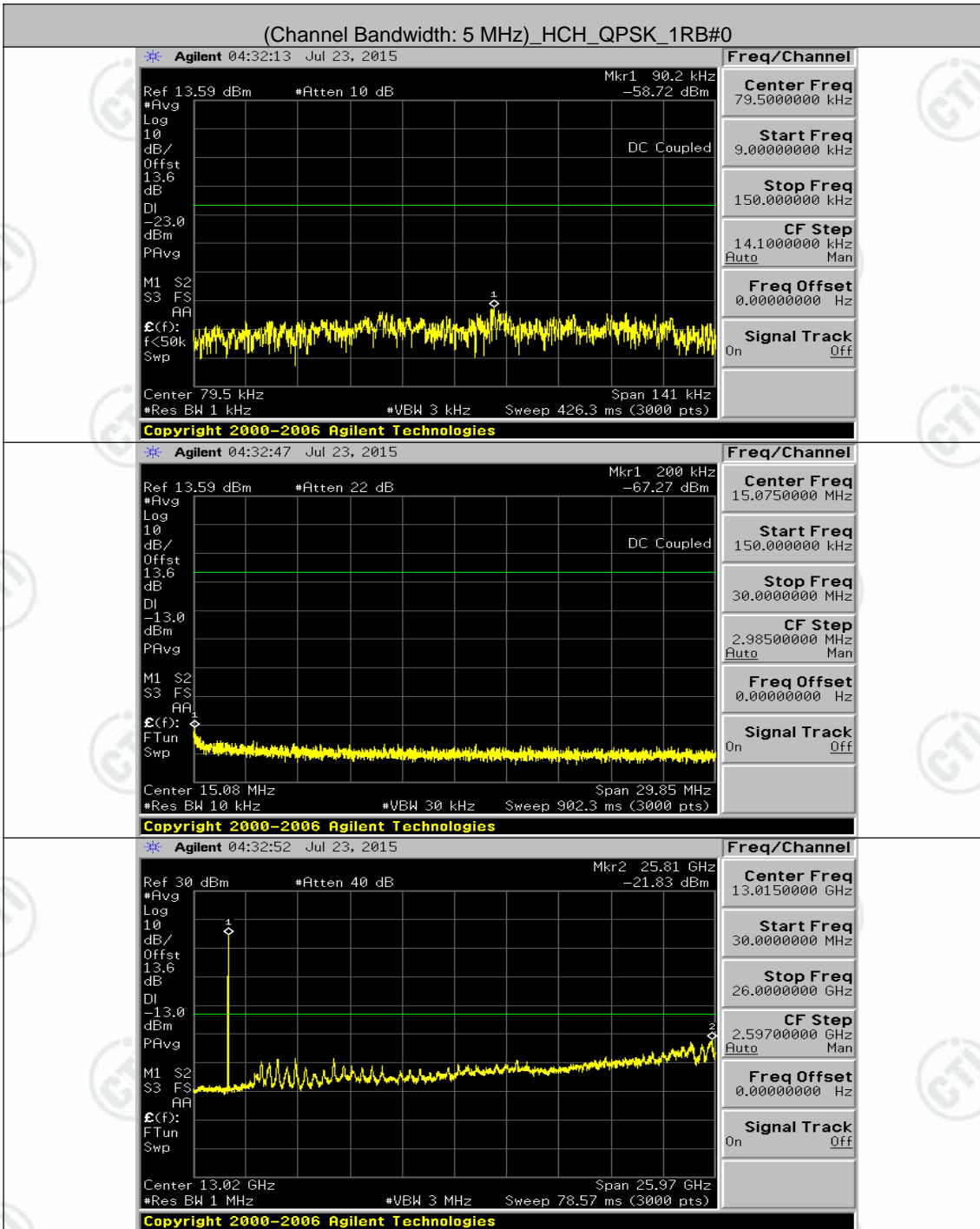




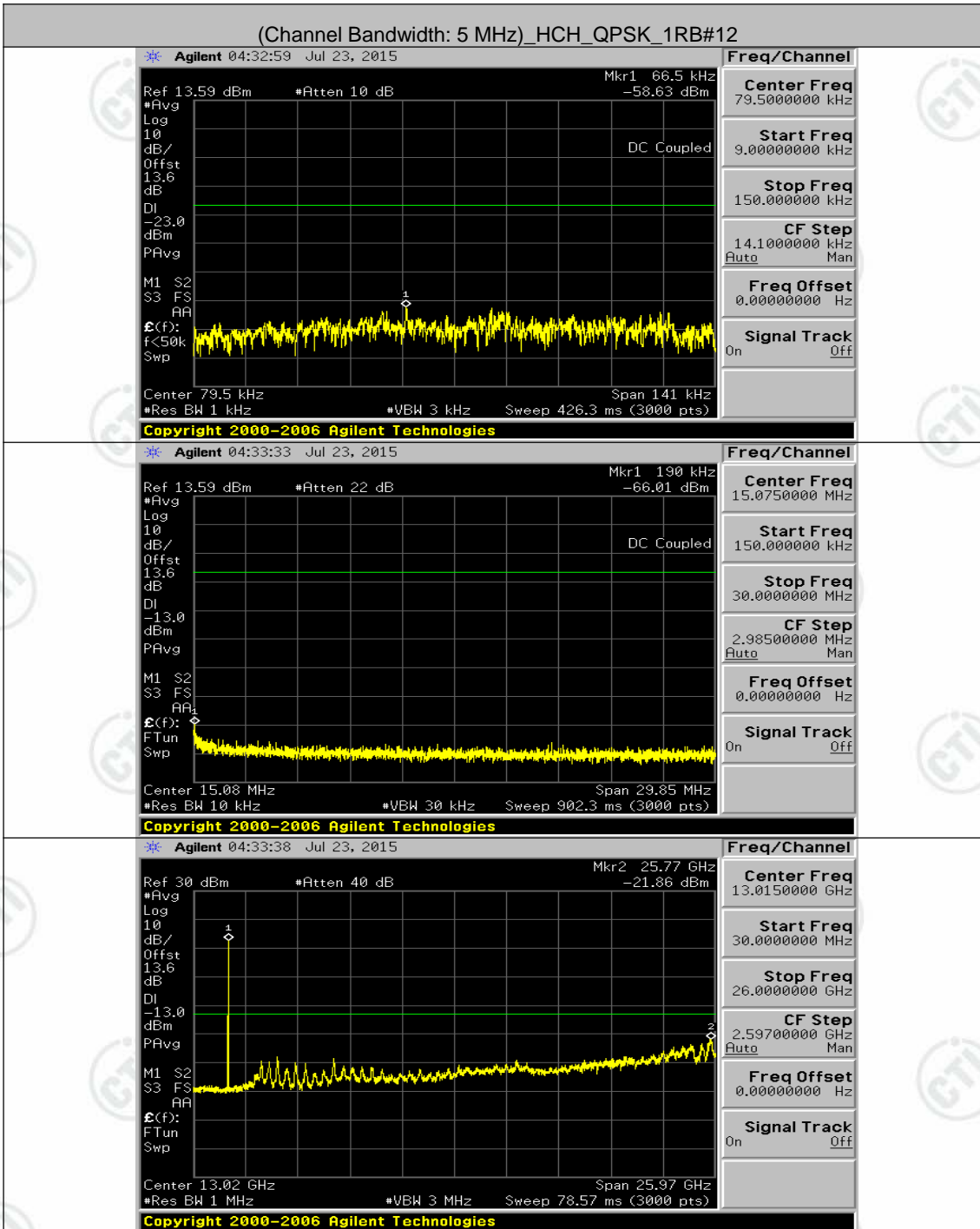


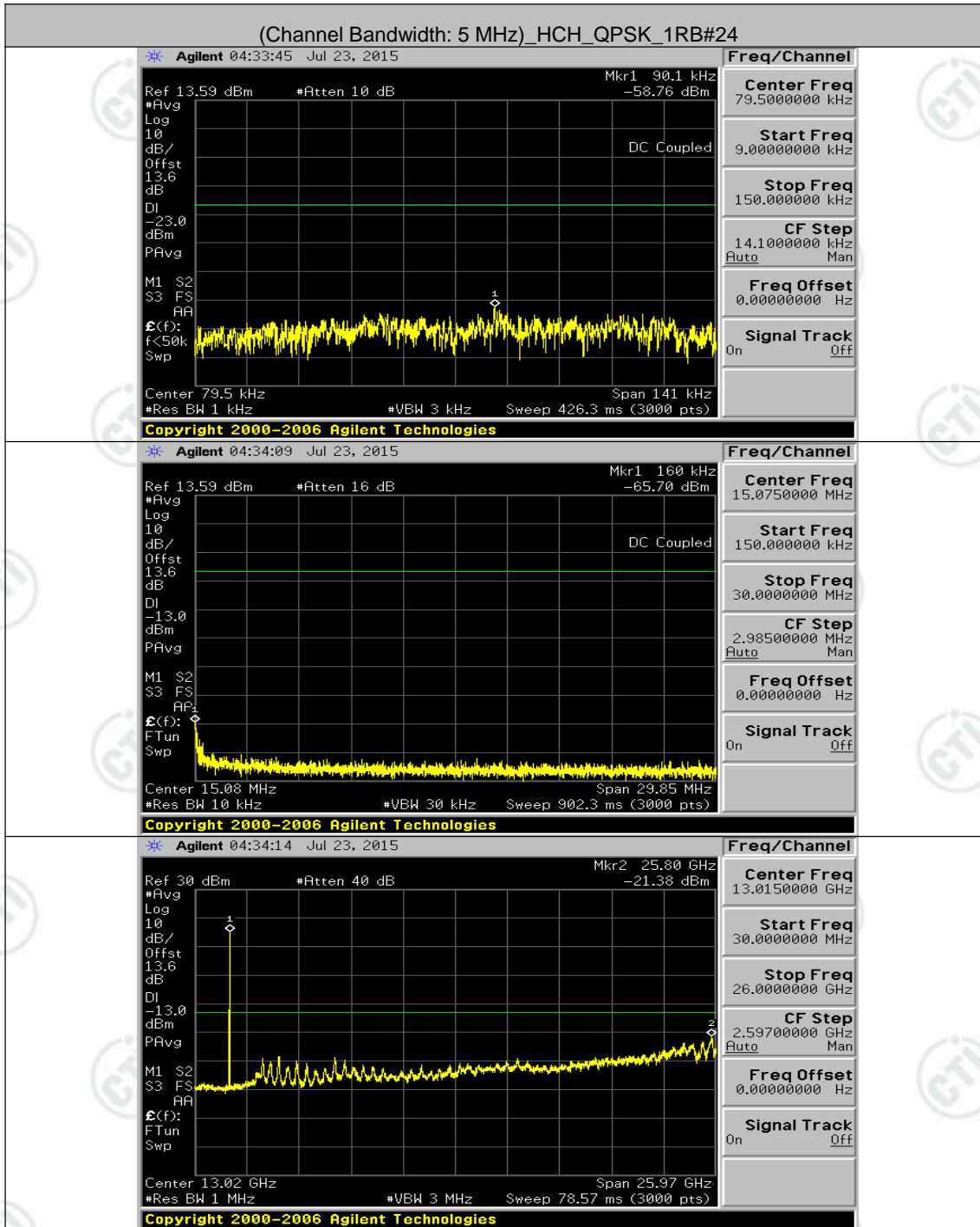


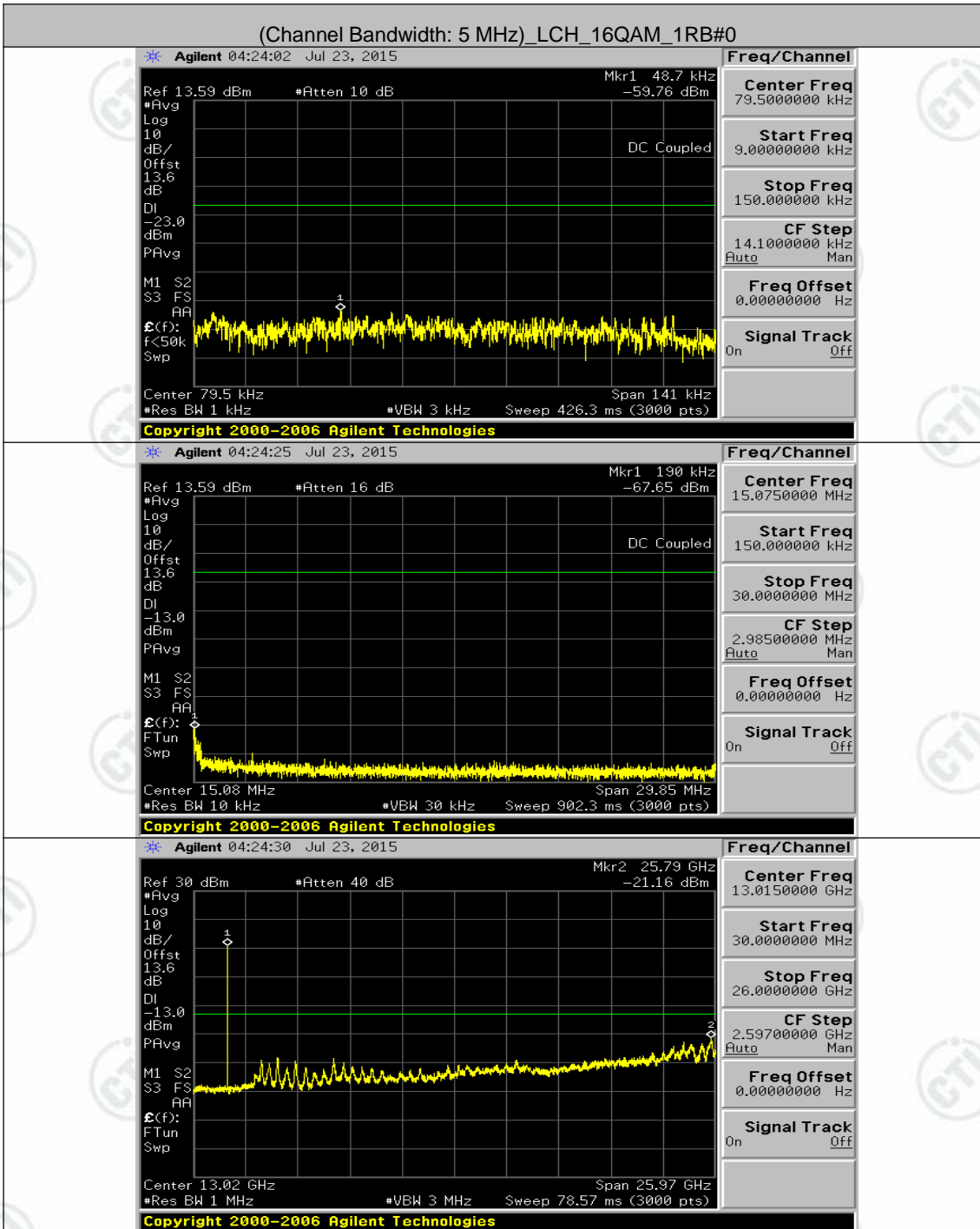


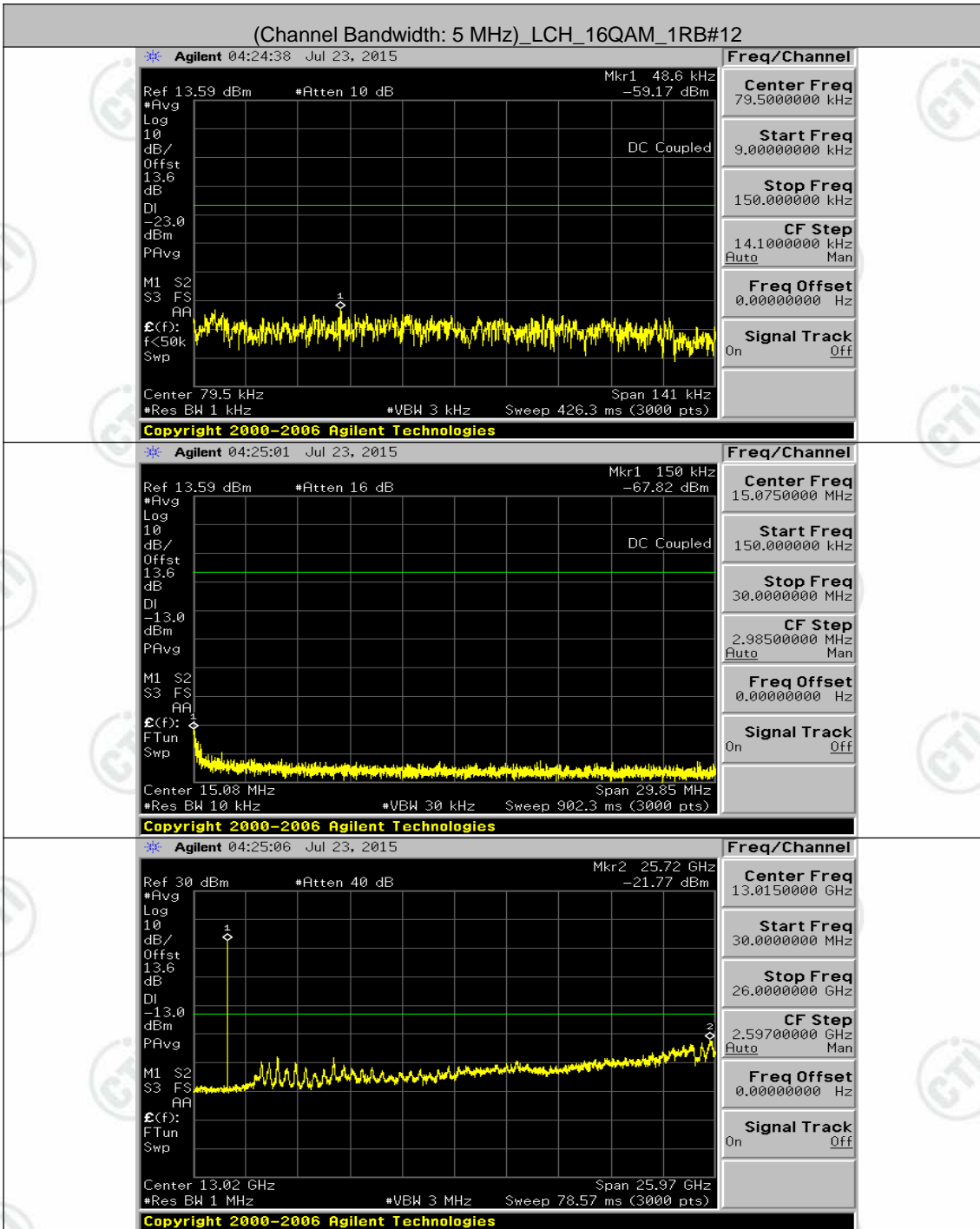


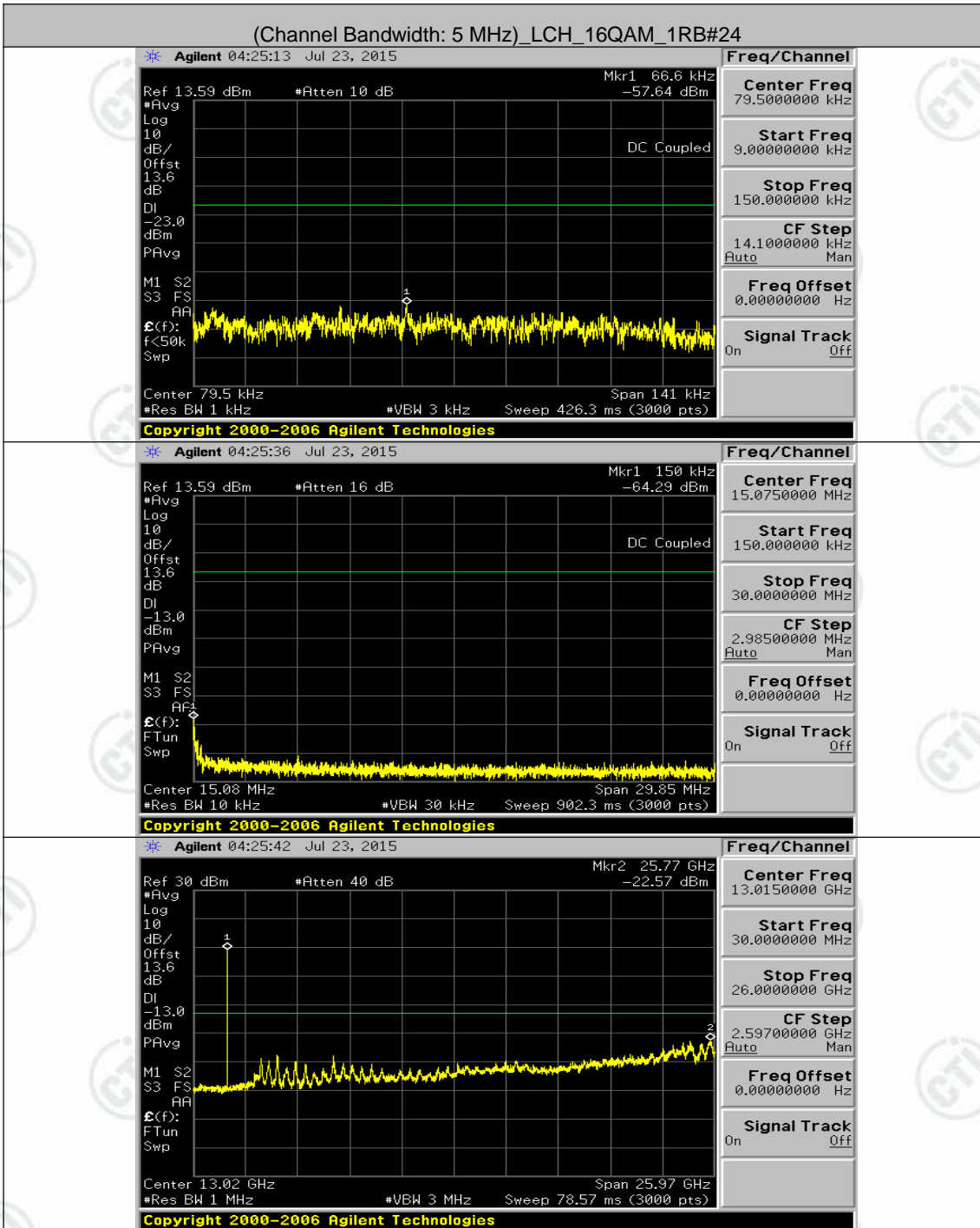


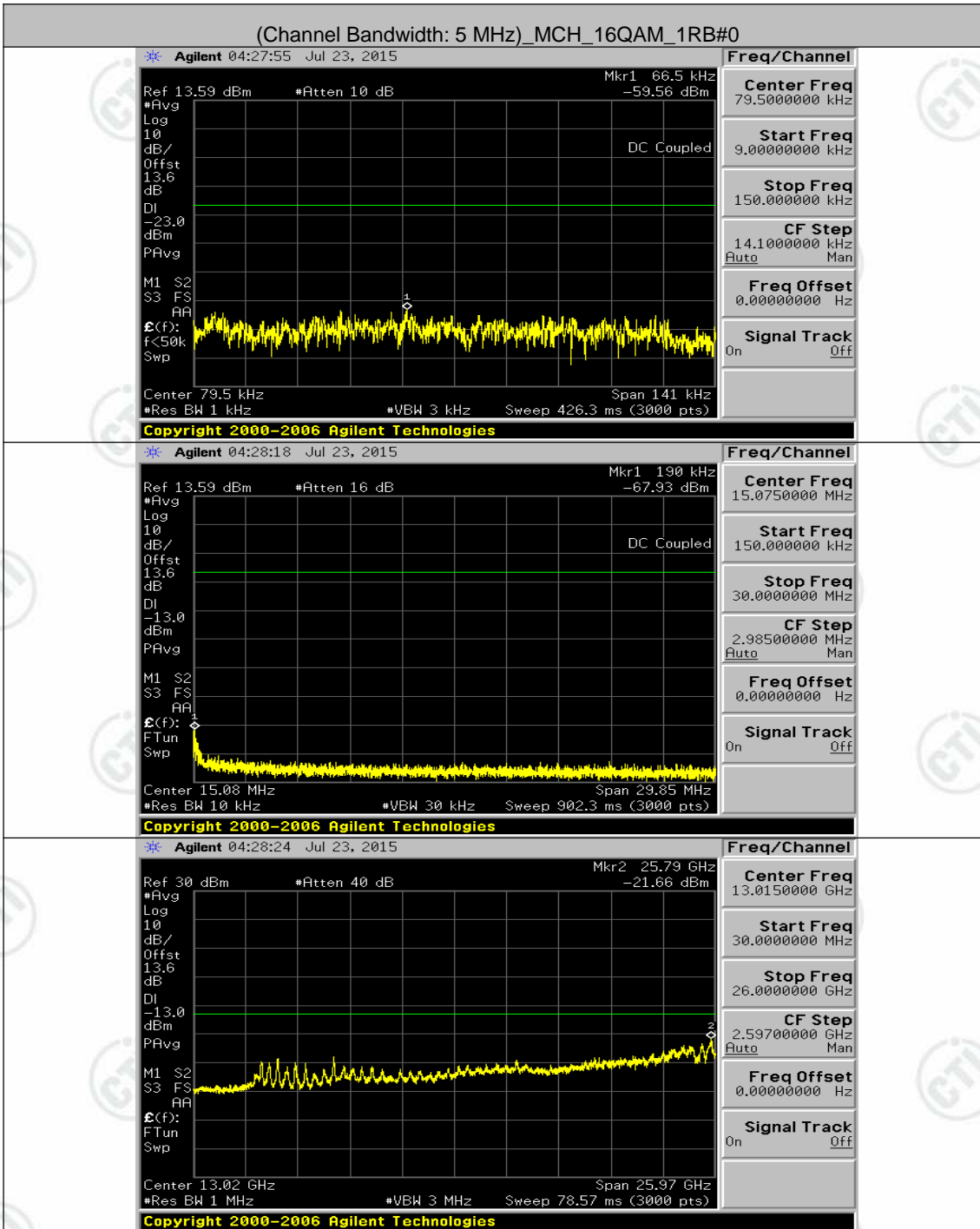


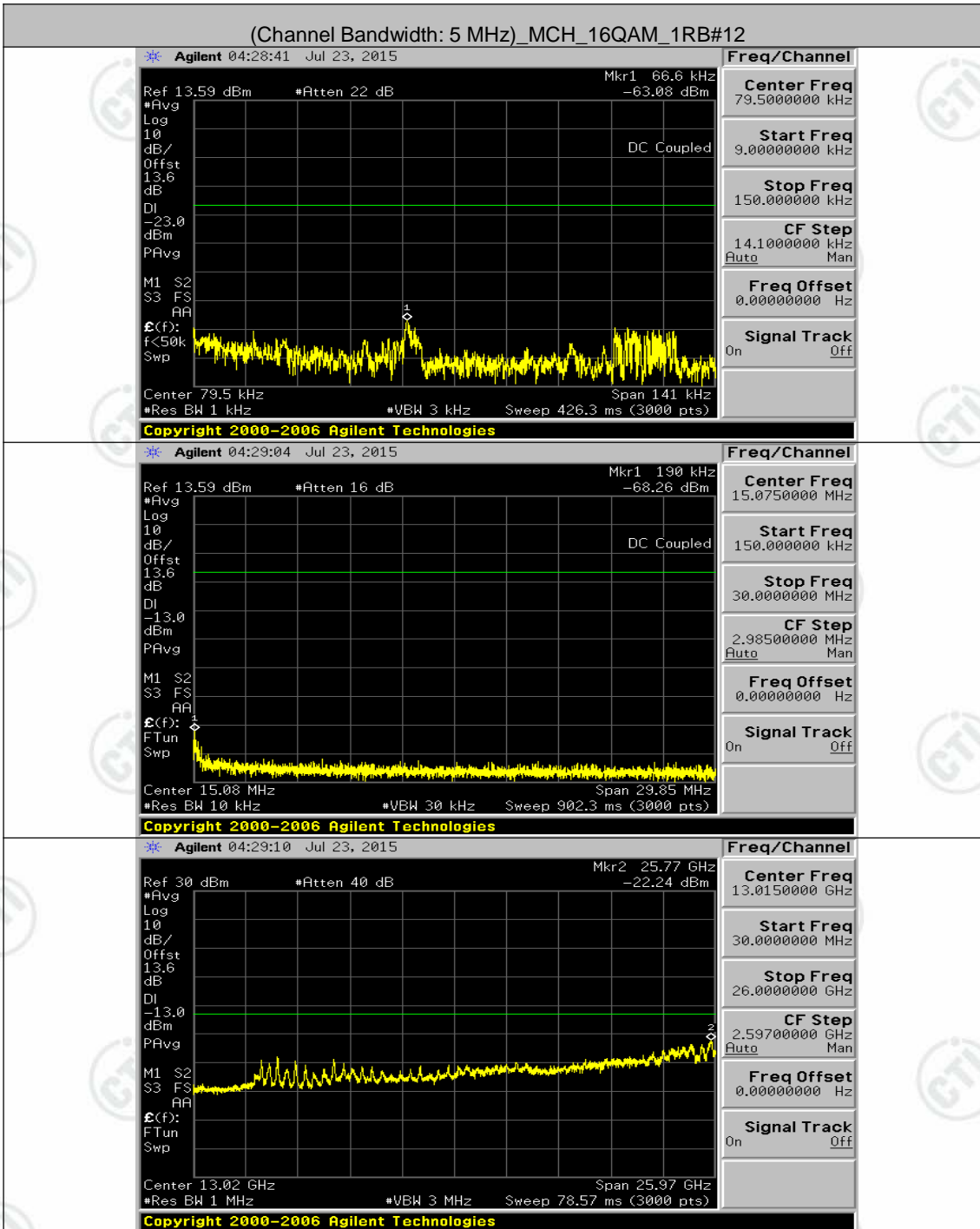


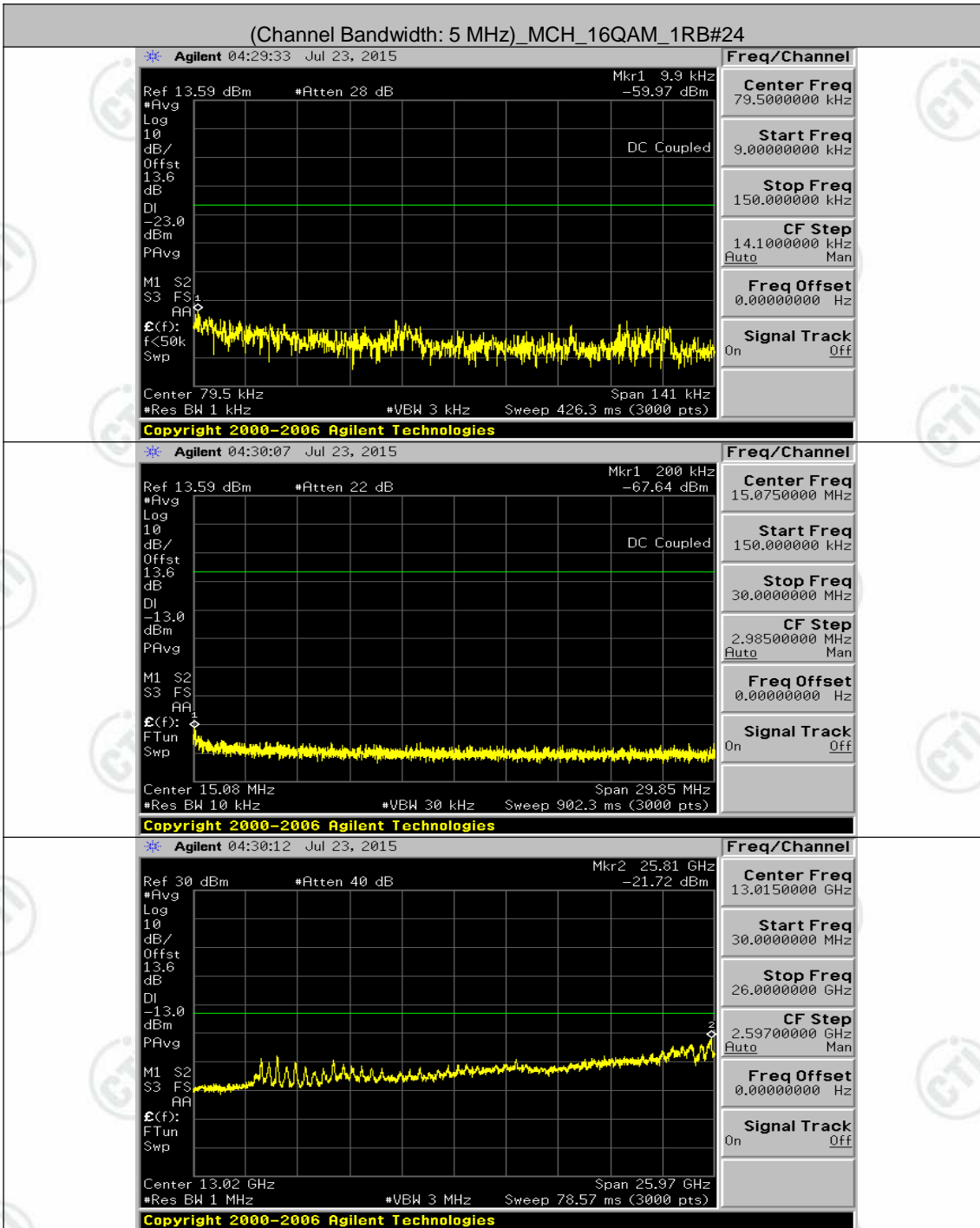




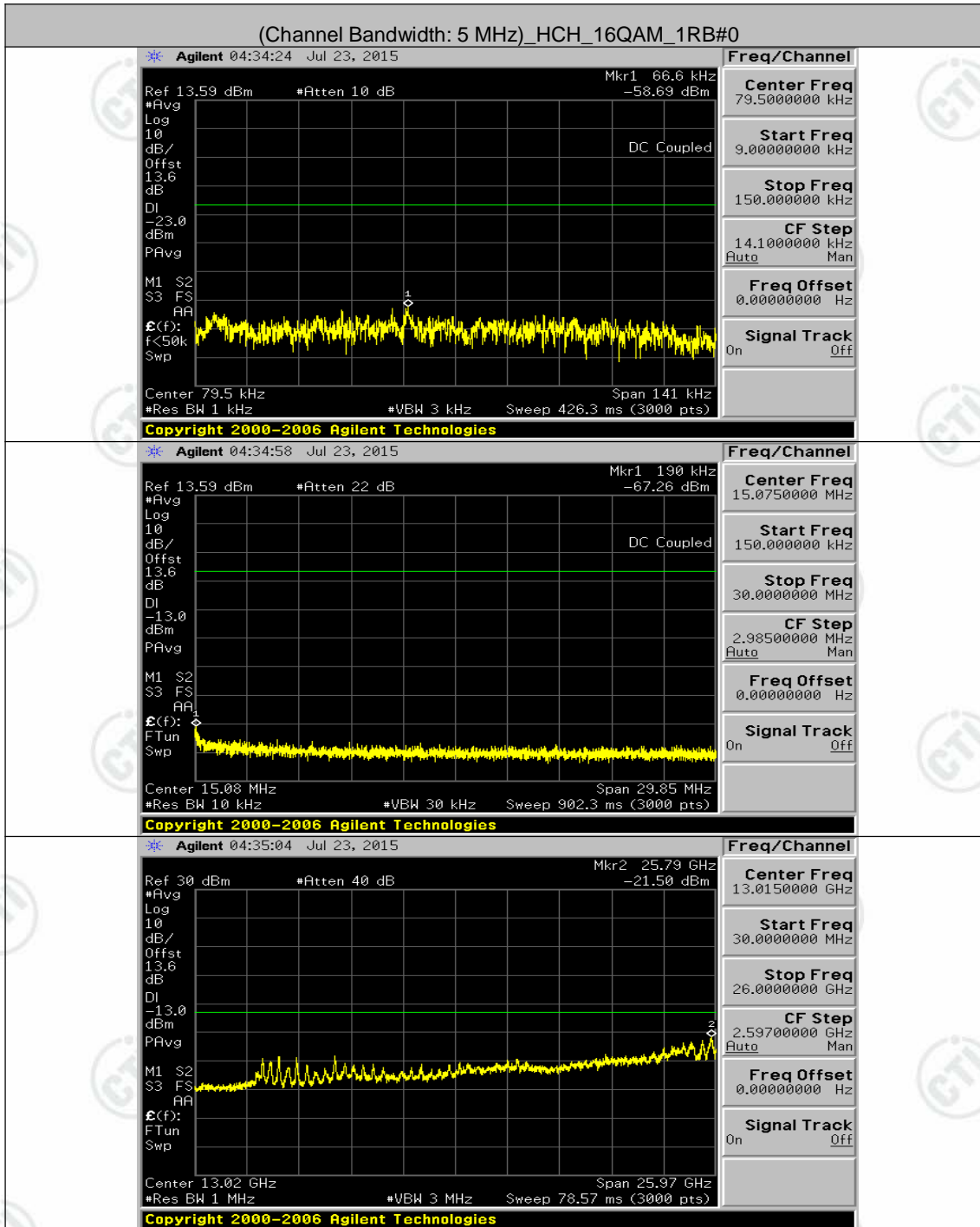


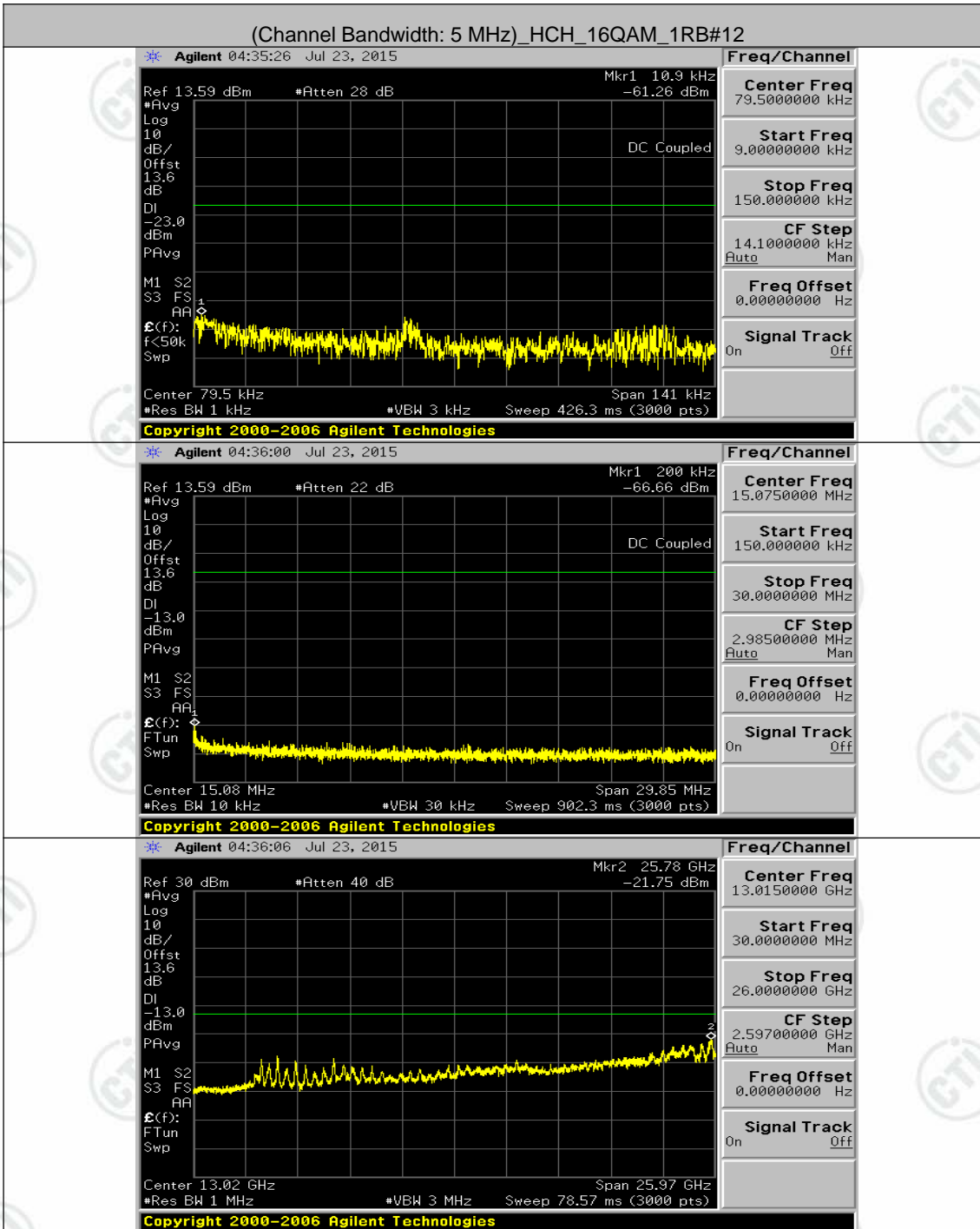


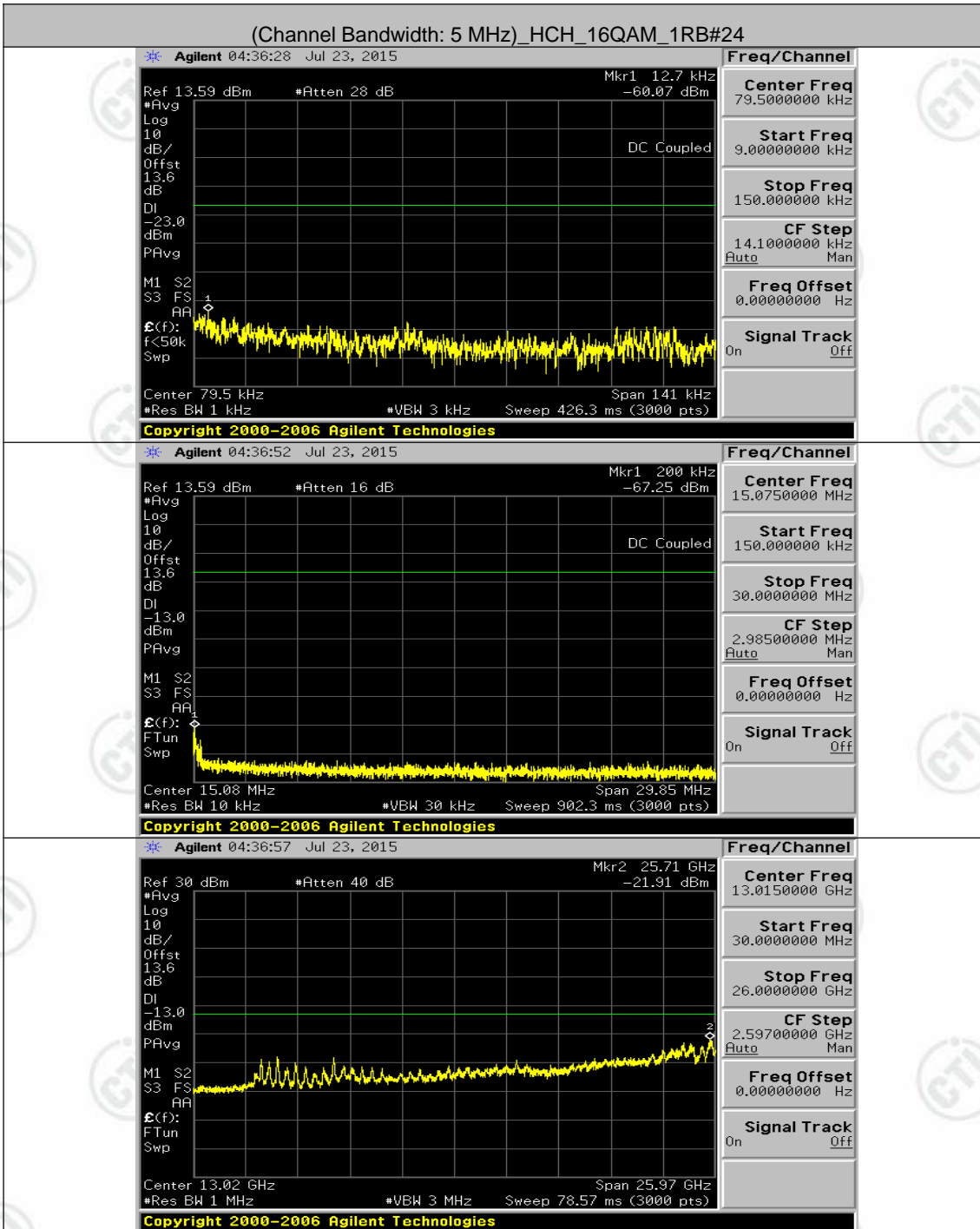




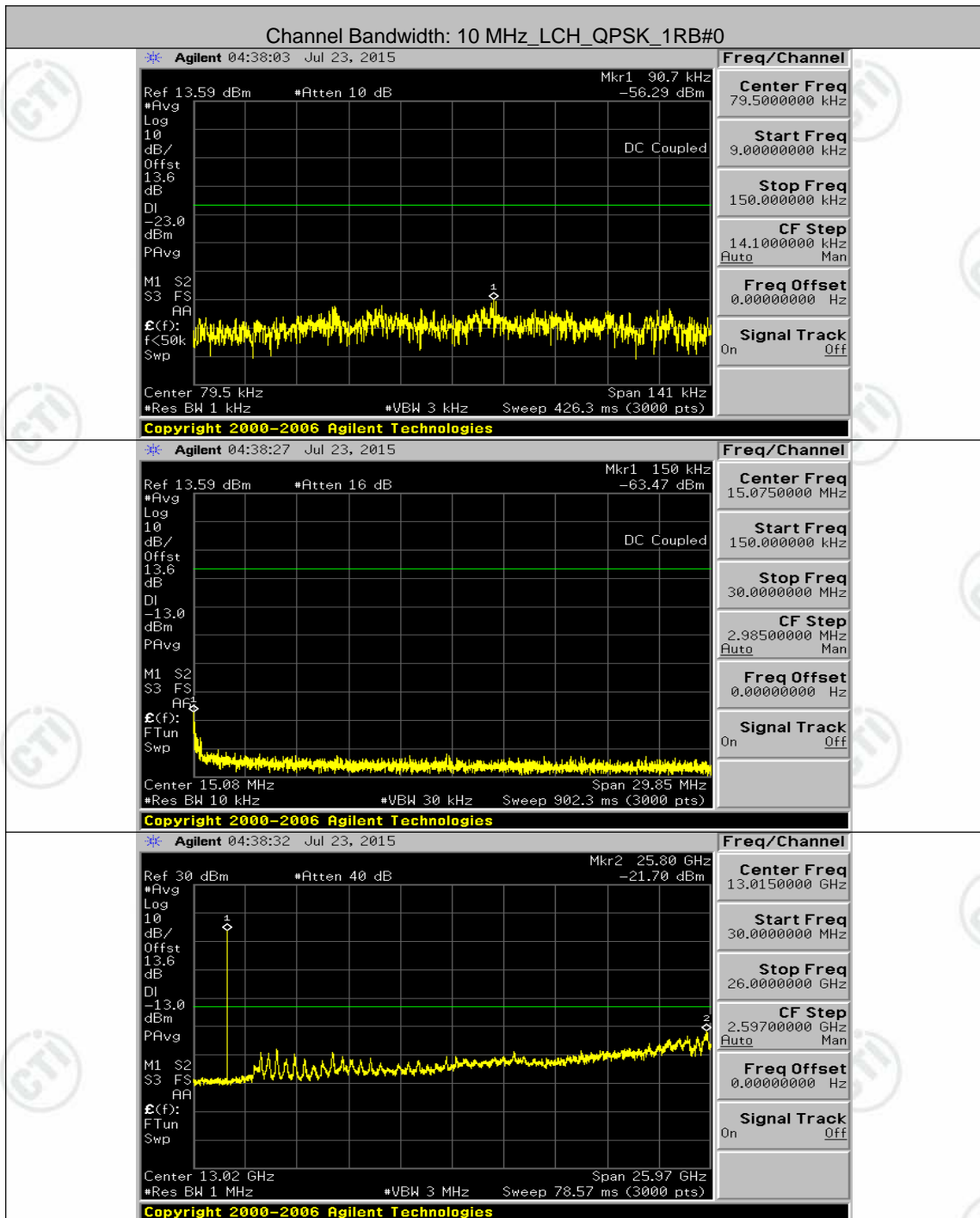


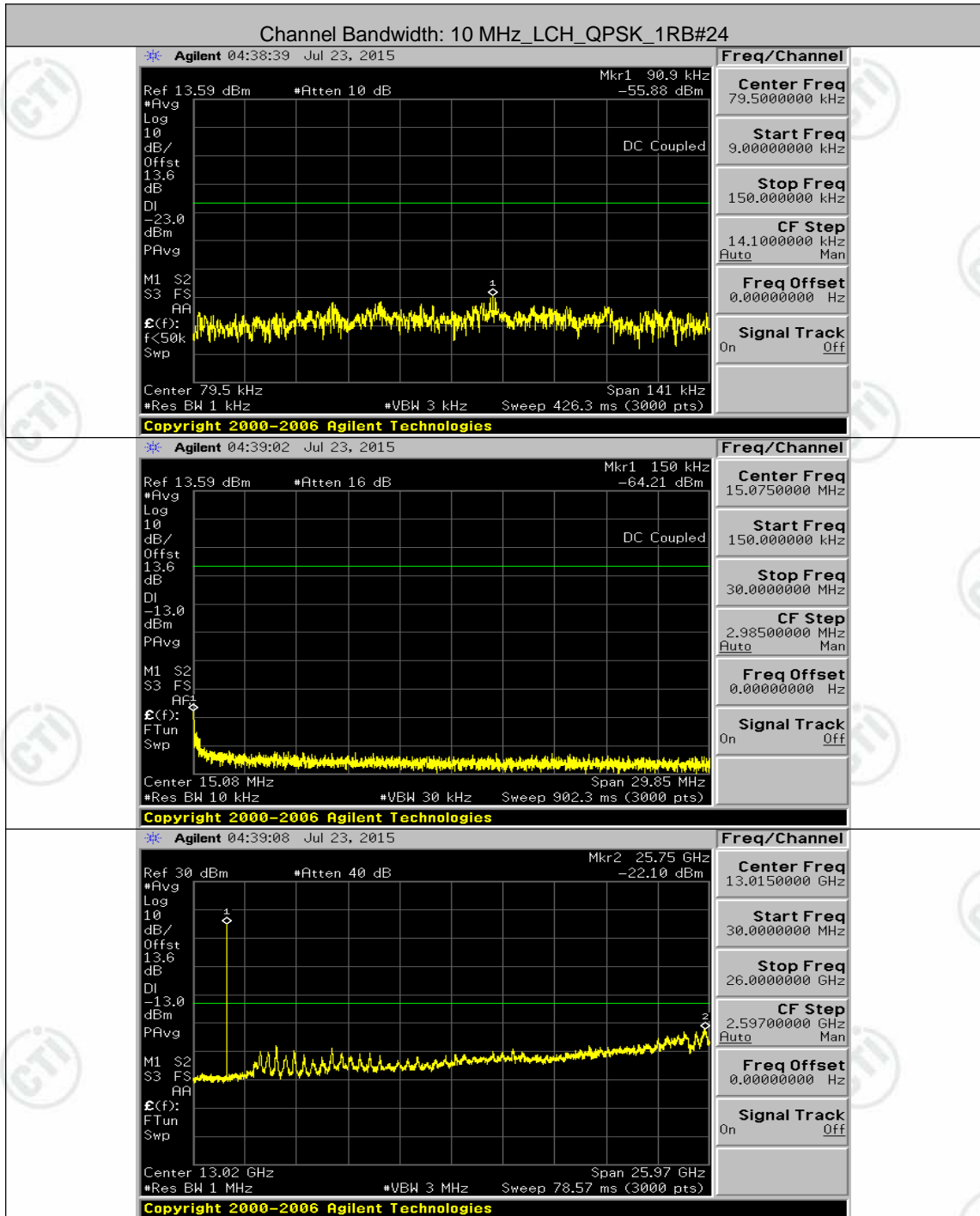


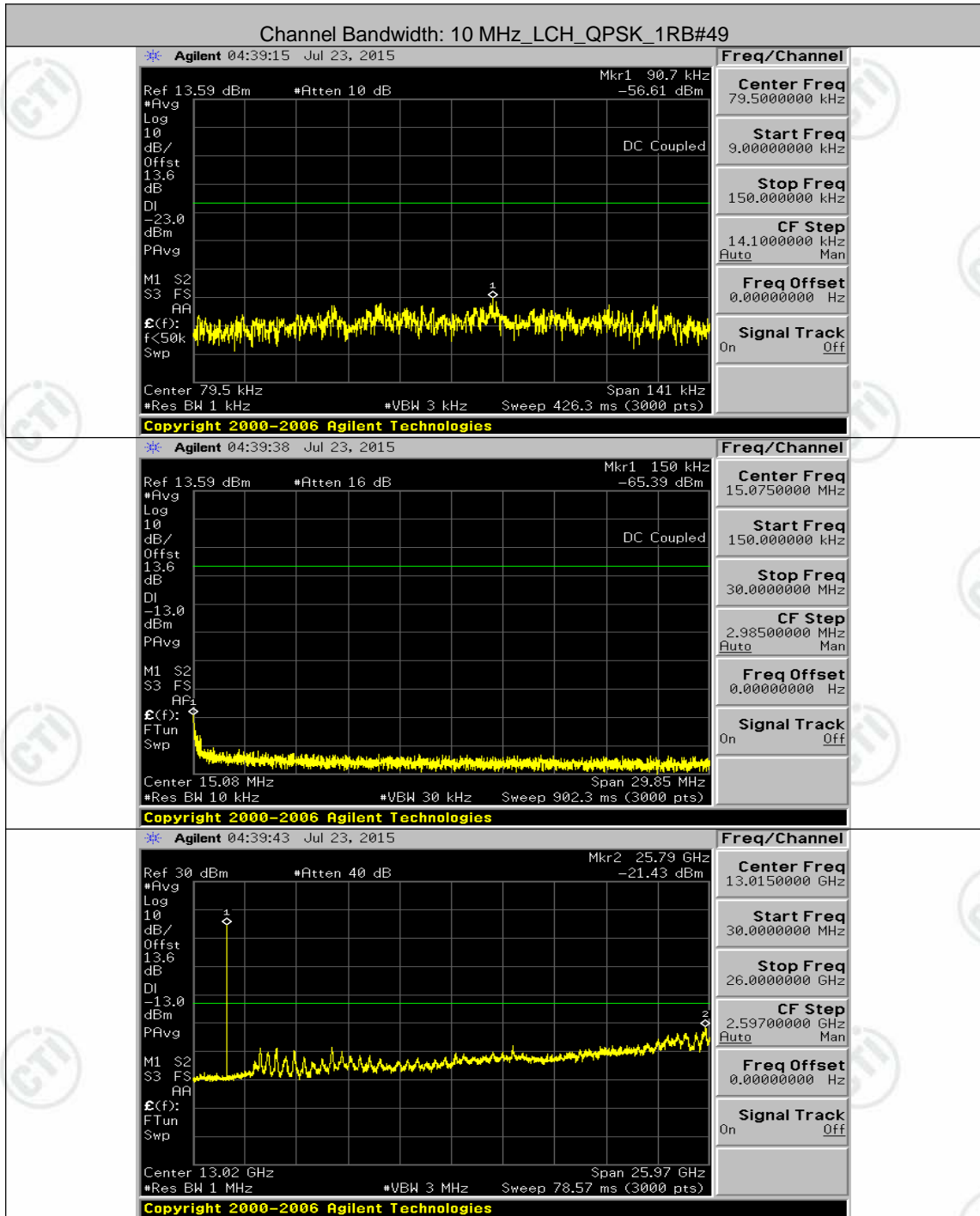


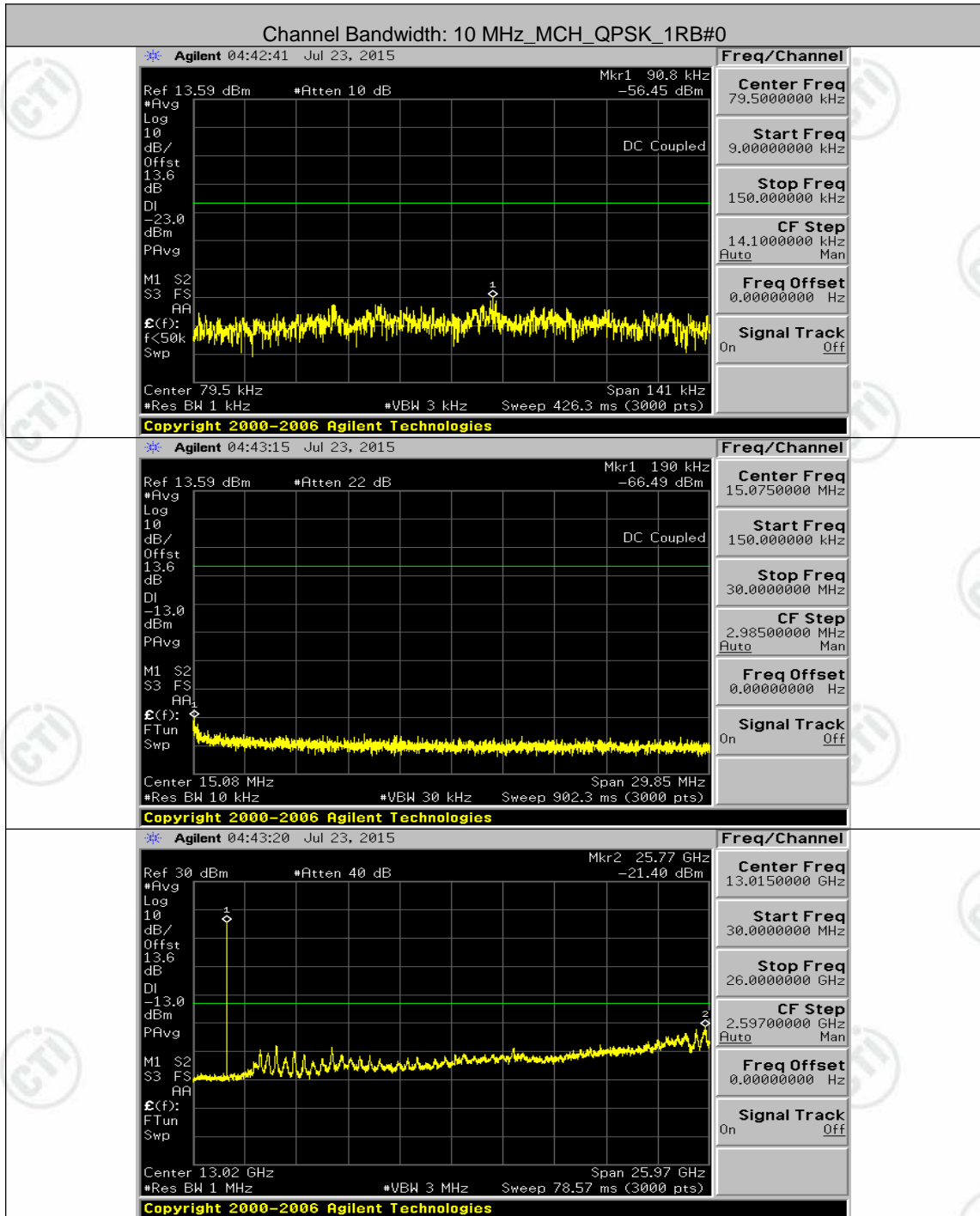


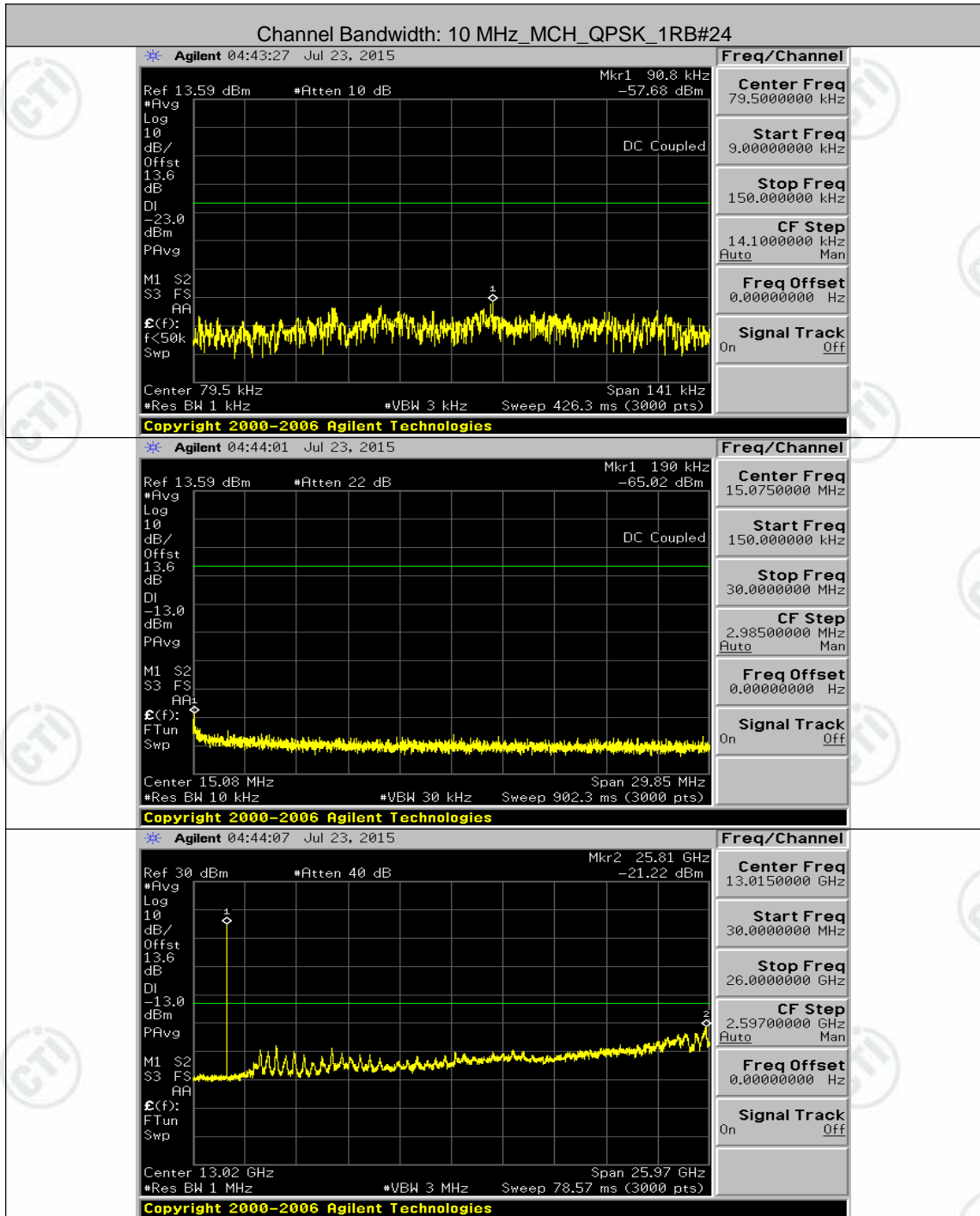
Channel Bandwidth: 10 MHz



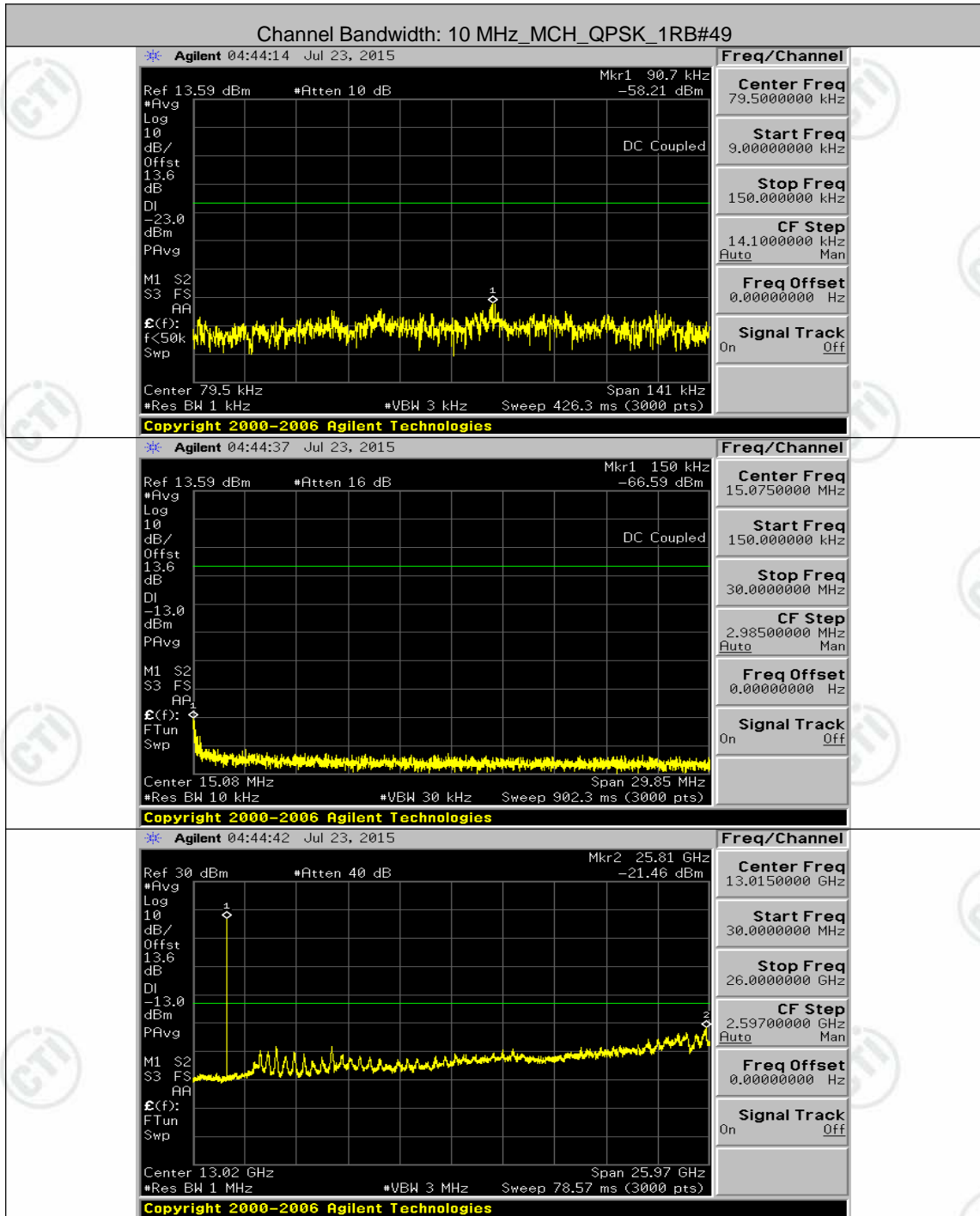


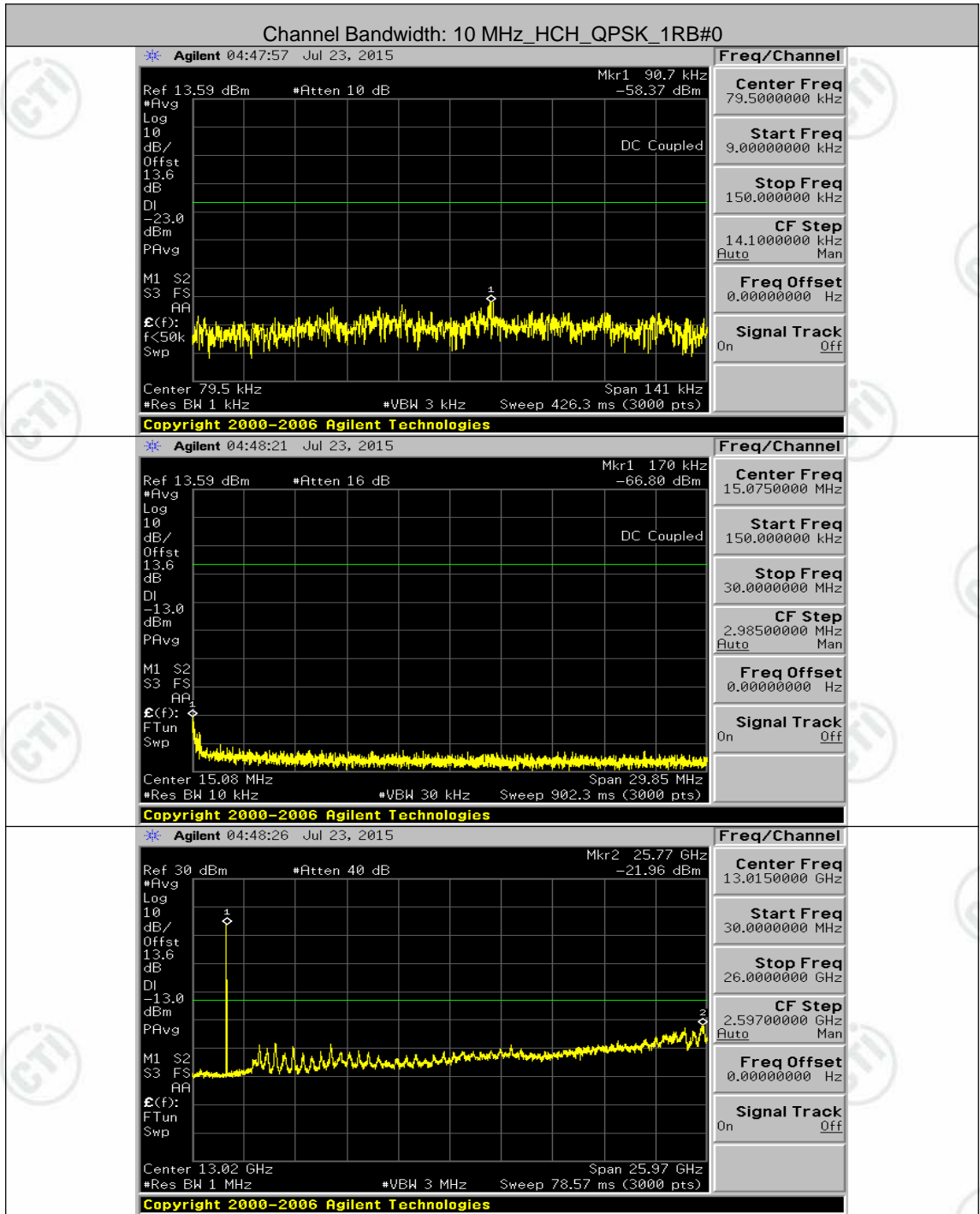


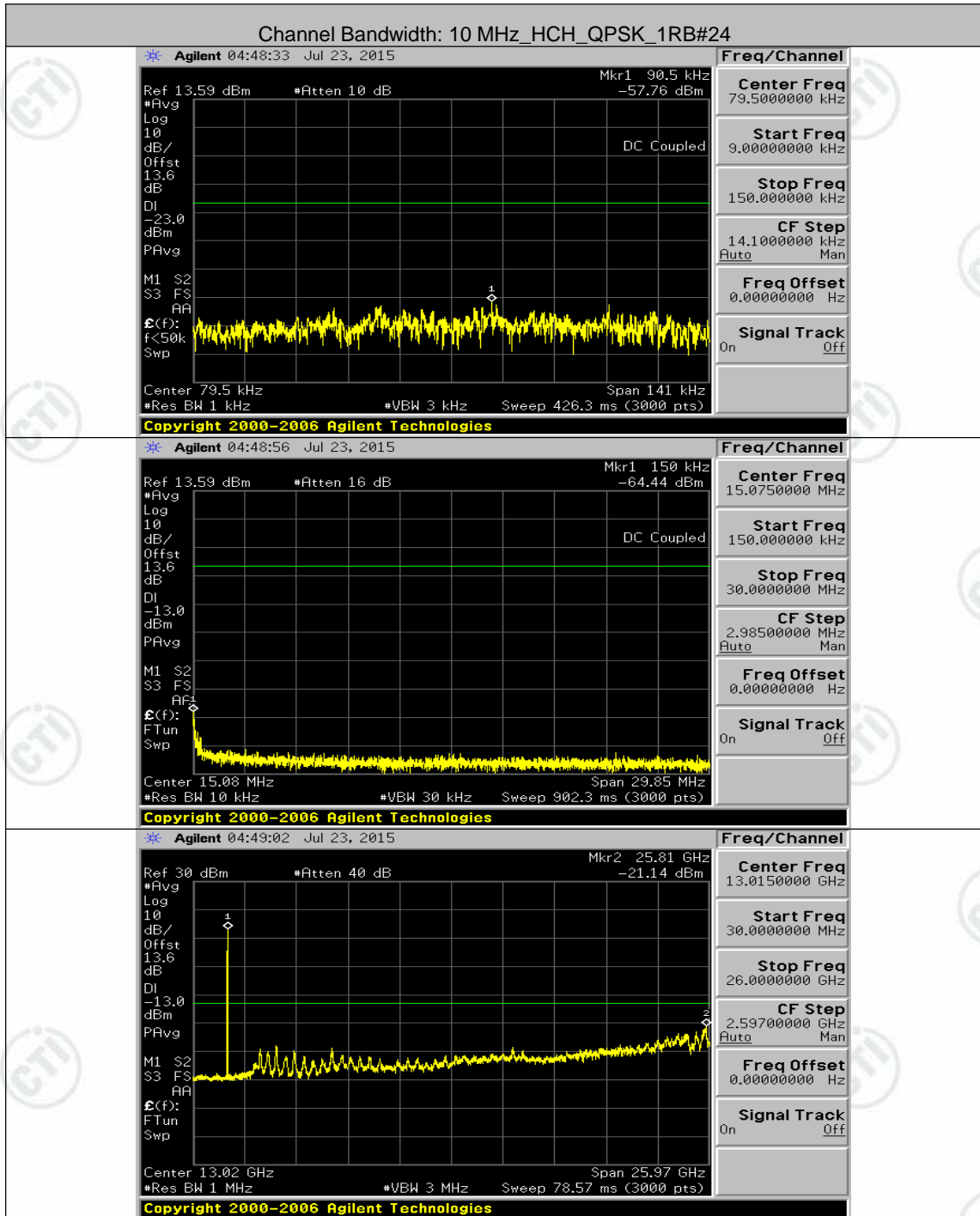


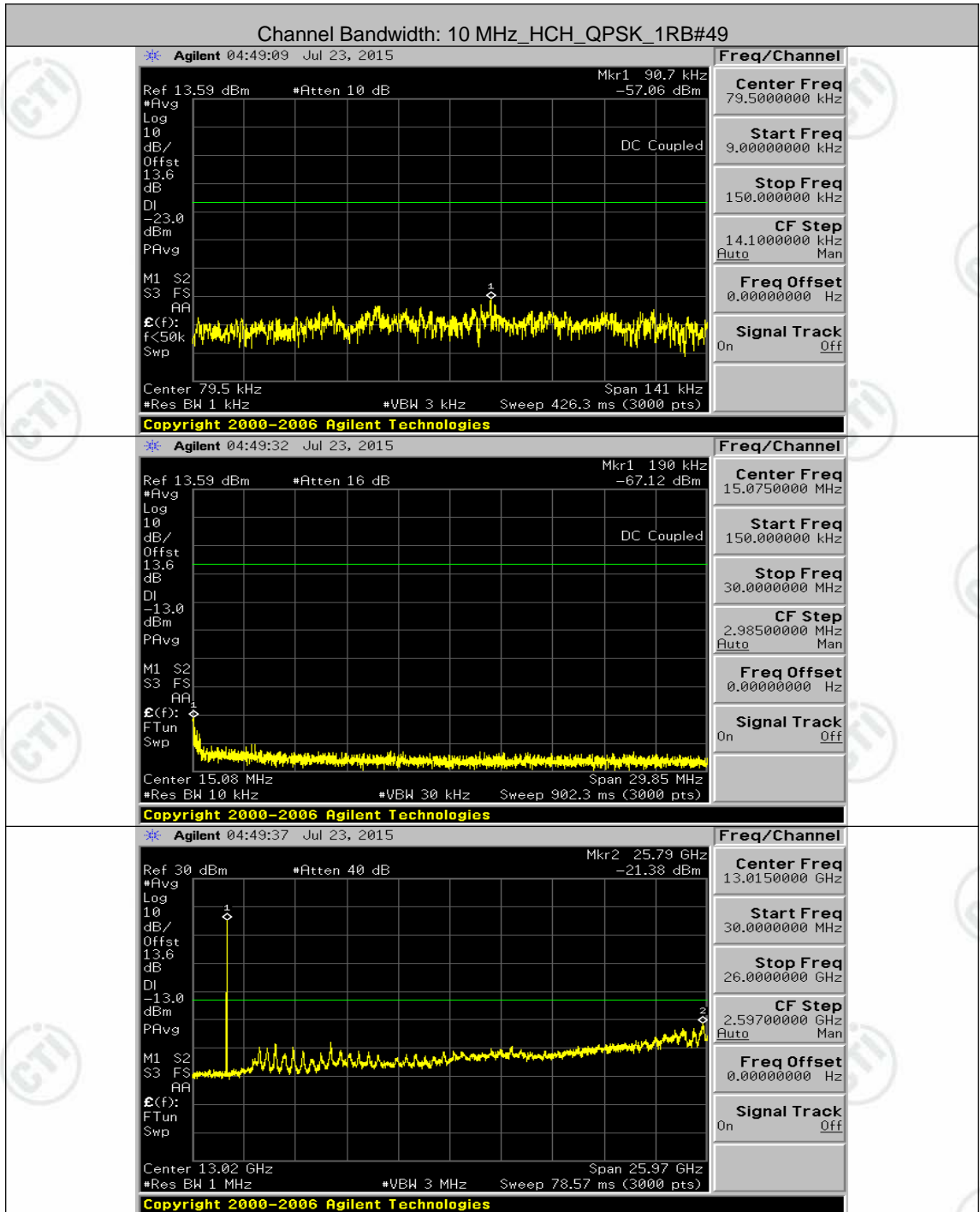


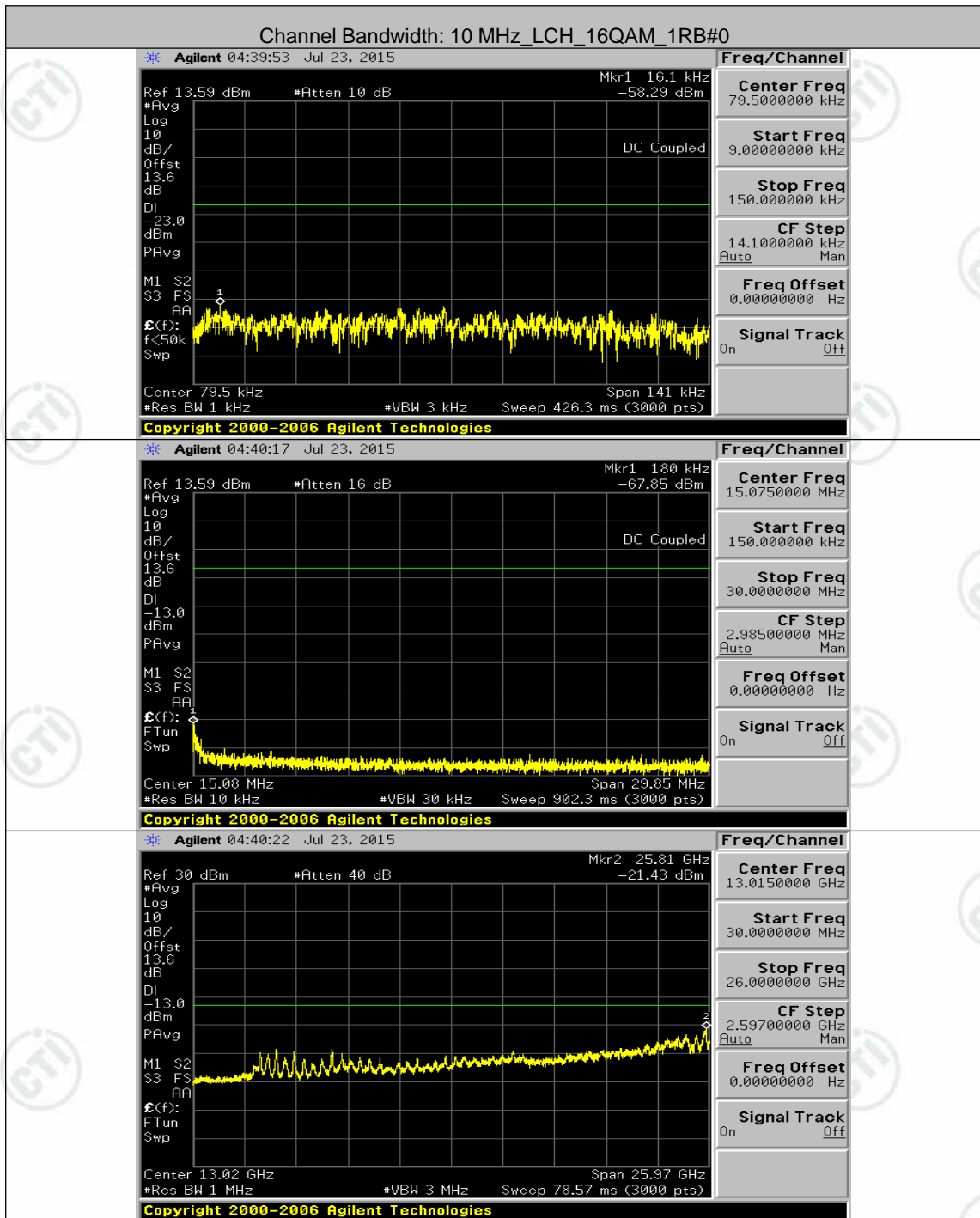


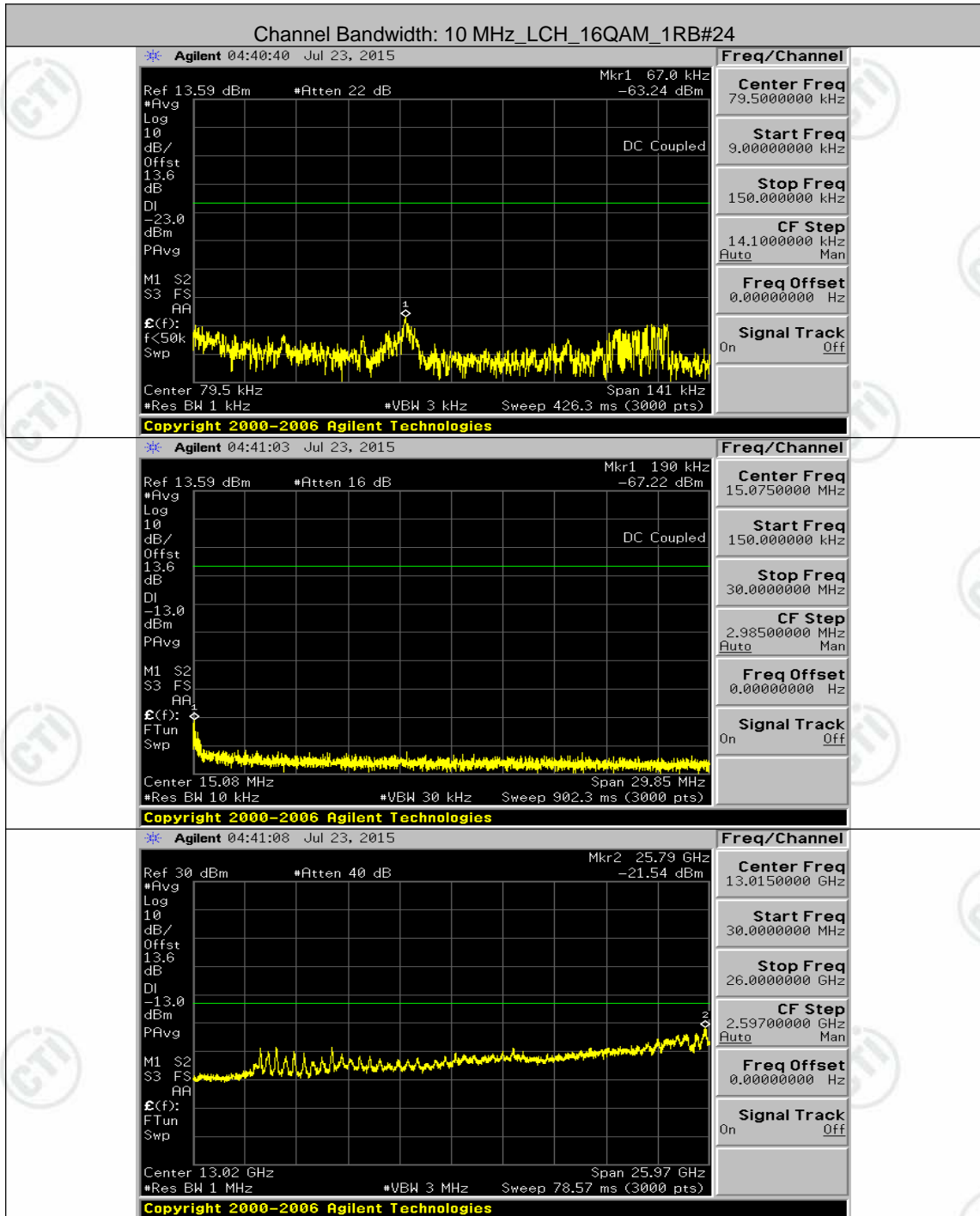


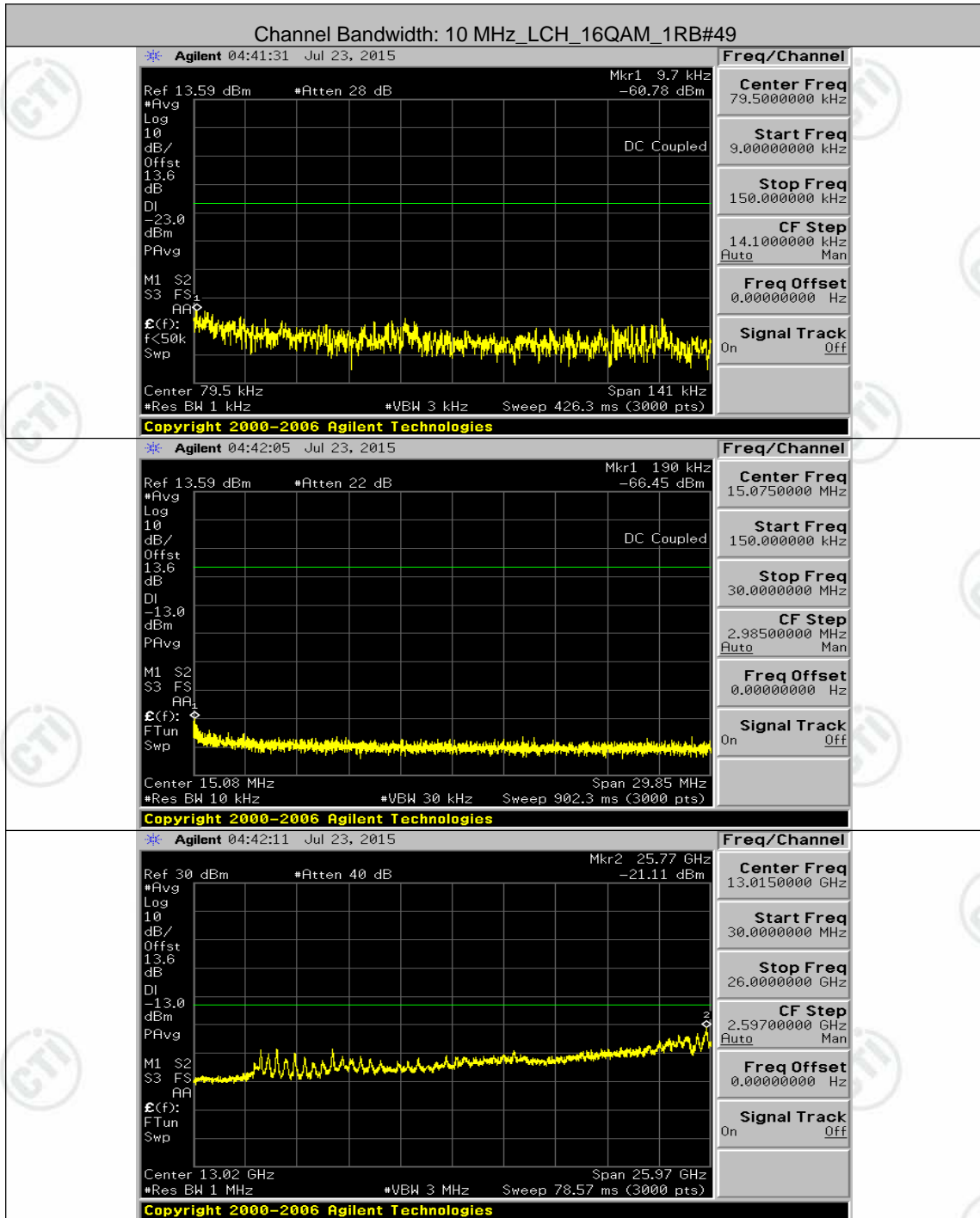


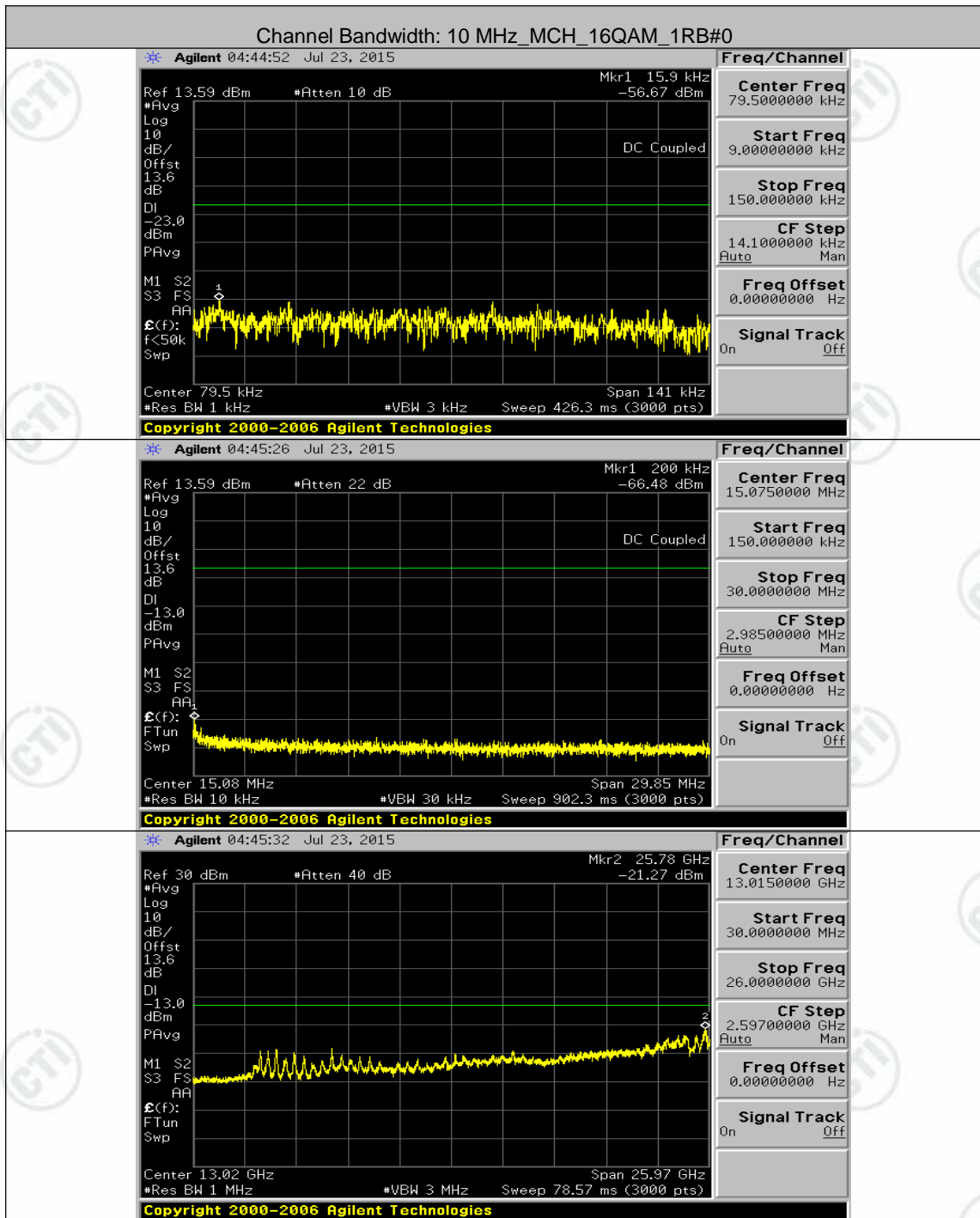




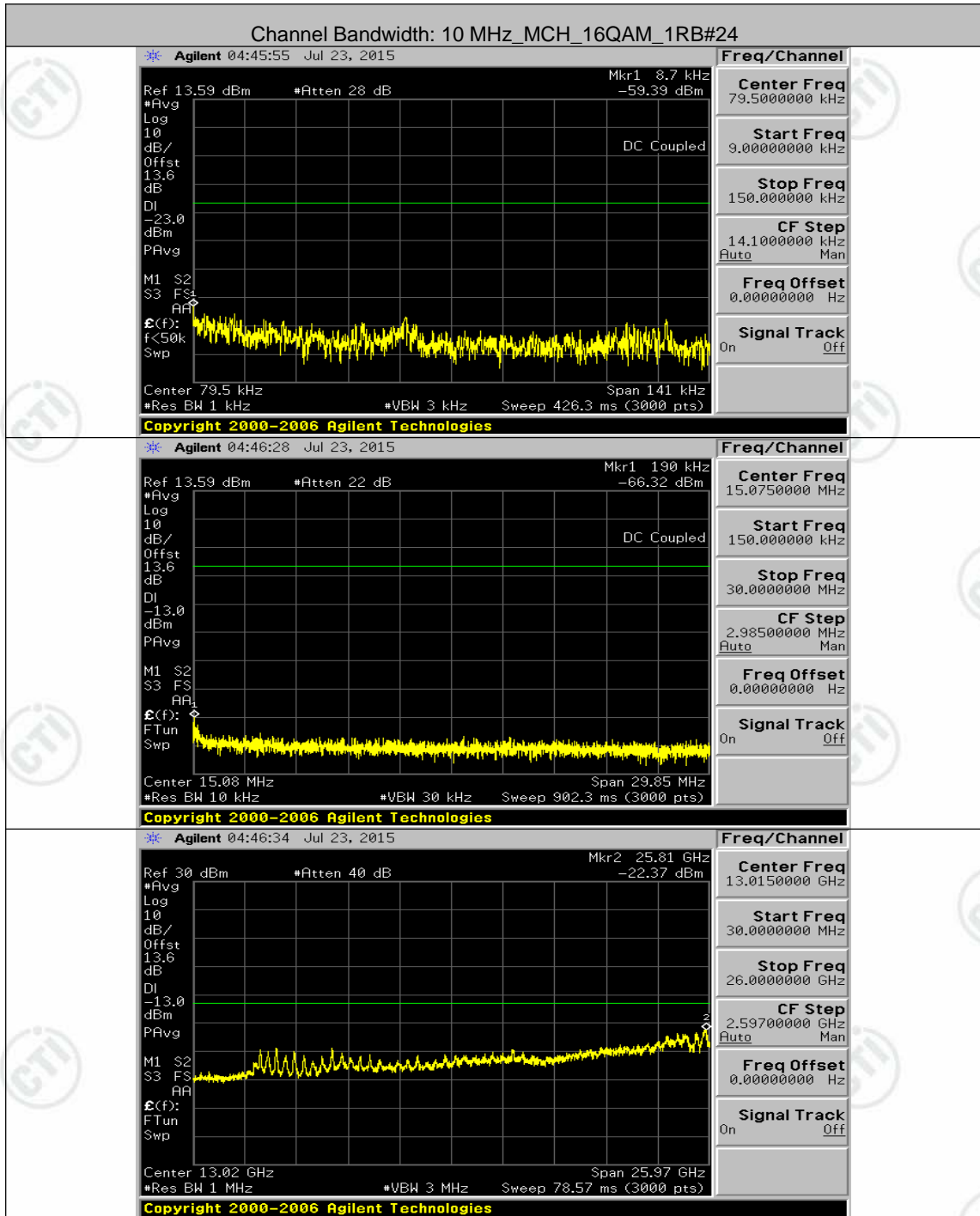


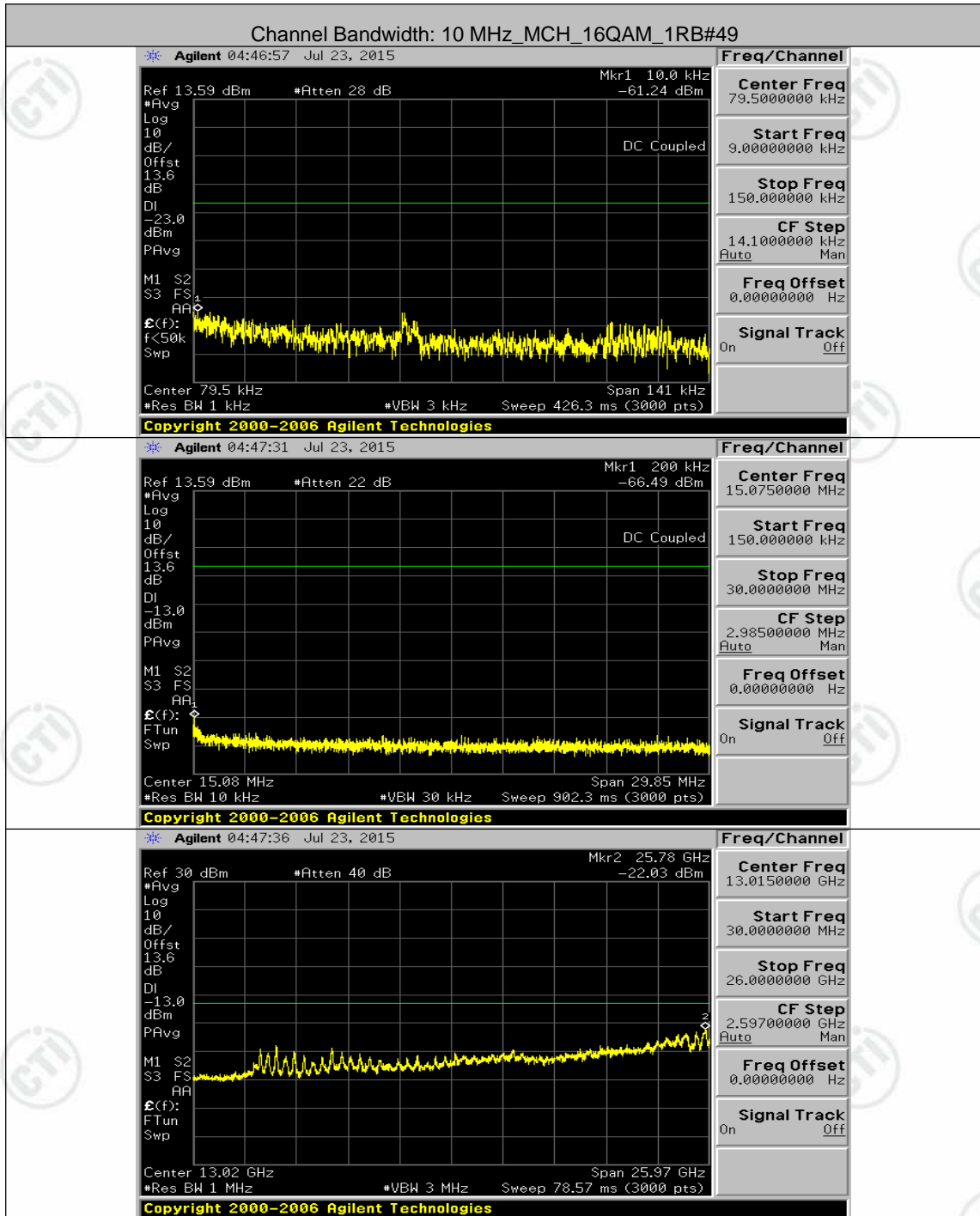


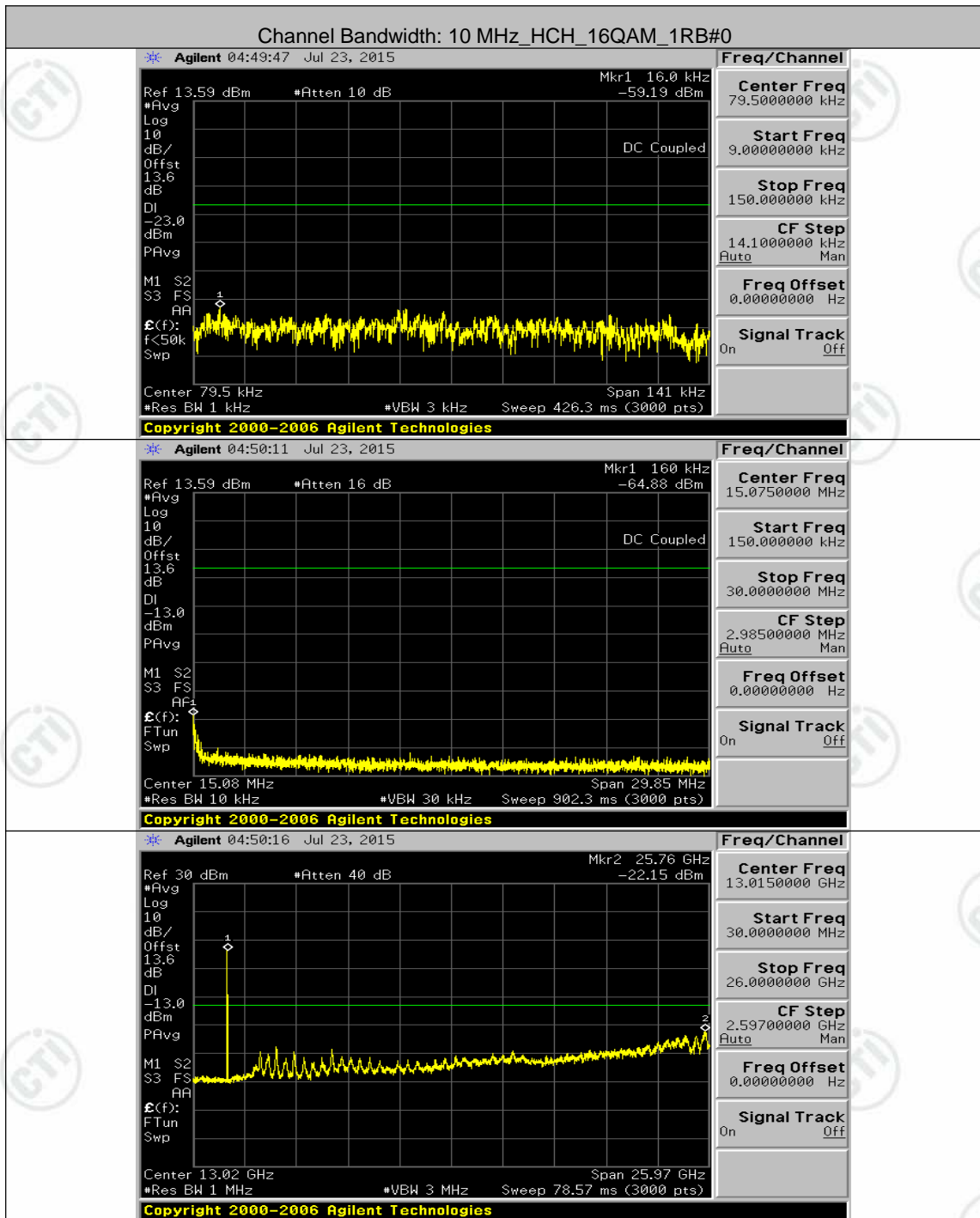


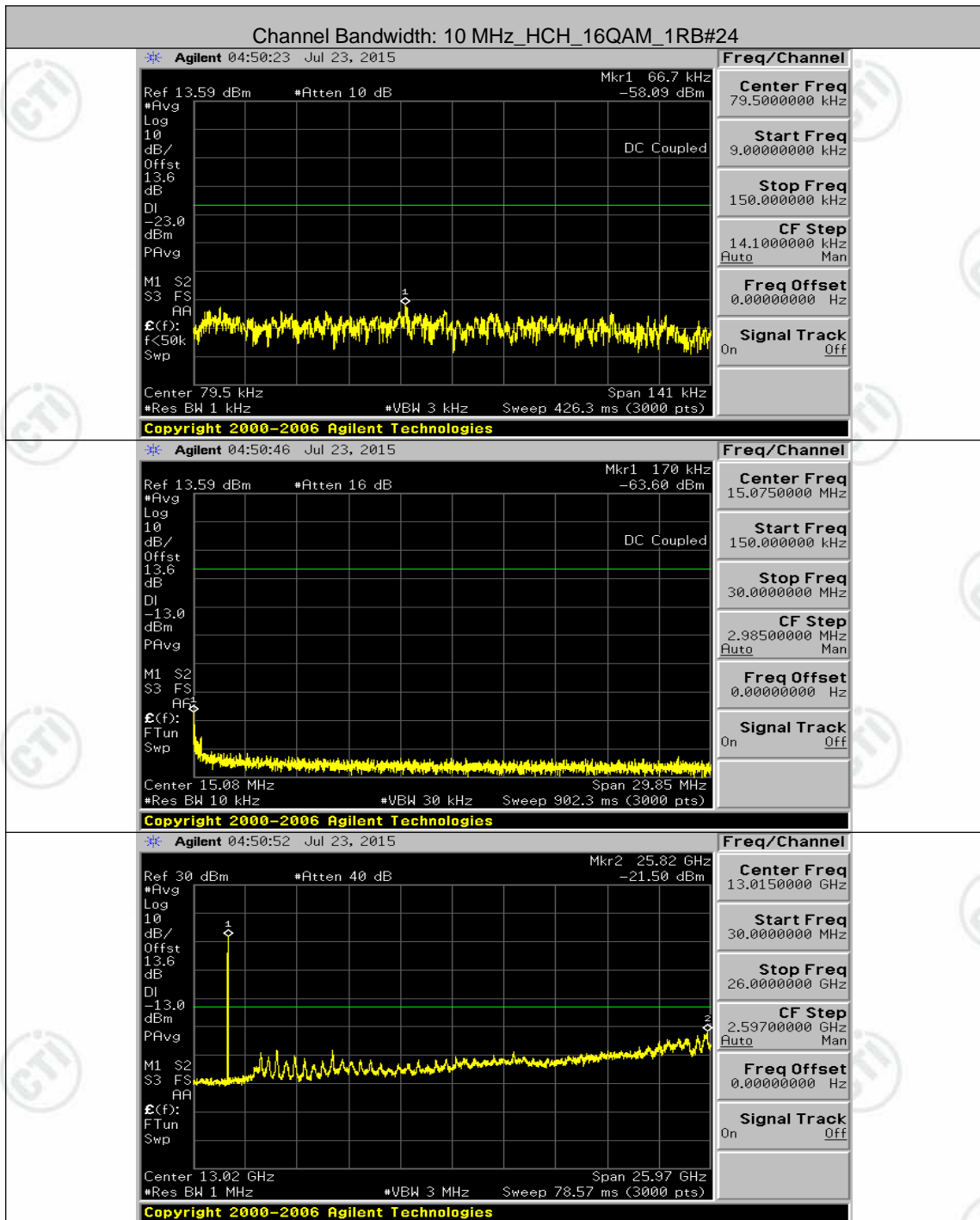


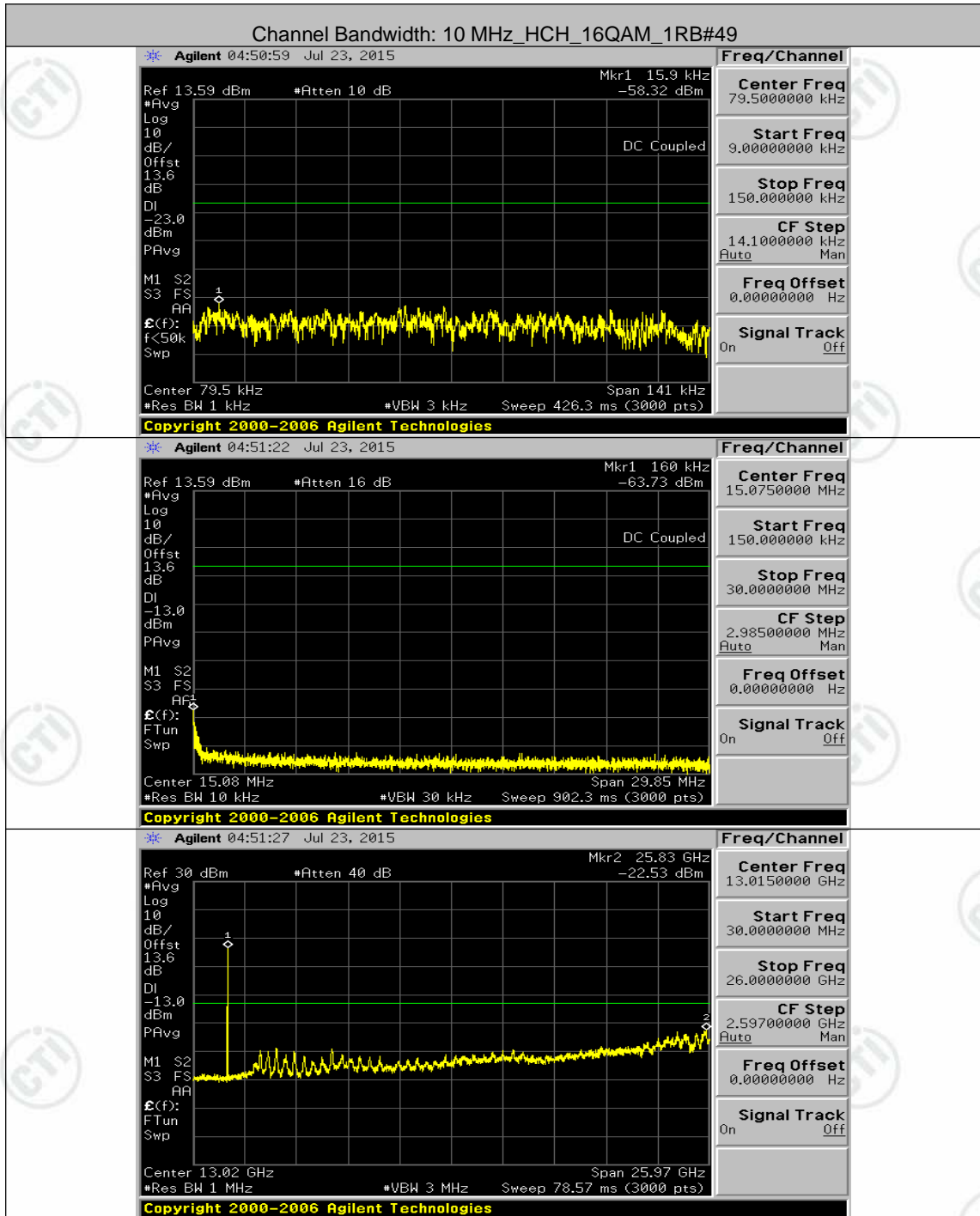




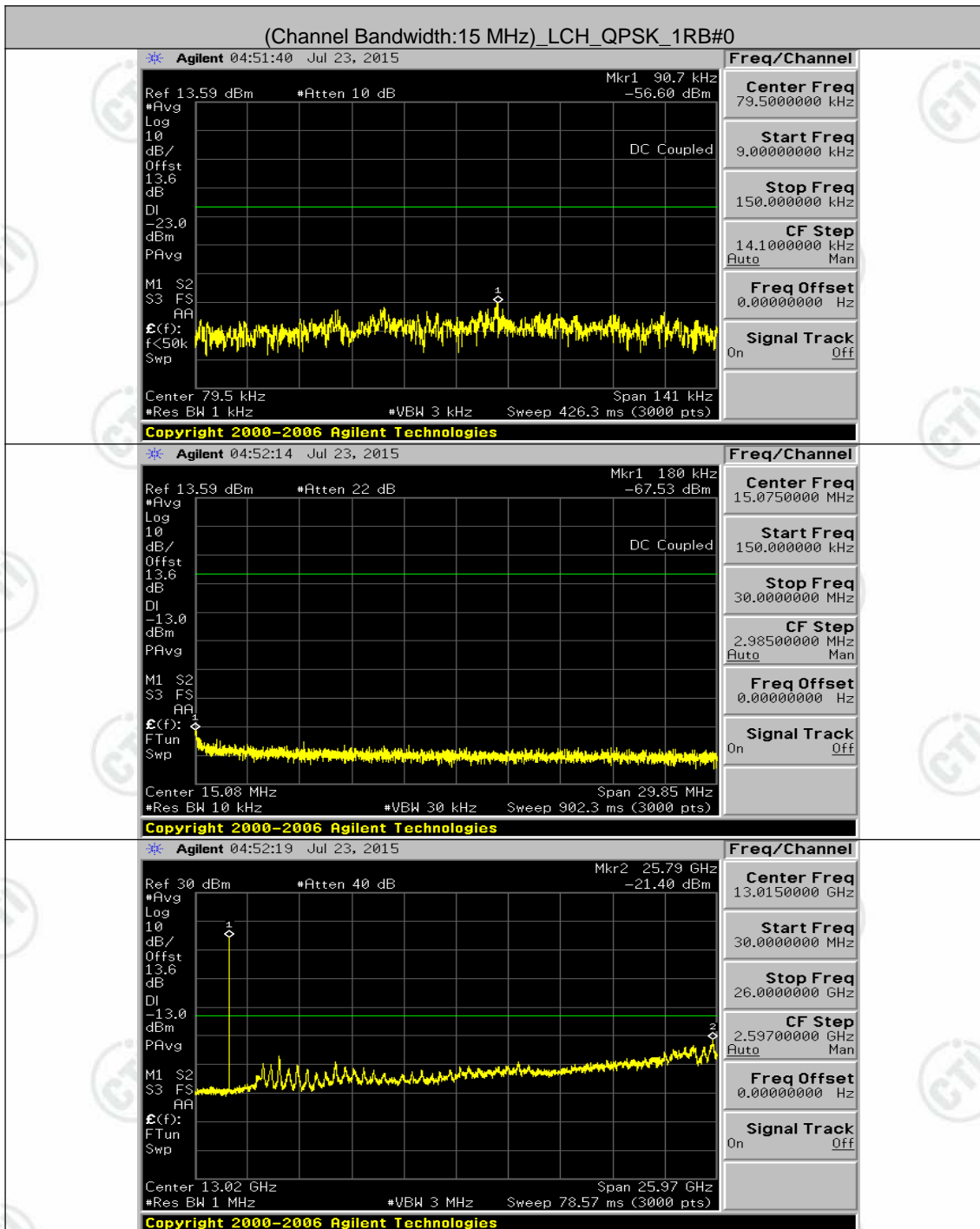


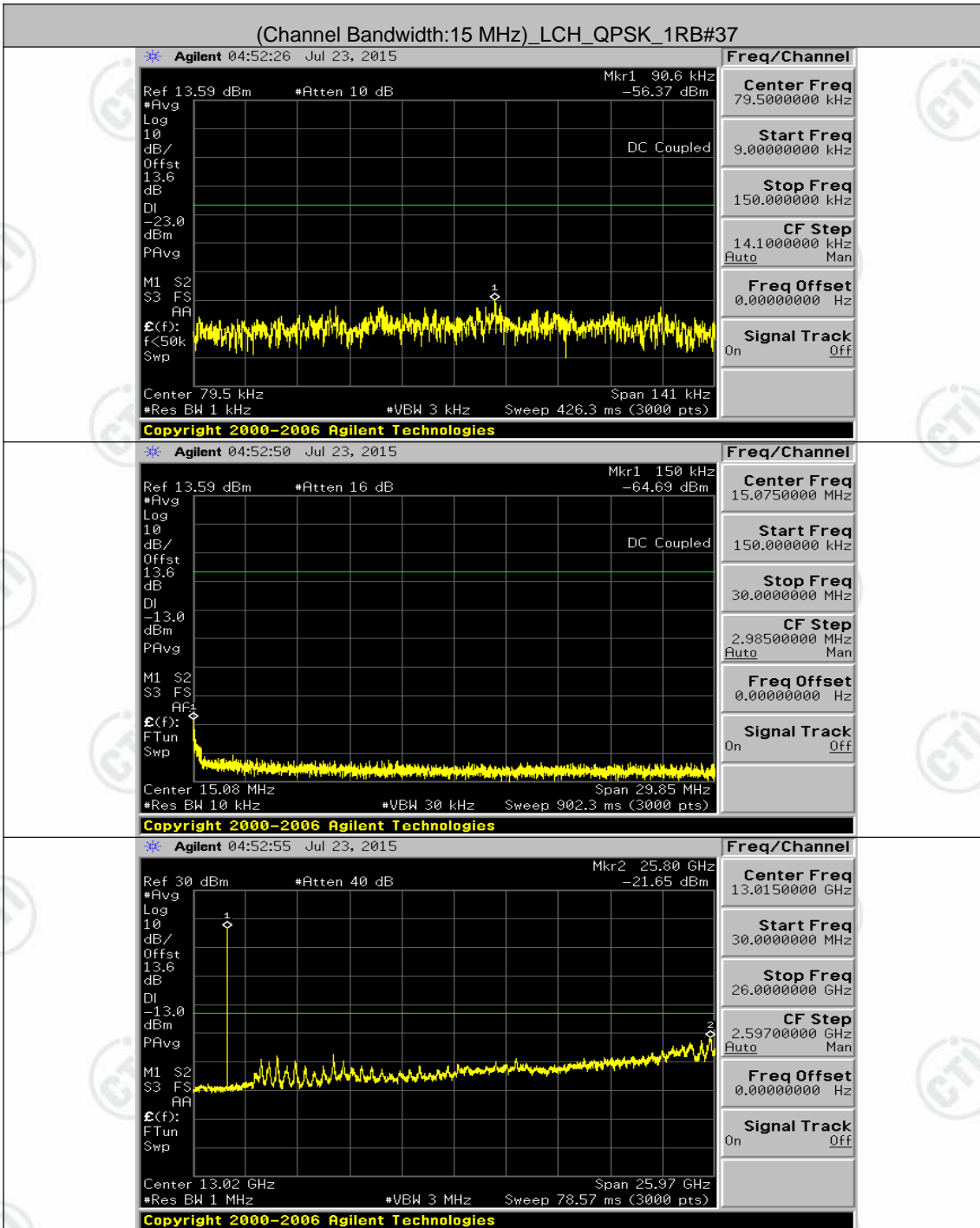


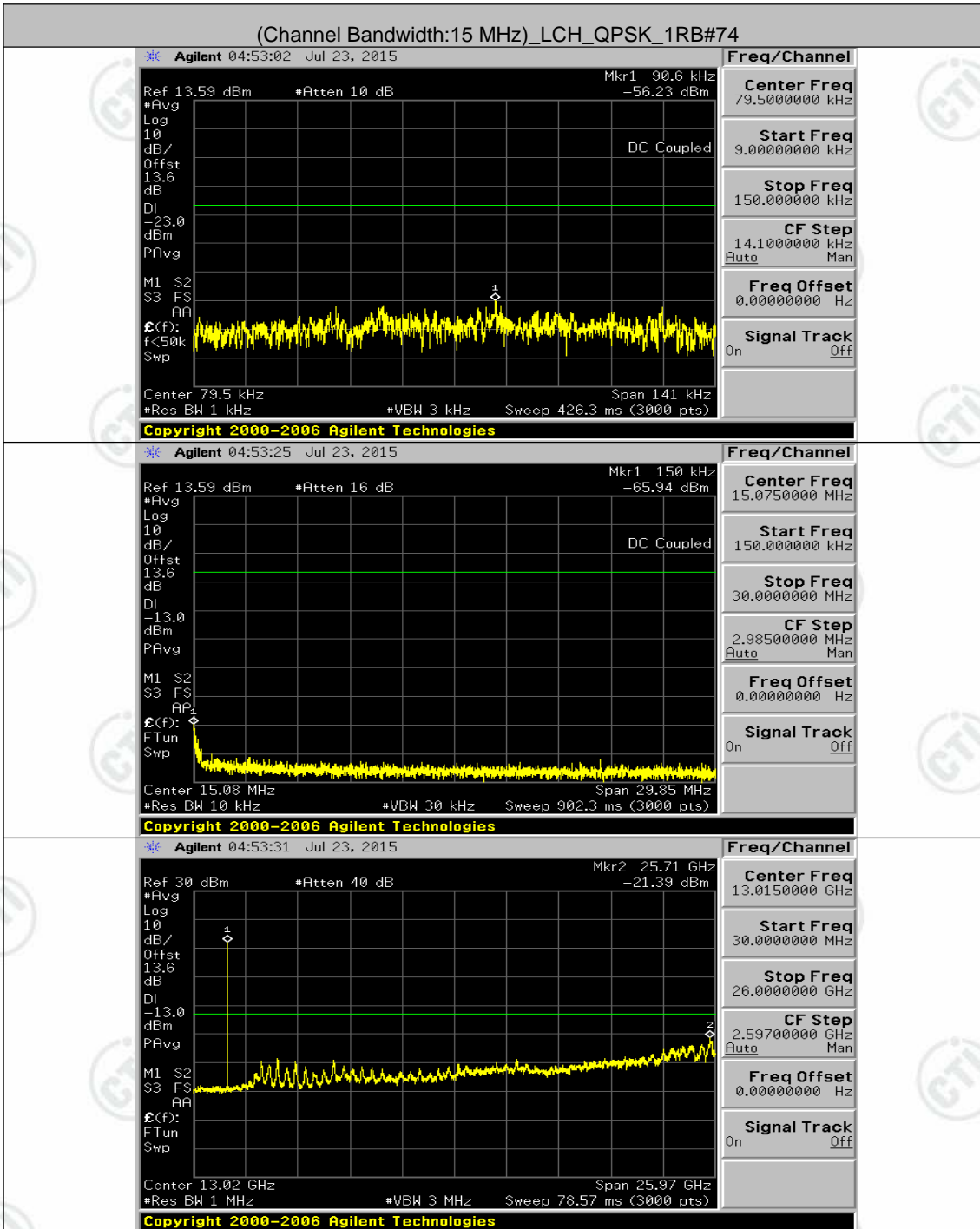




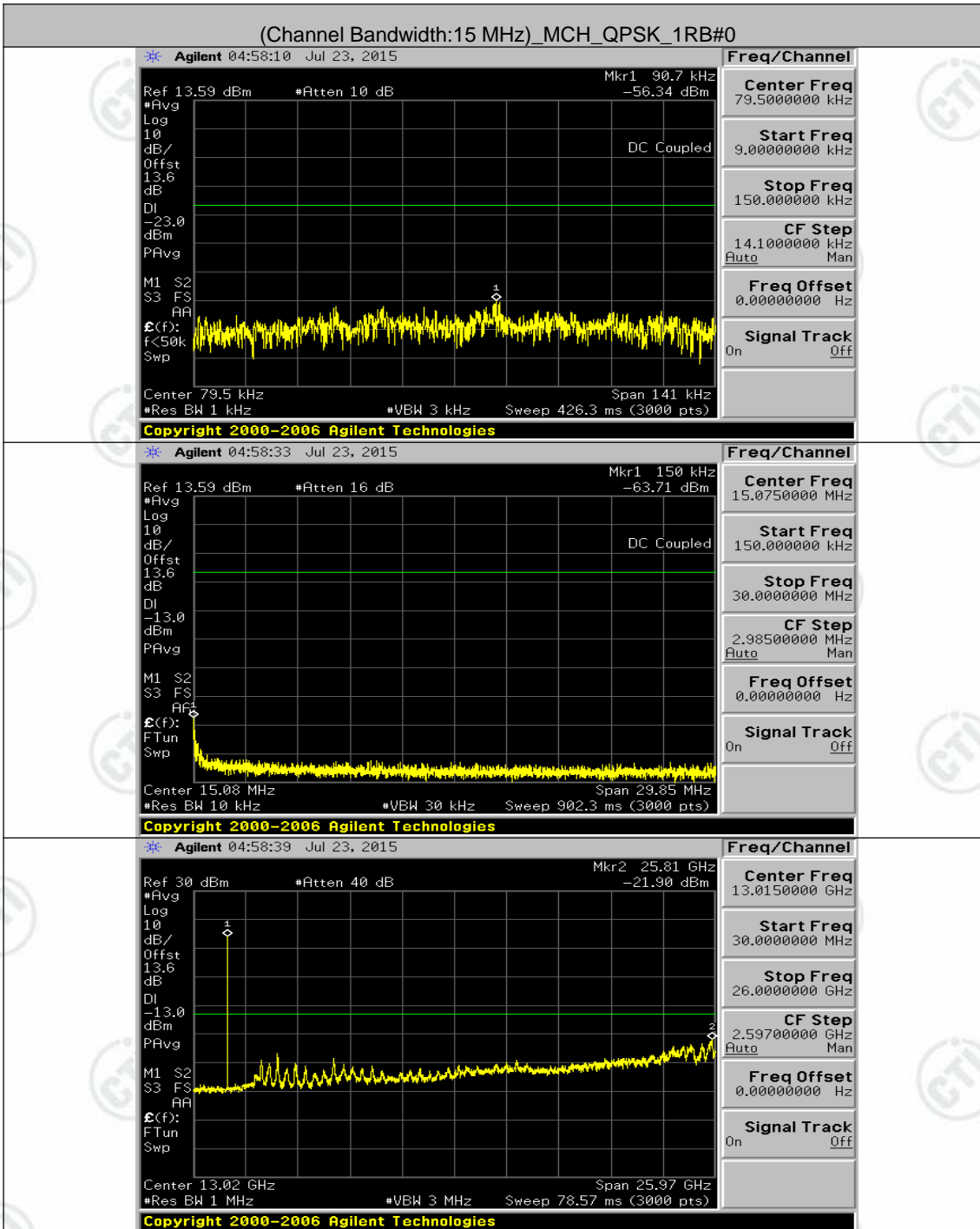
Channel Bandwidth: 15 MHz

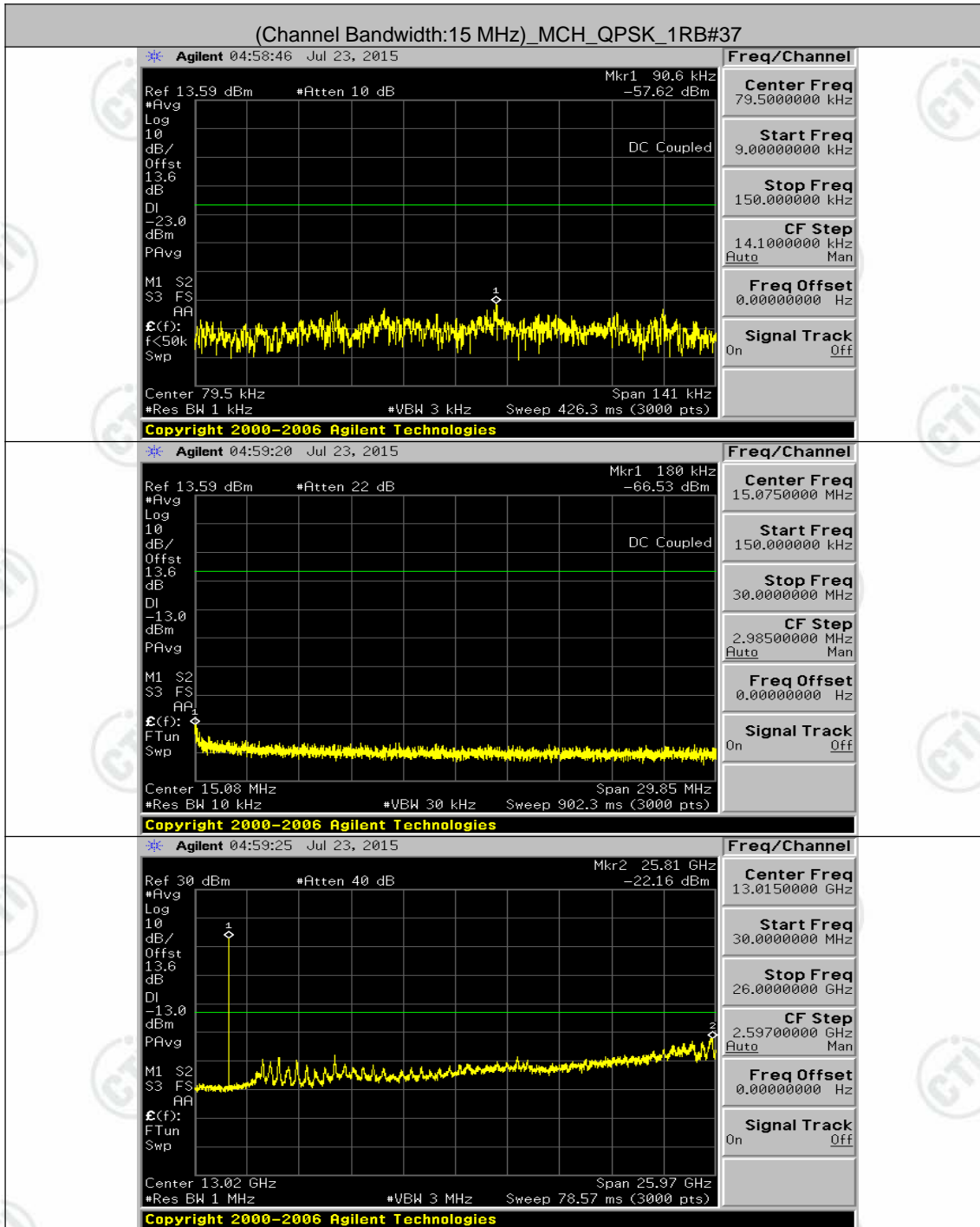


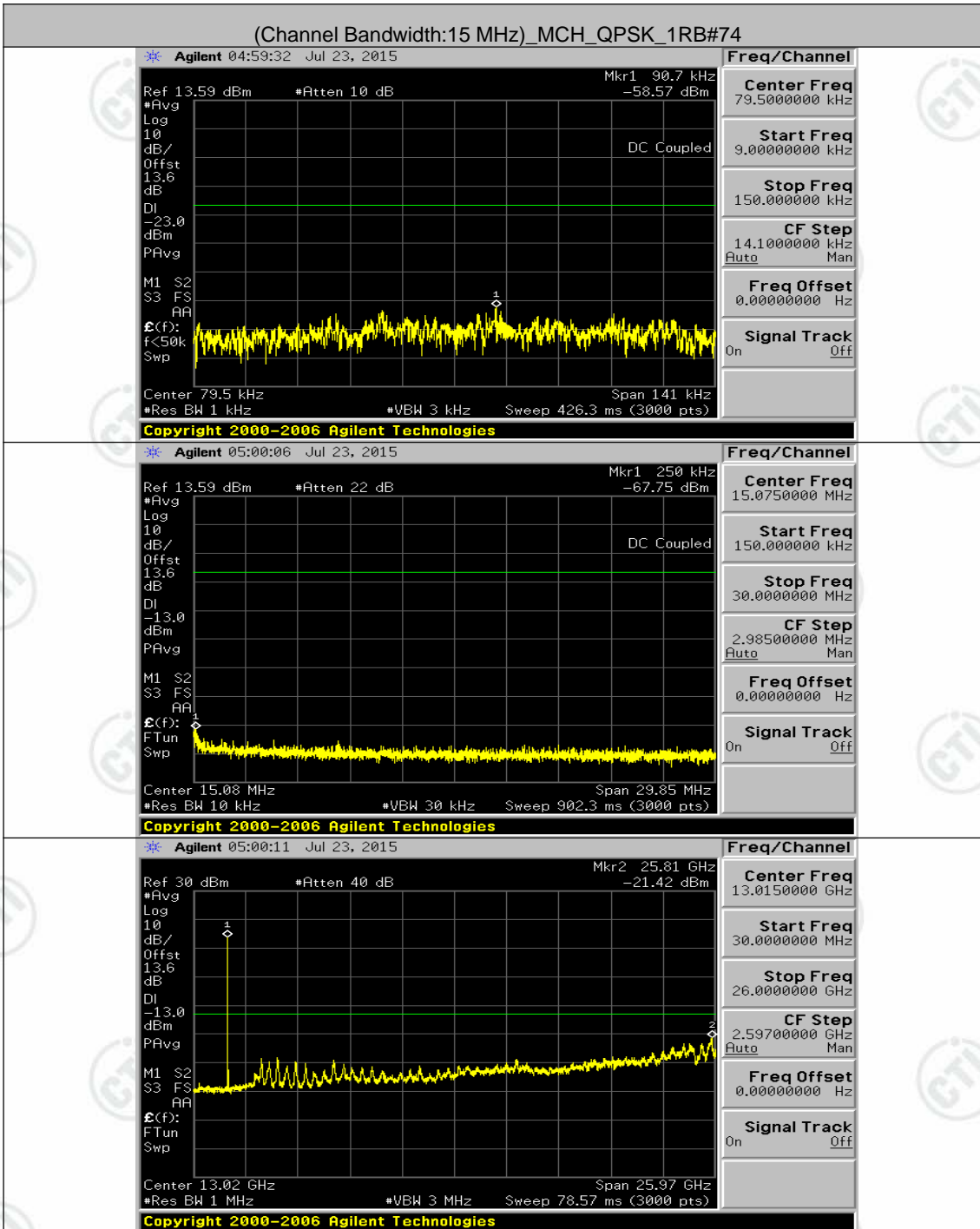


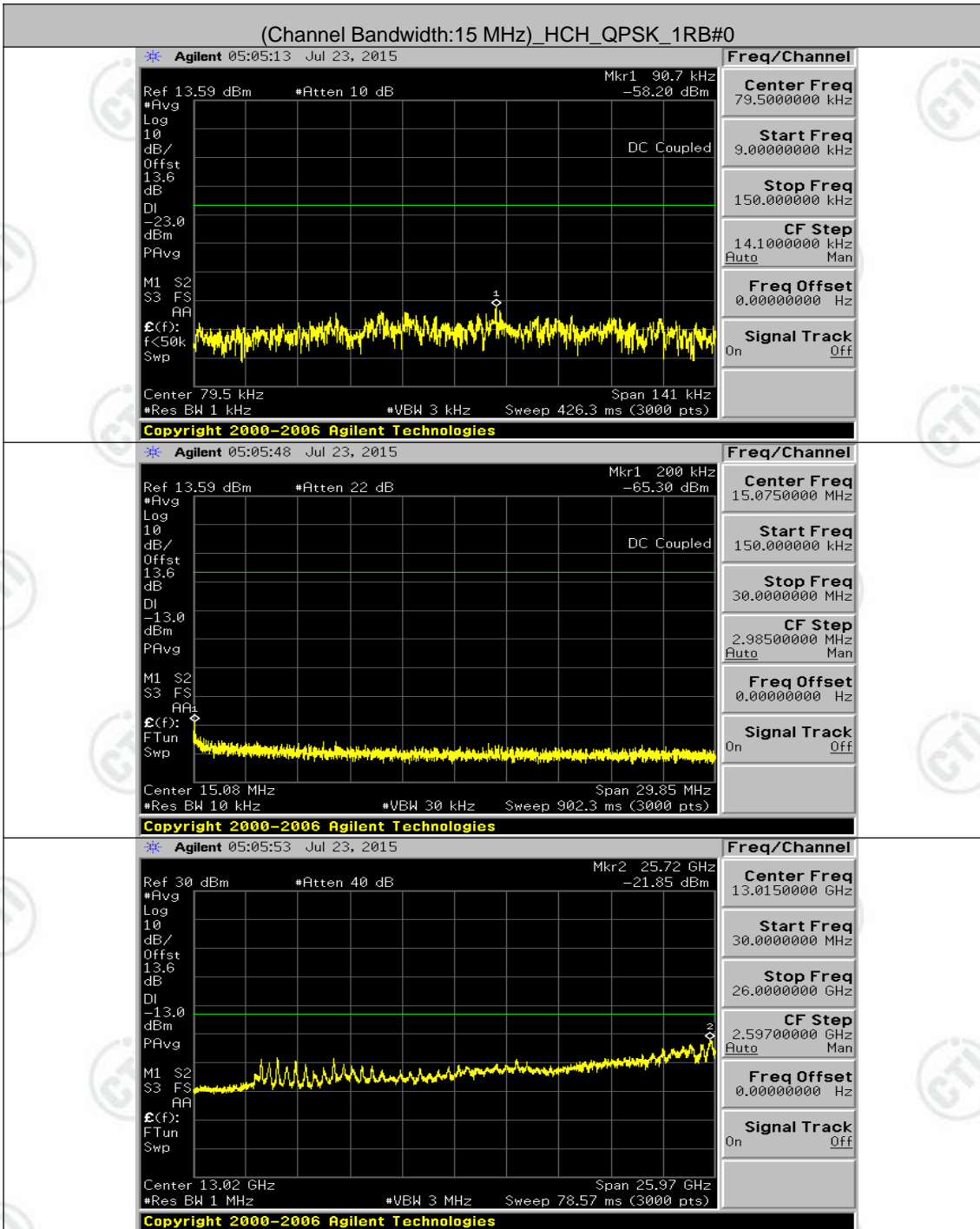


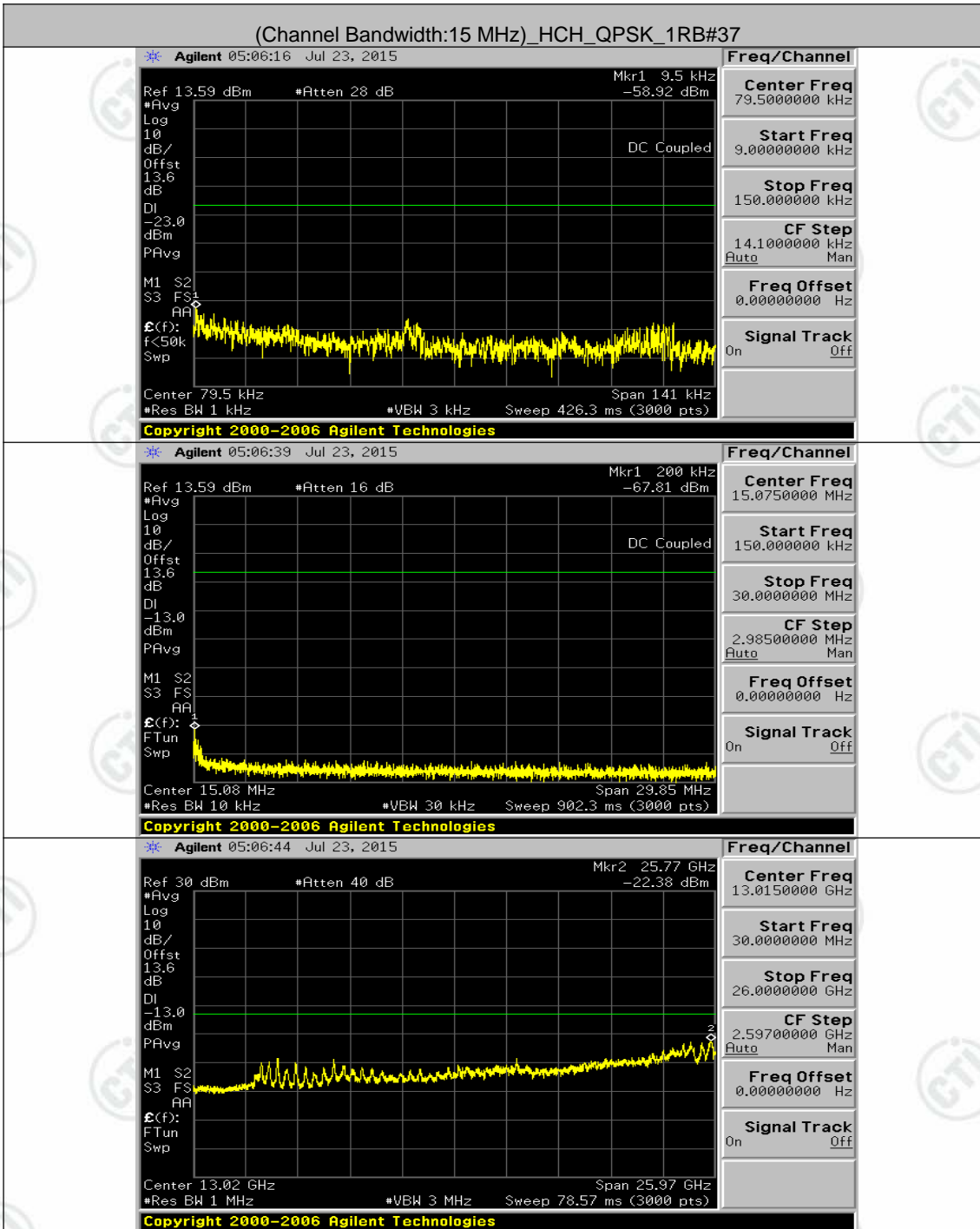


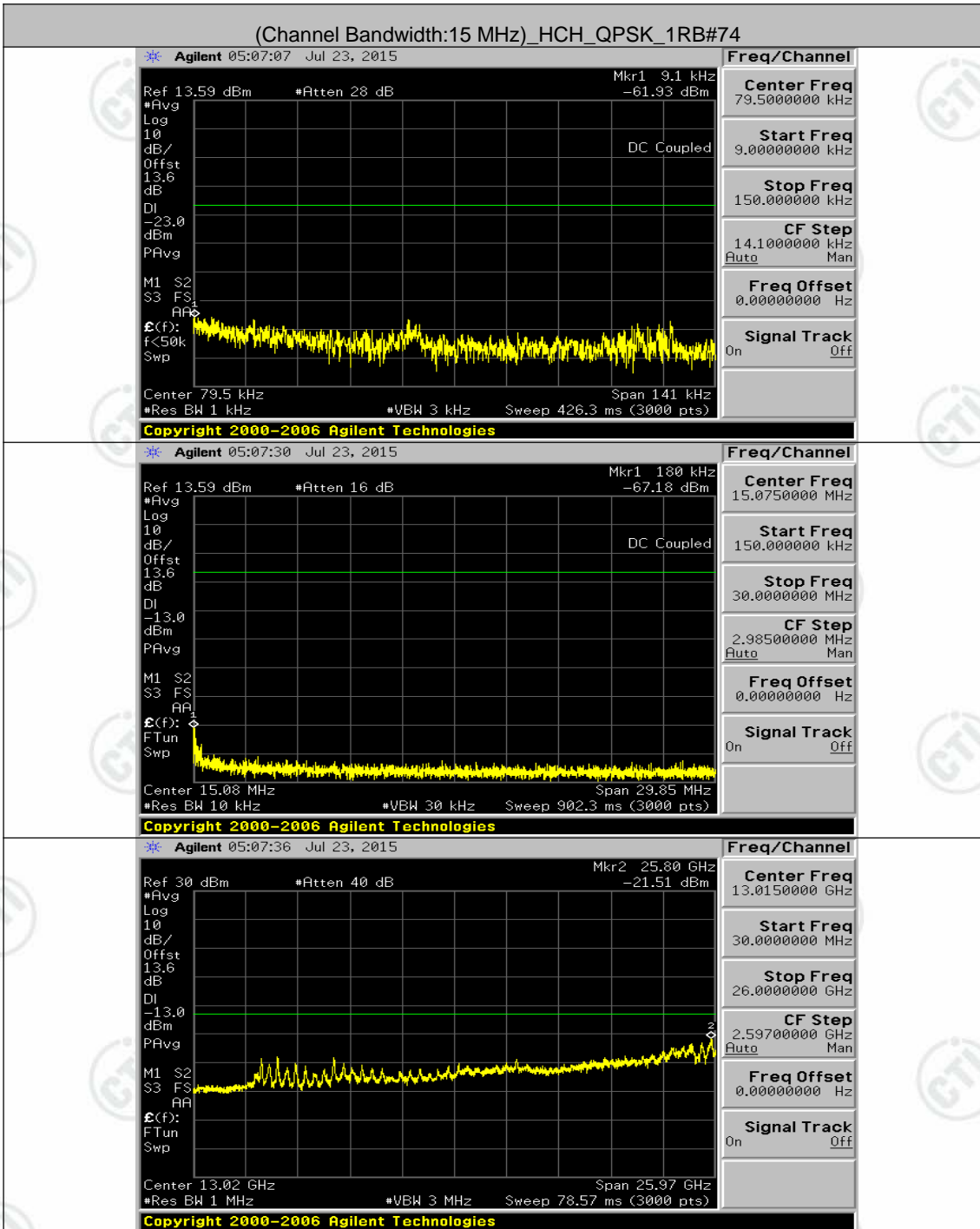


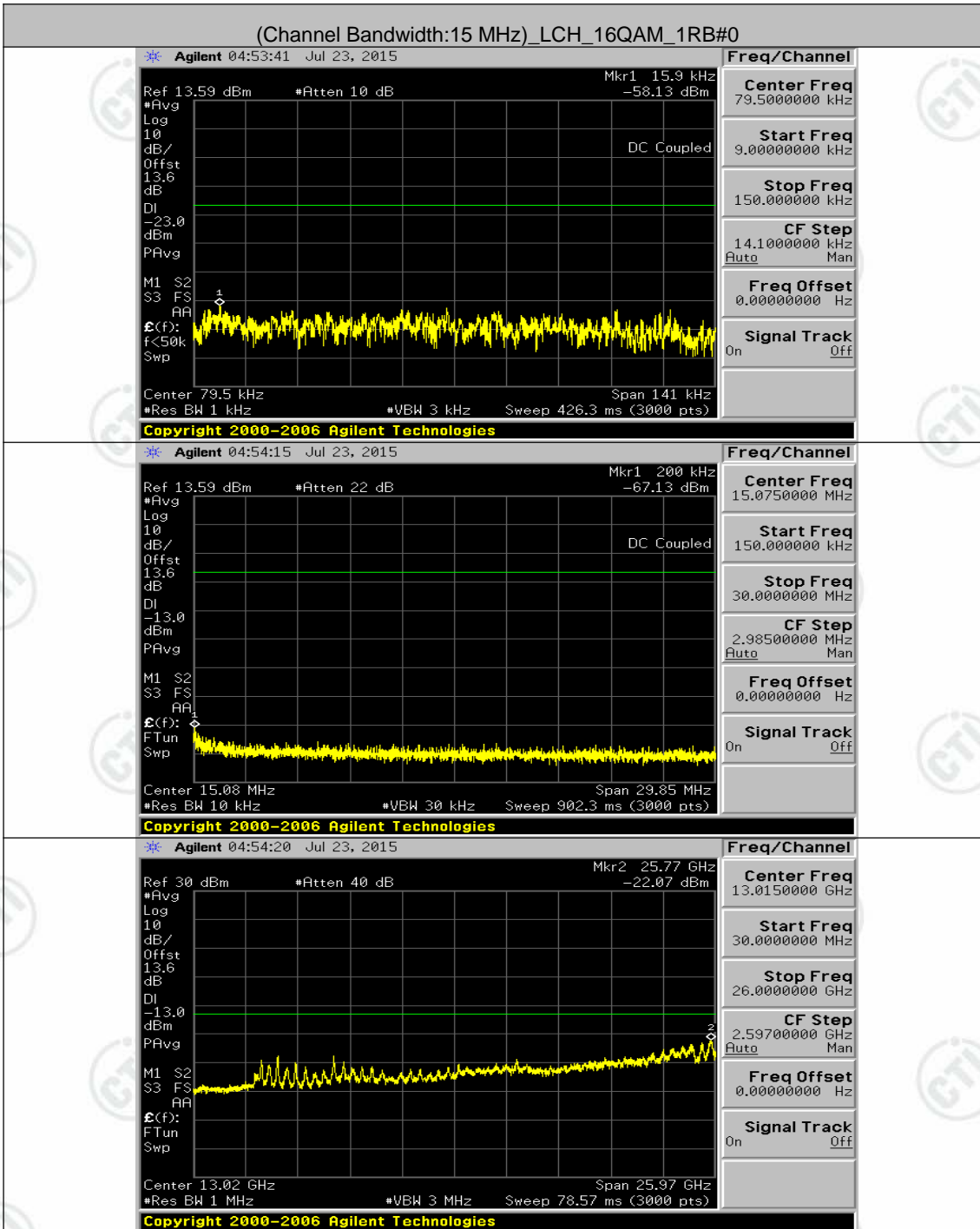


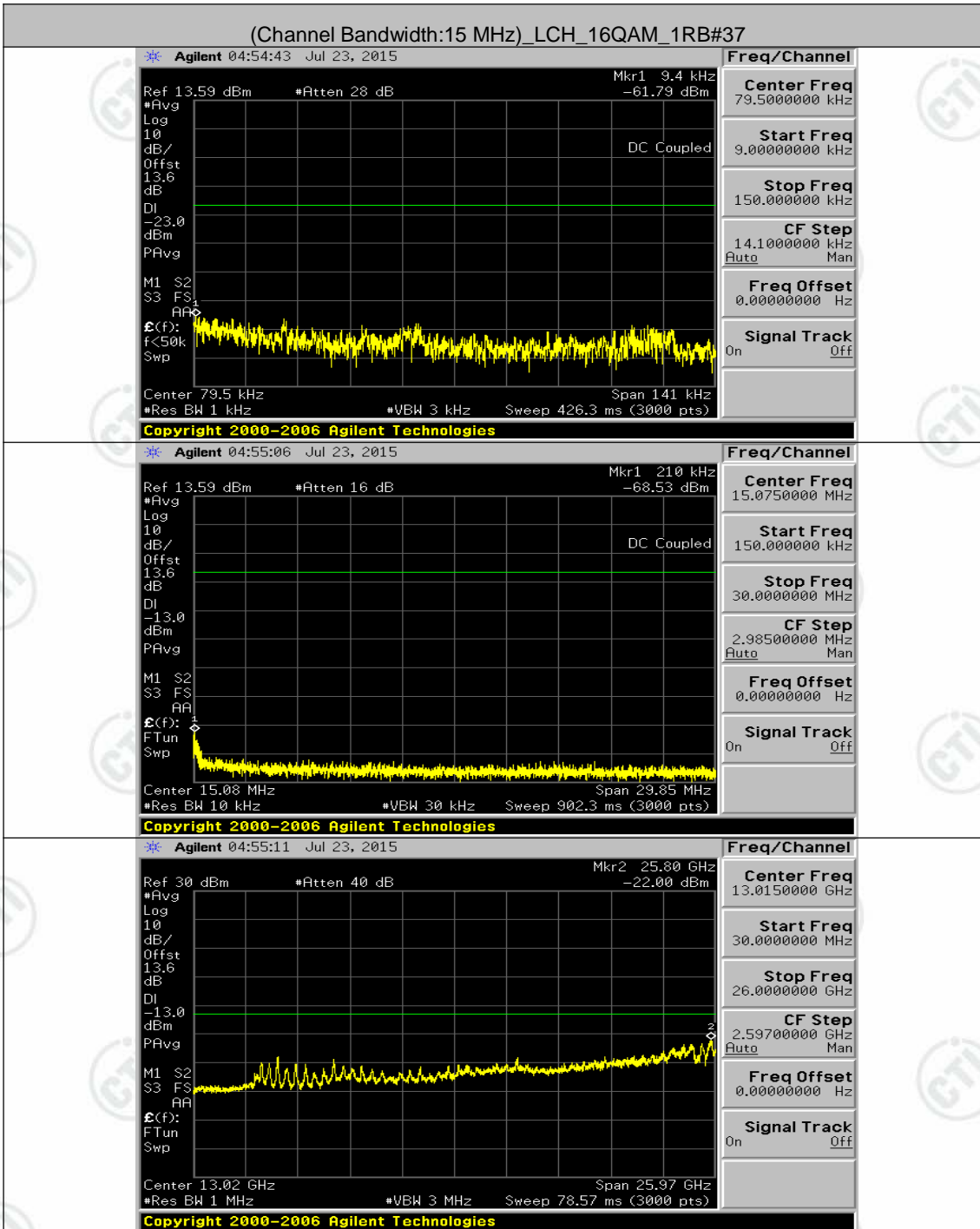




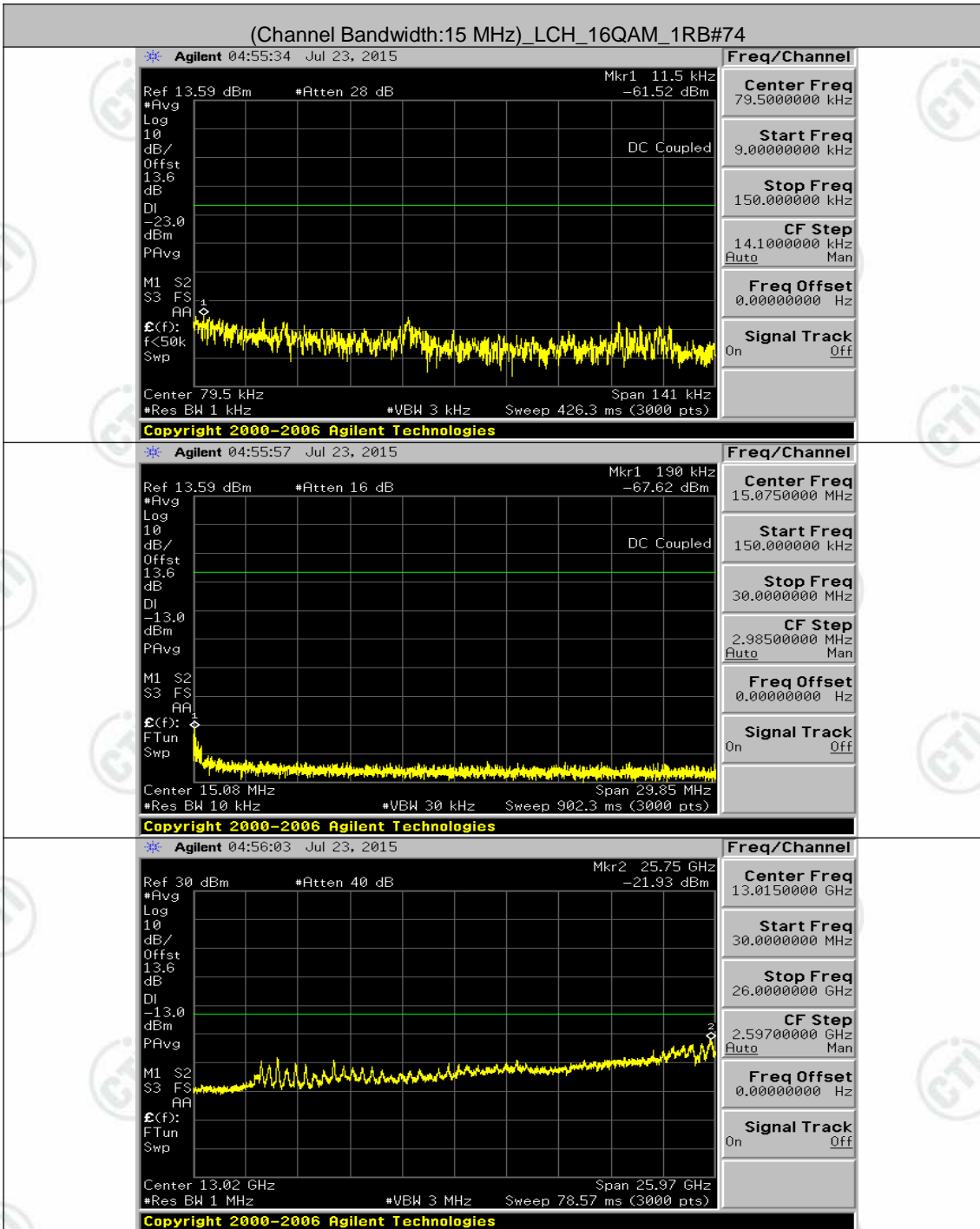


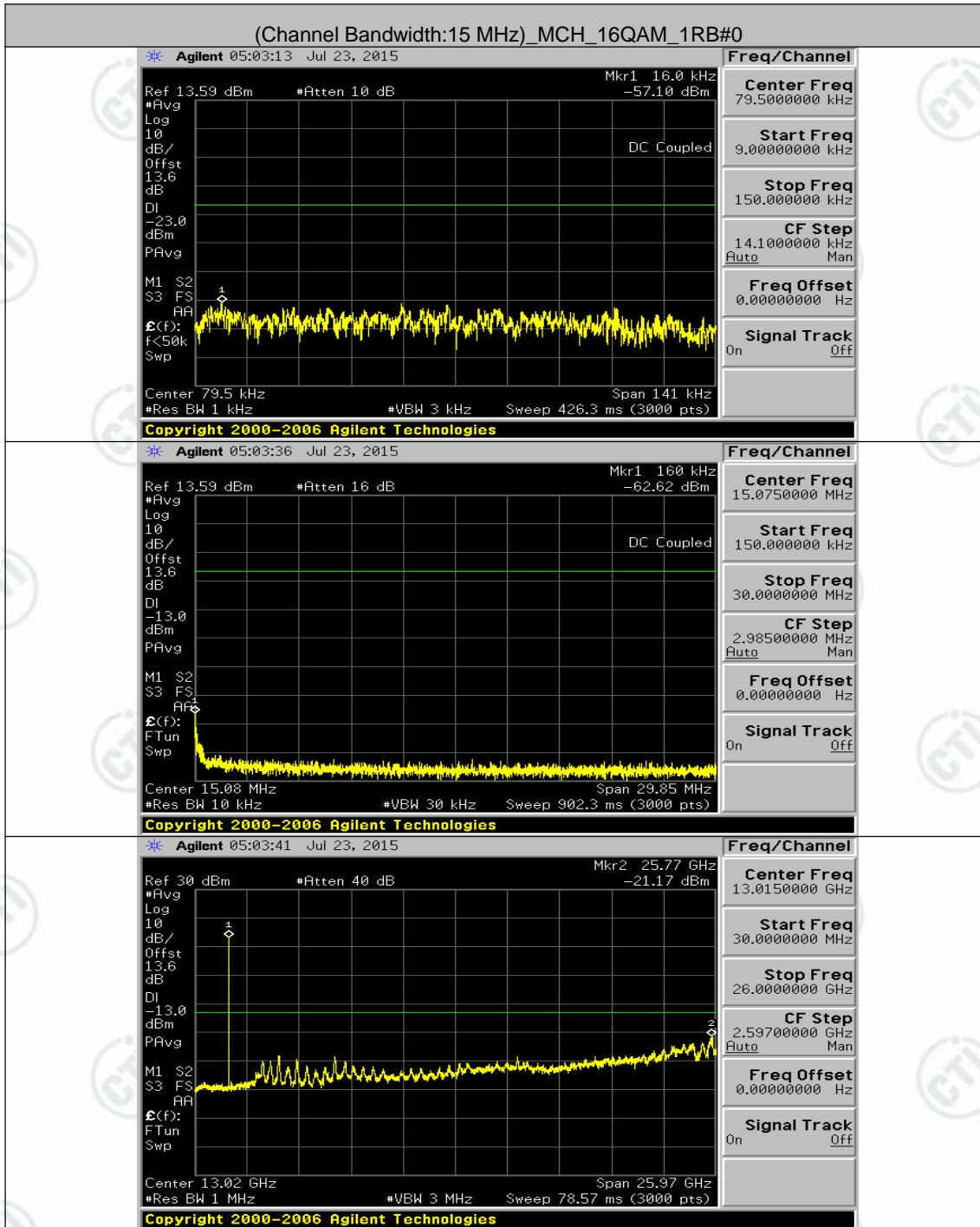


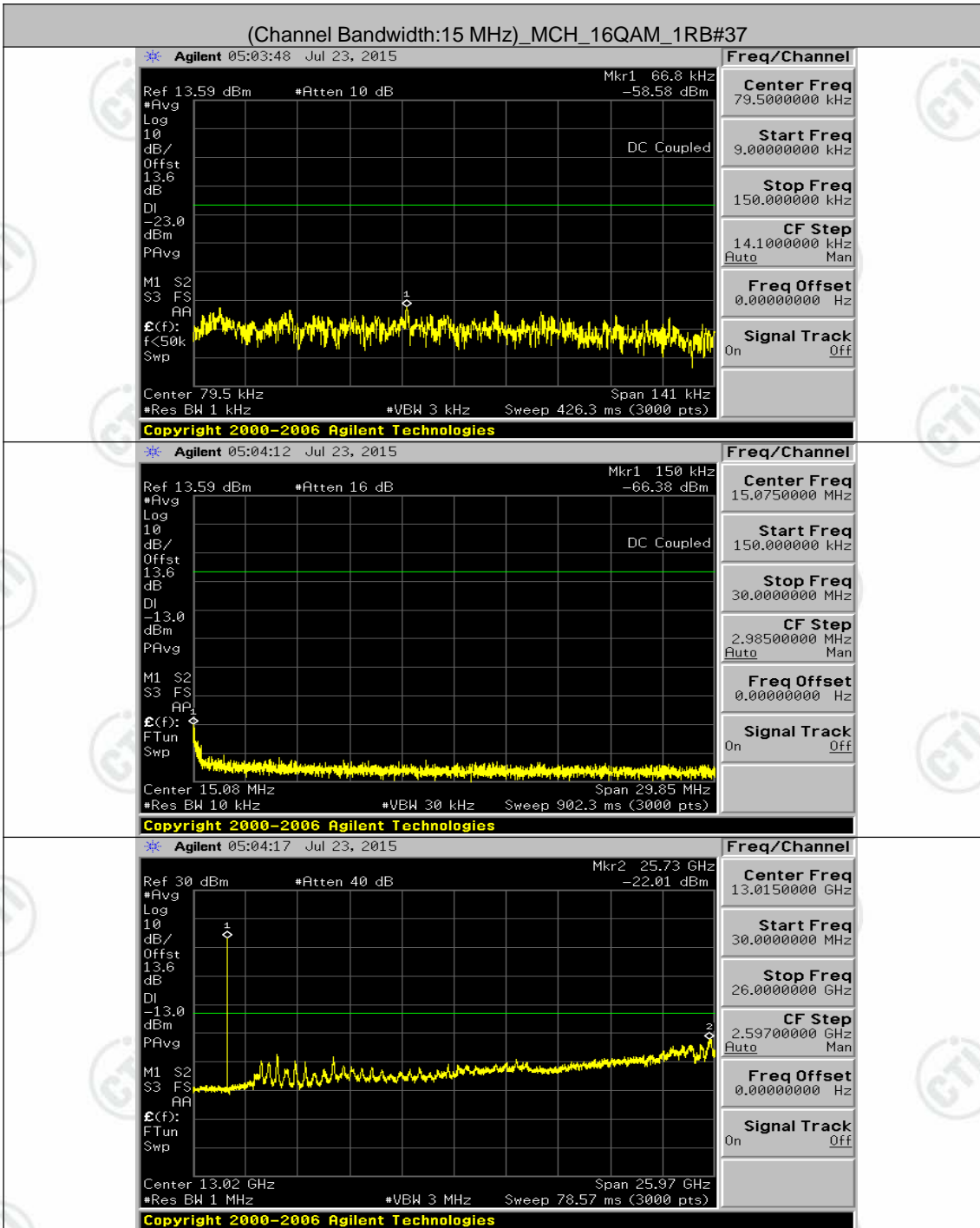


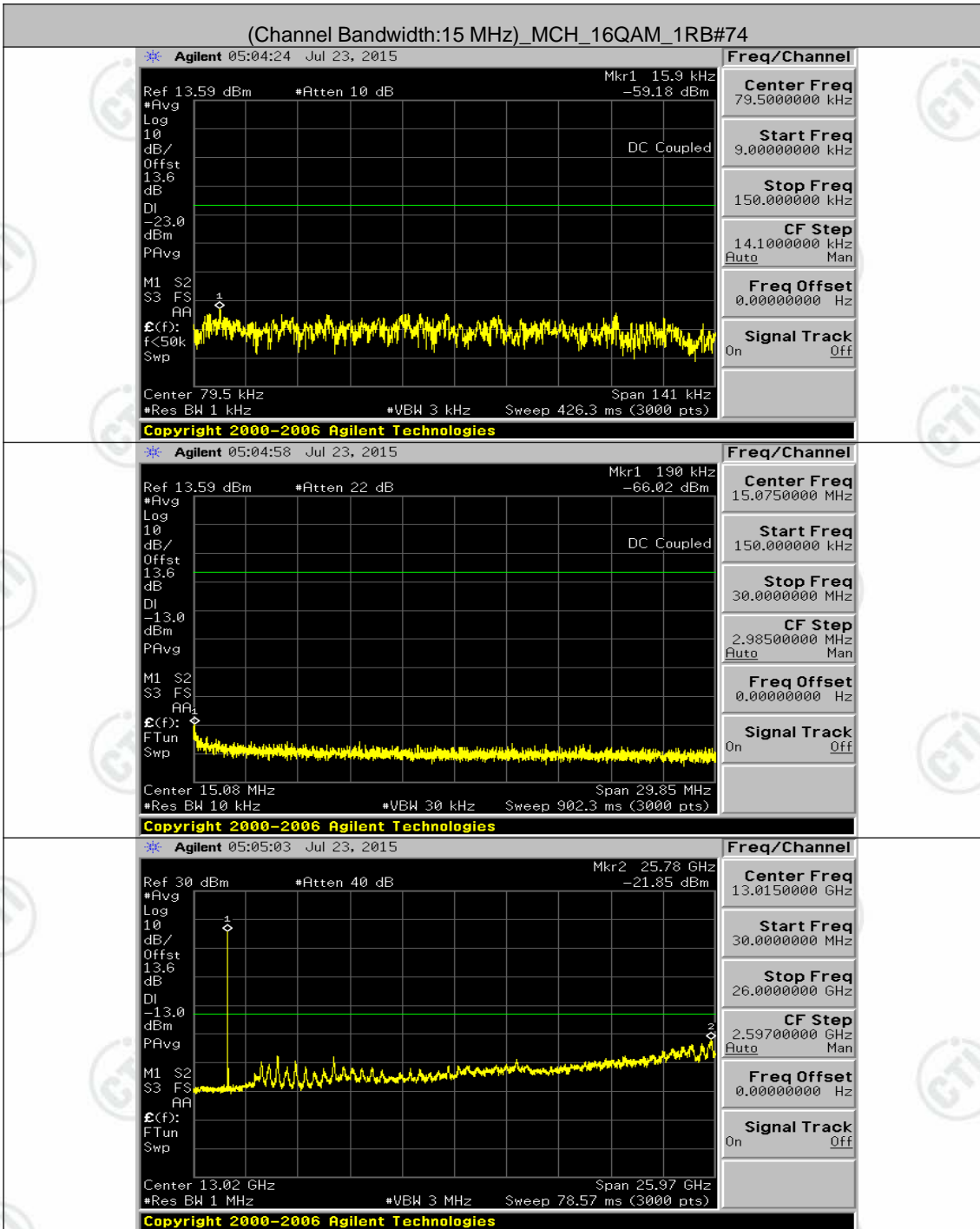


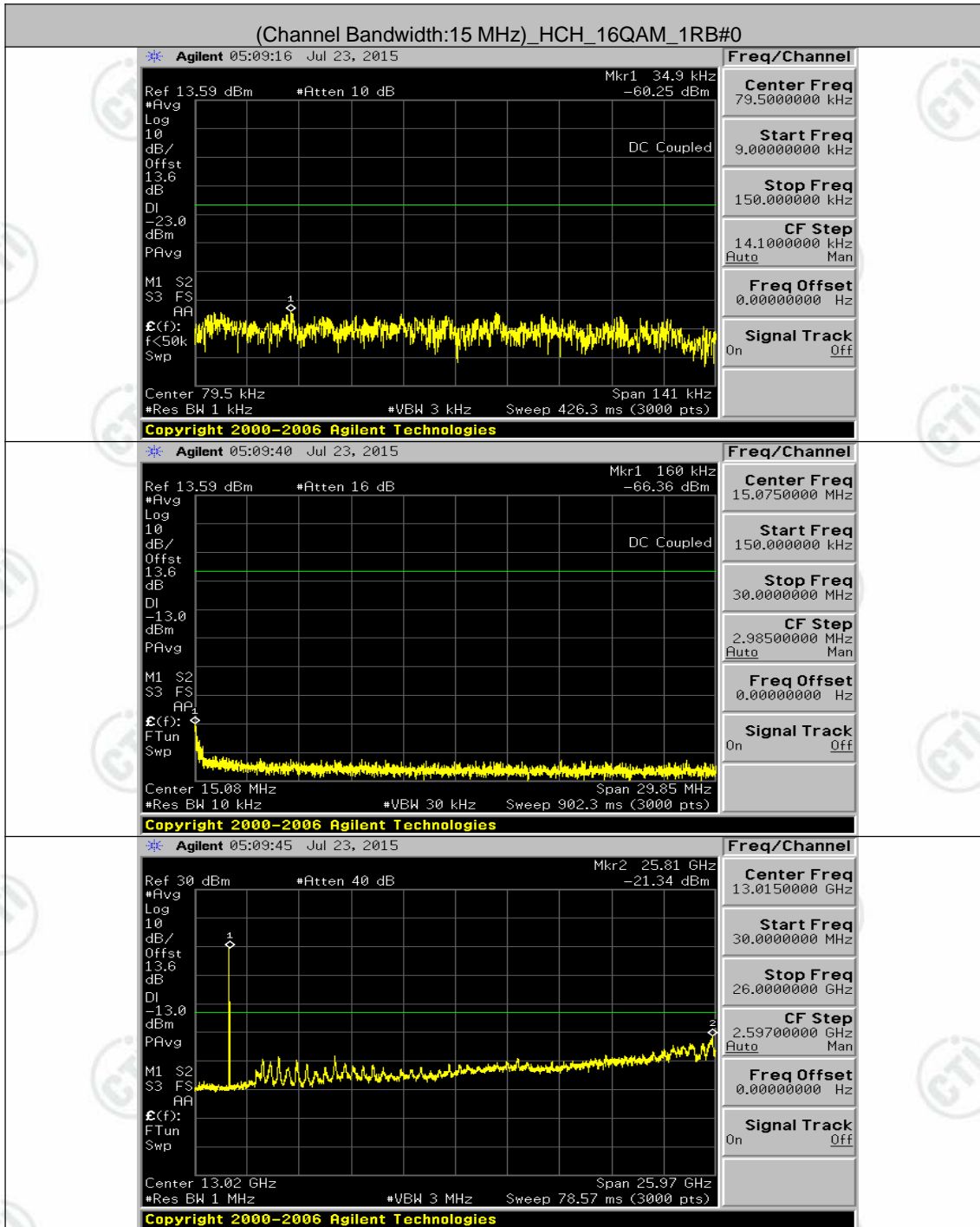


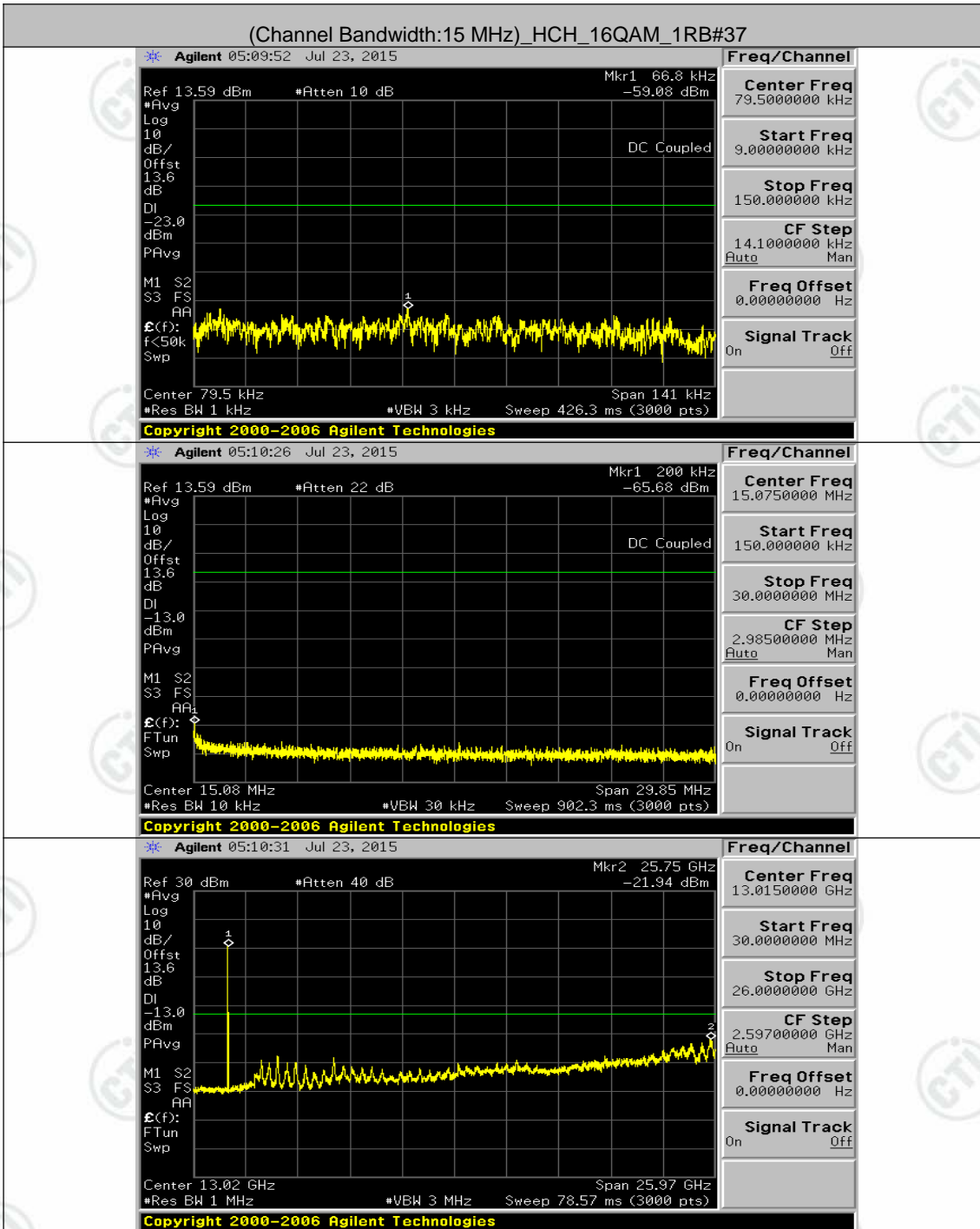


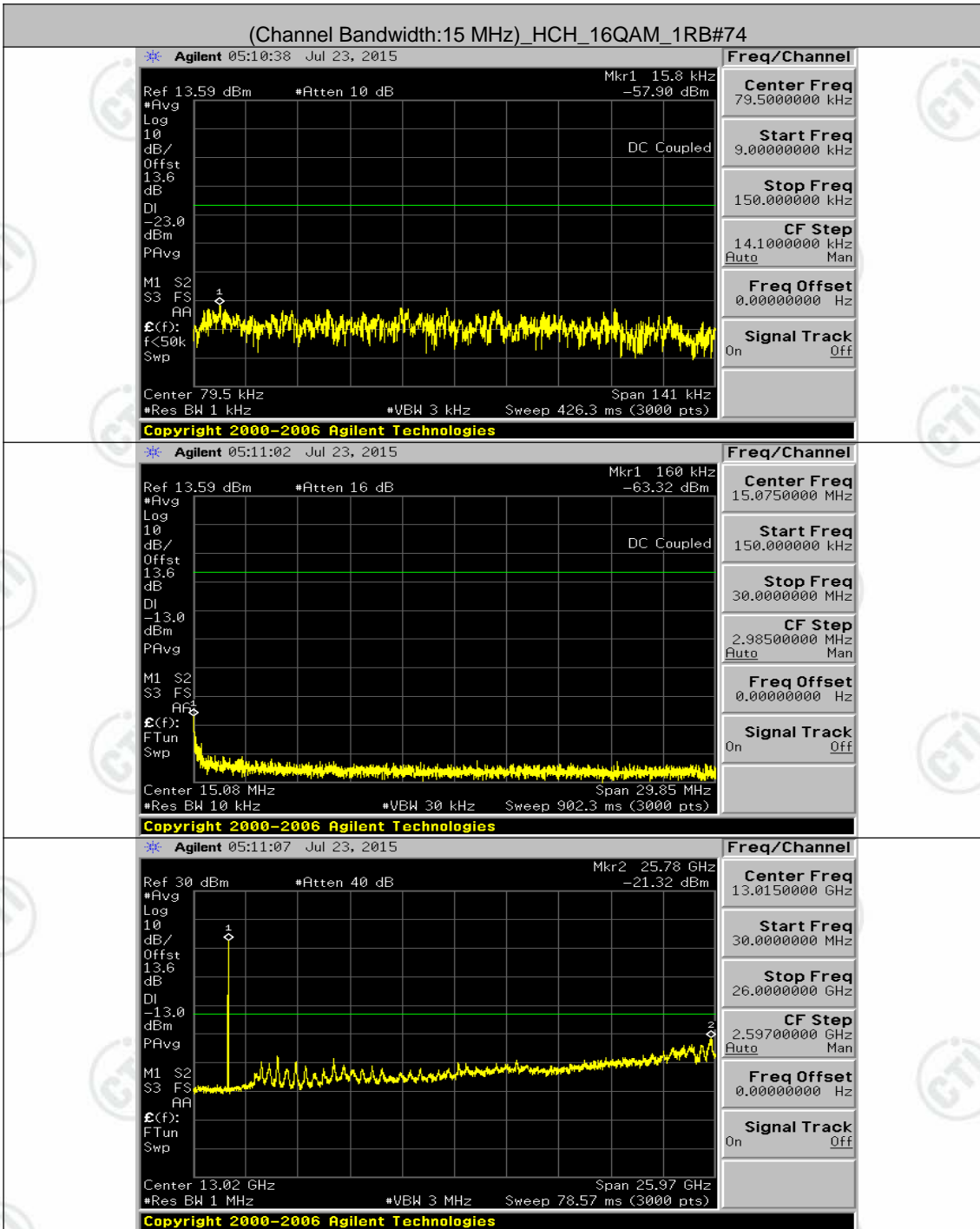




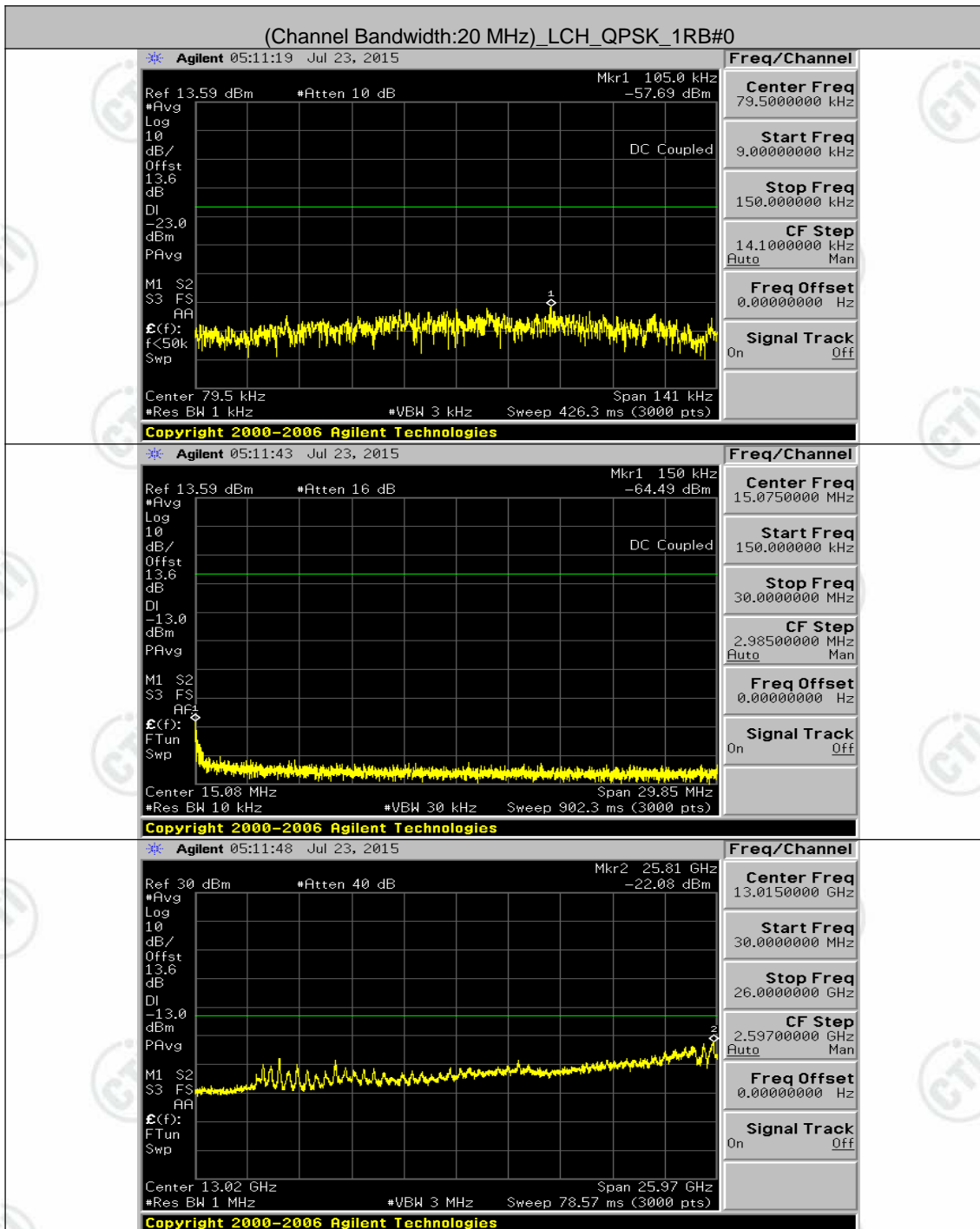




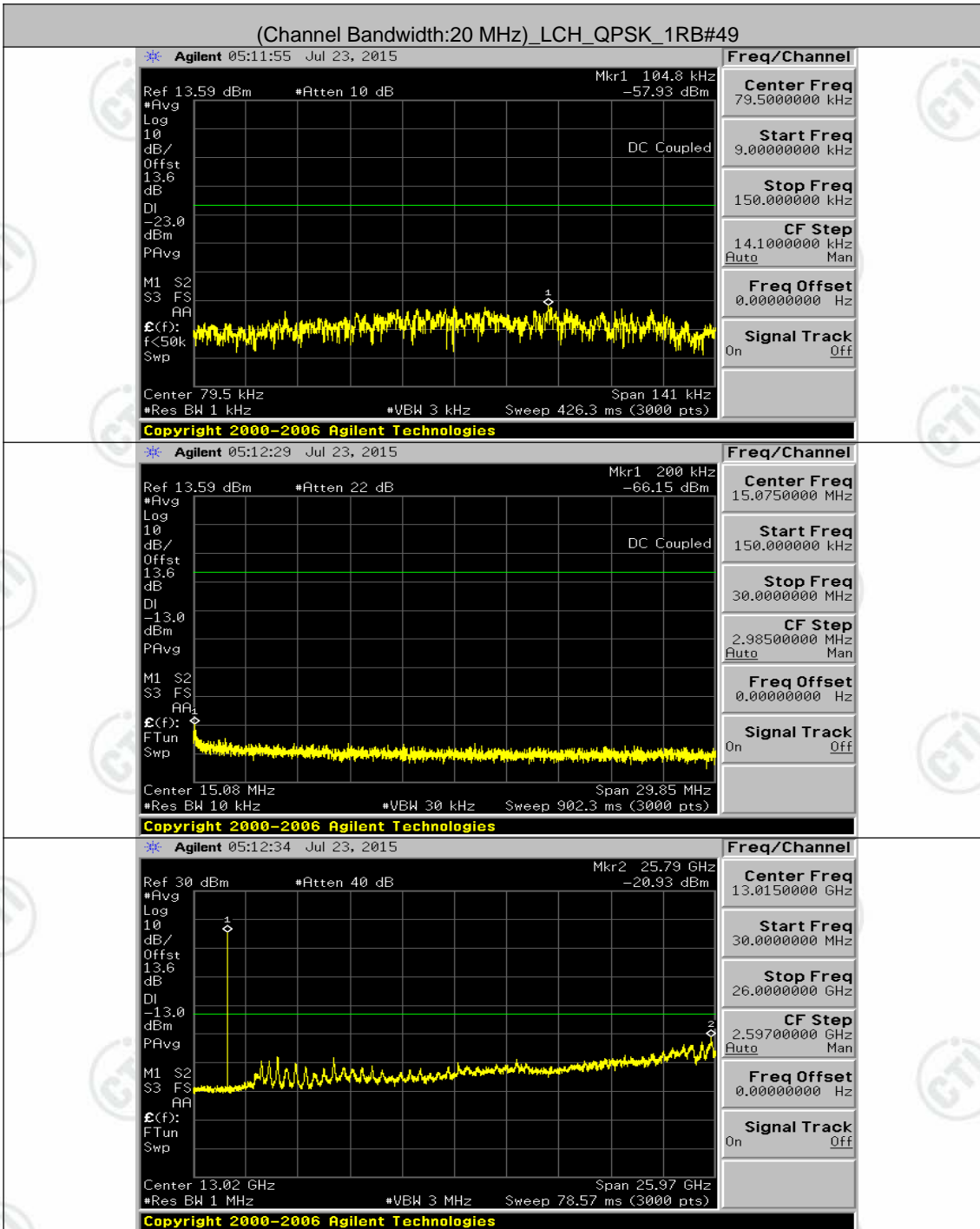


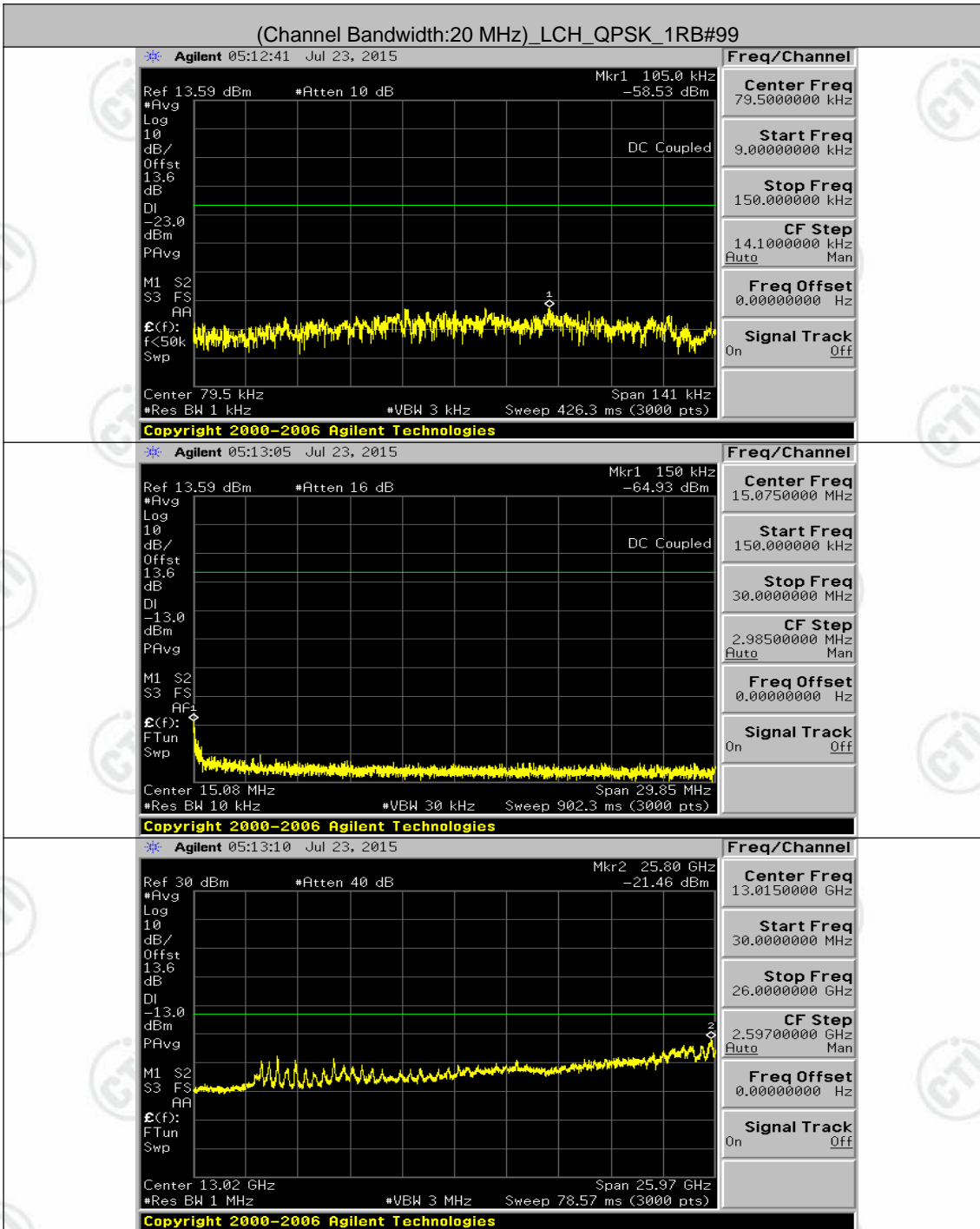


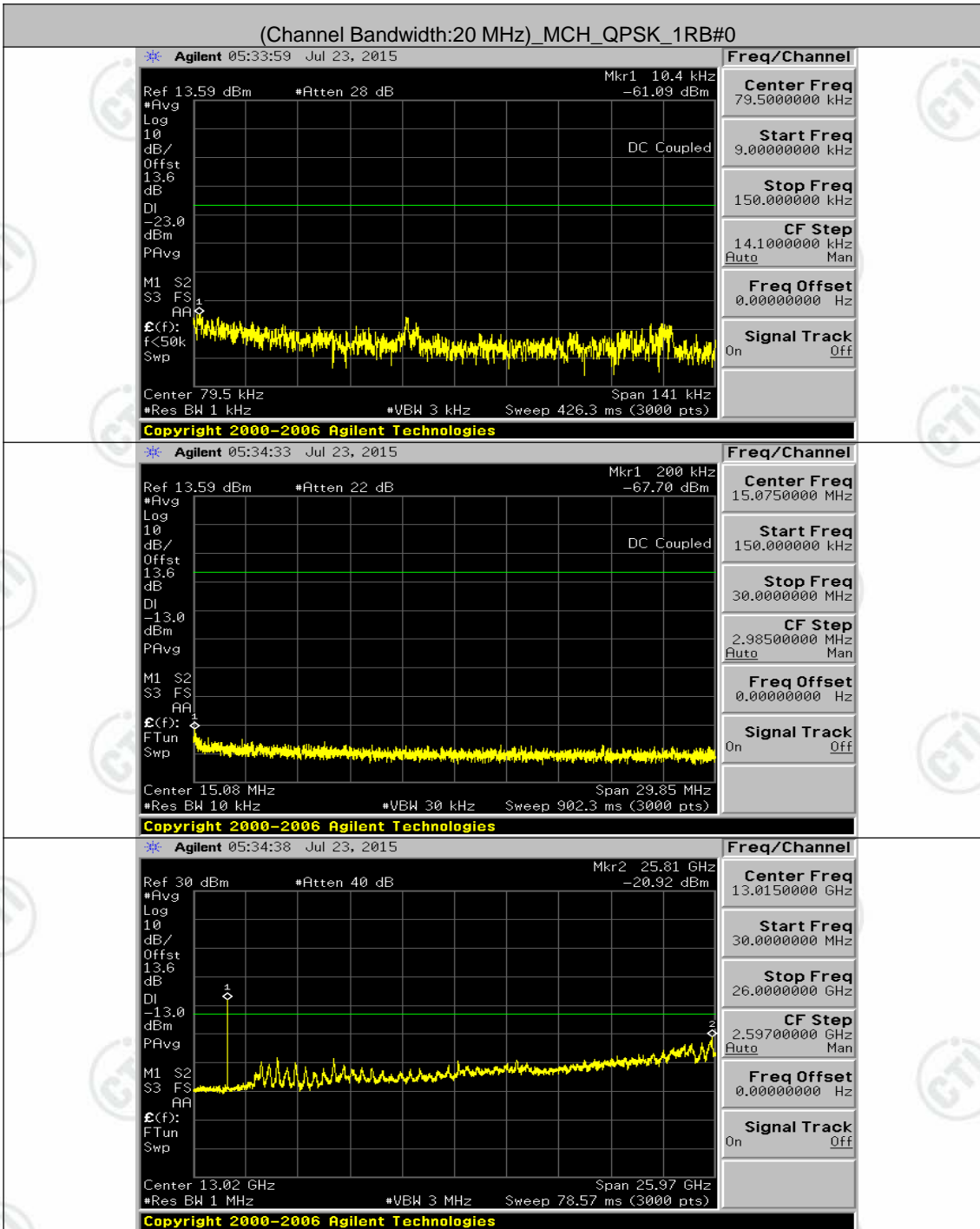
Channel Bandwidth: 20 MHz

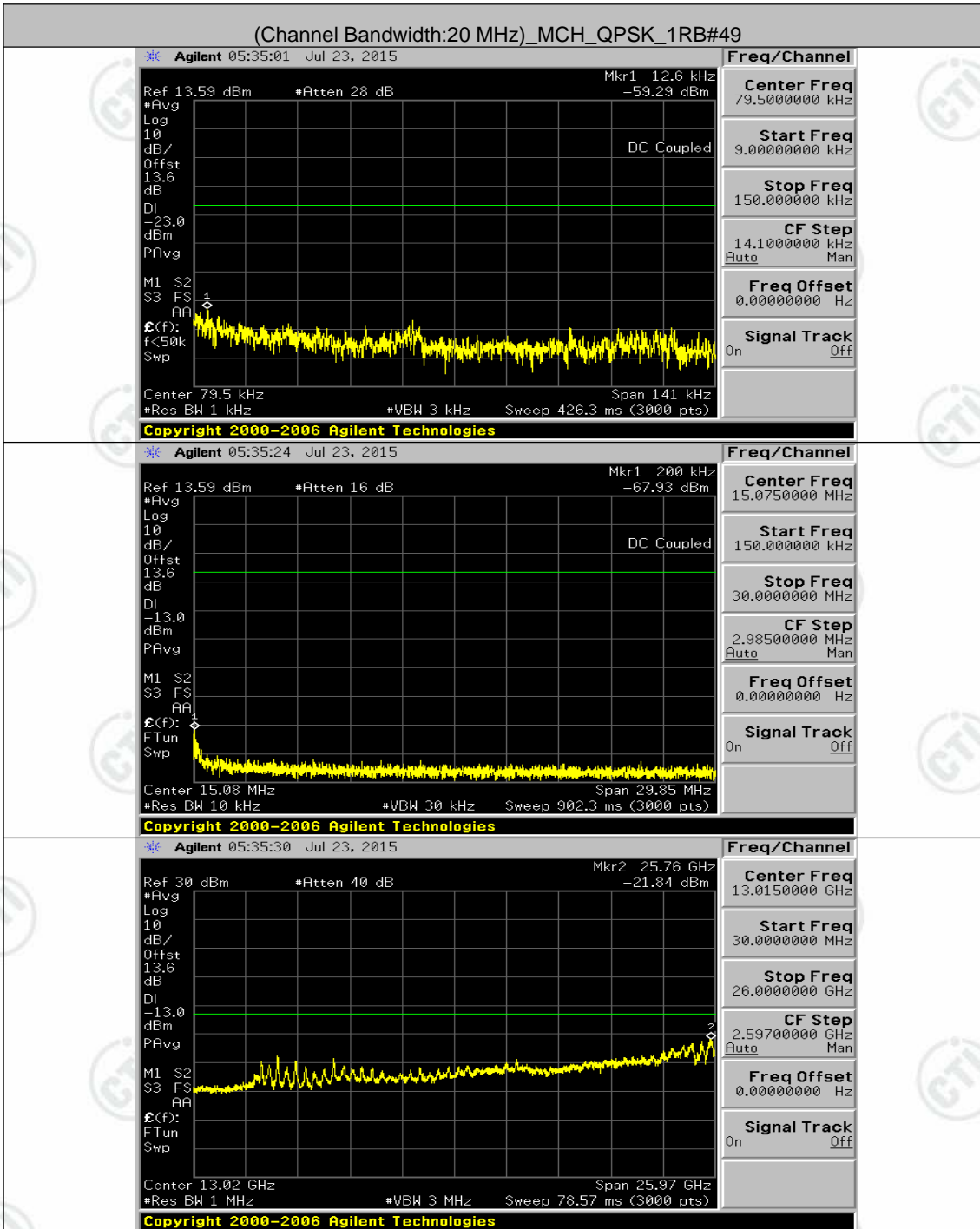


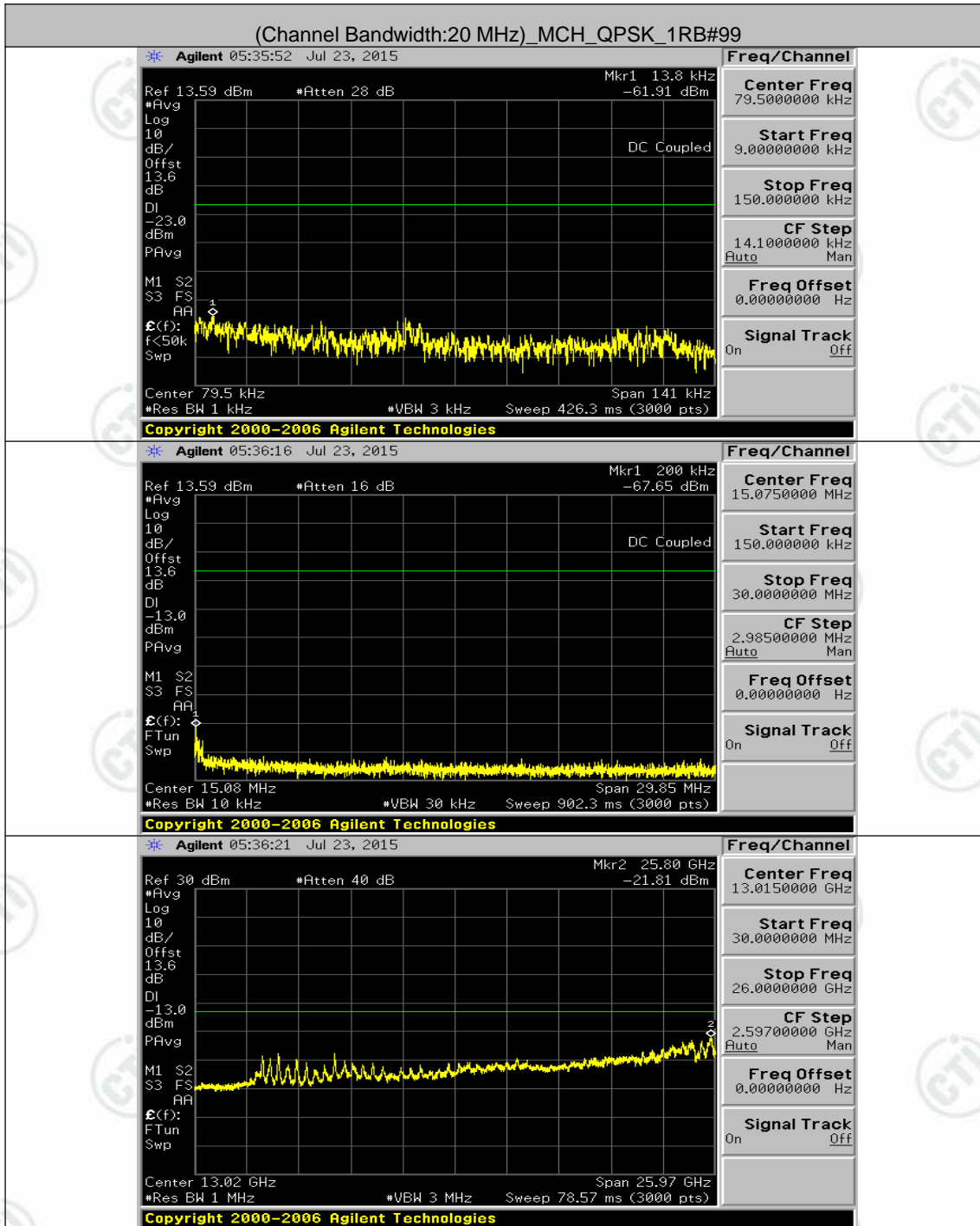


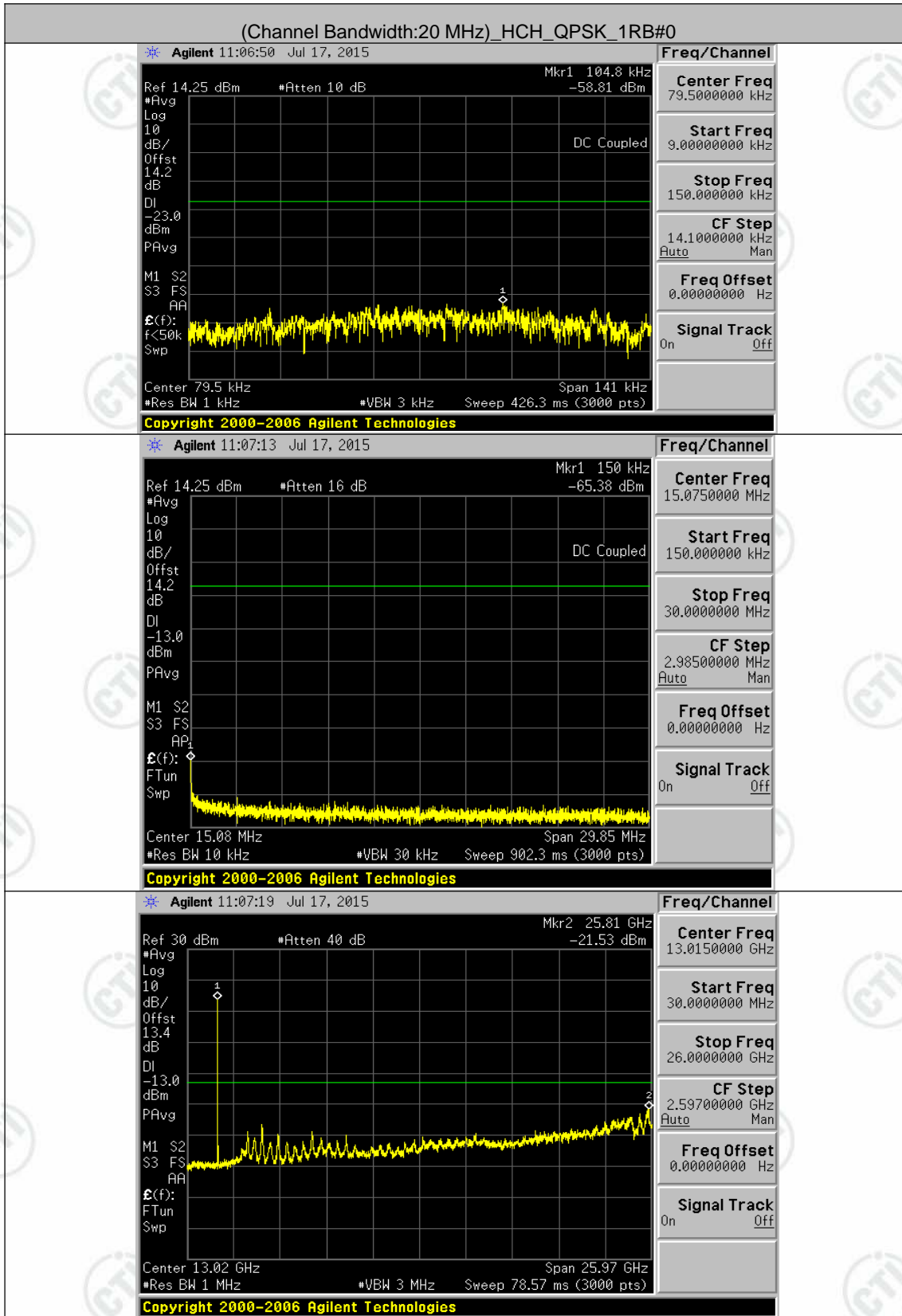


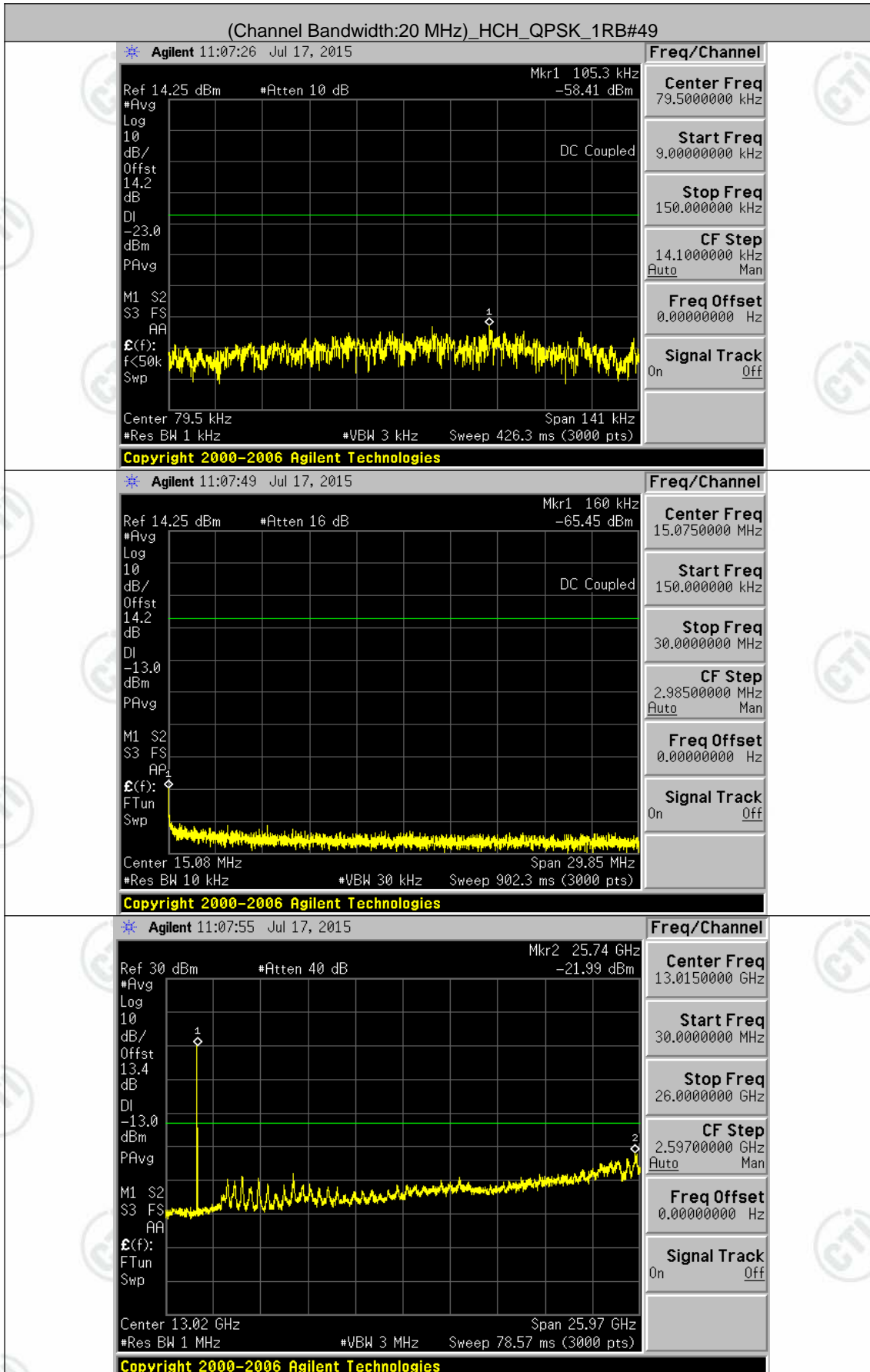


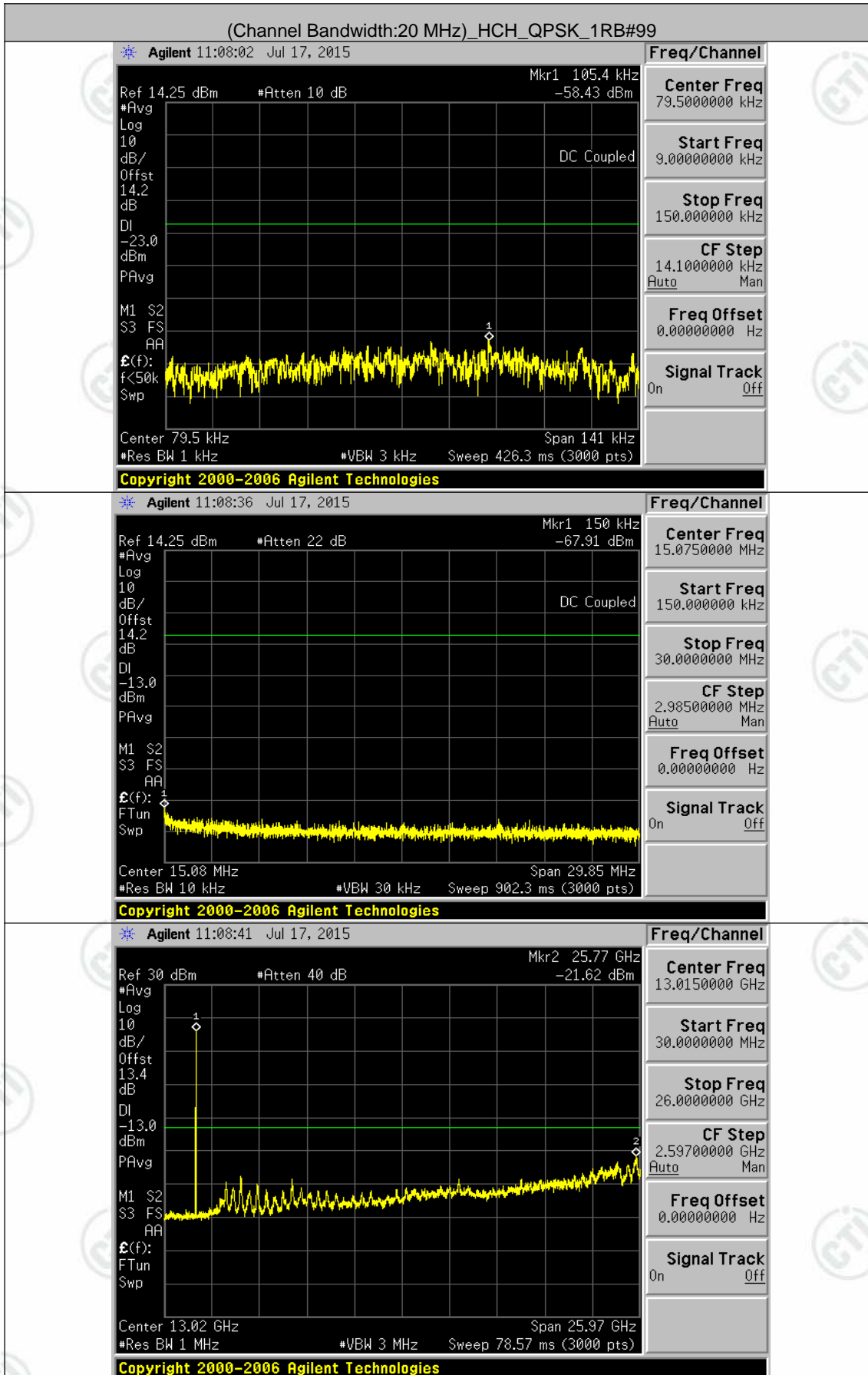




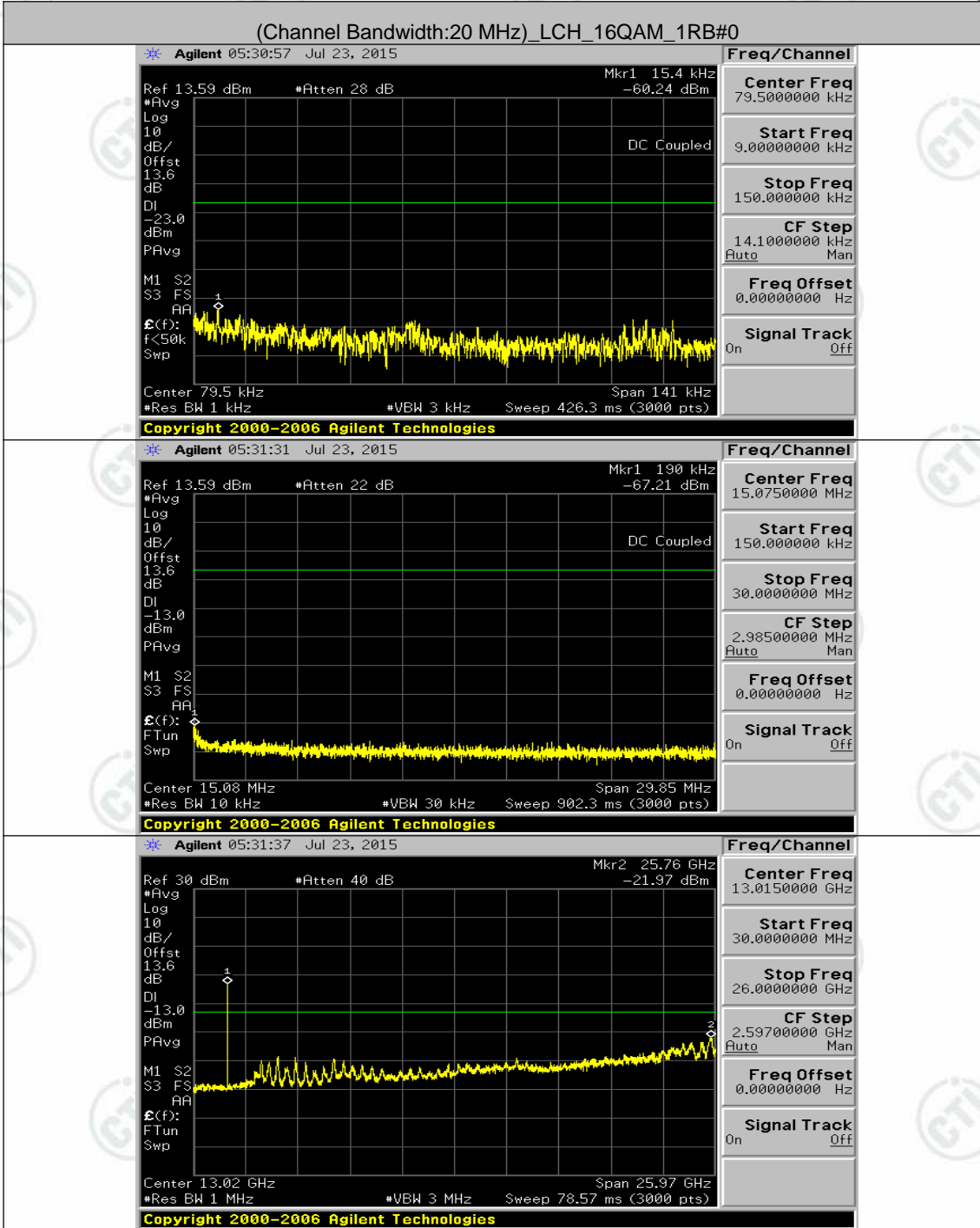


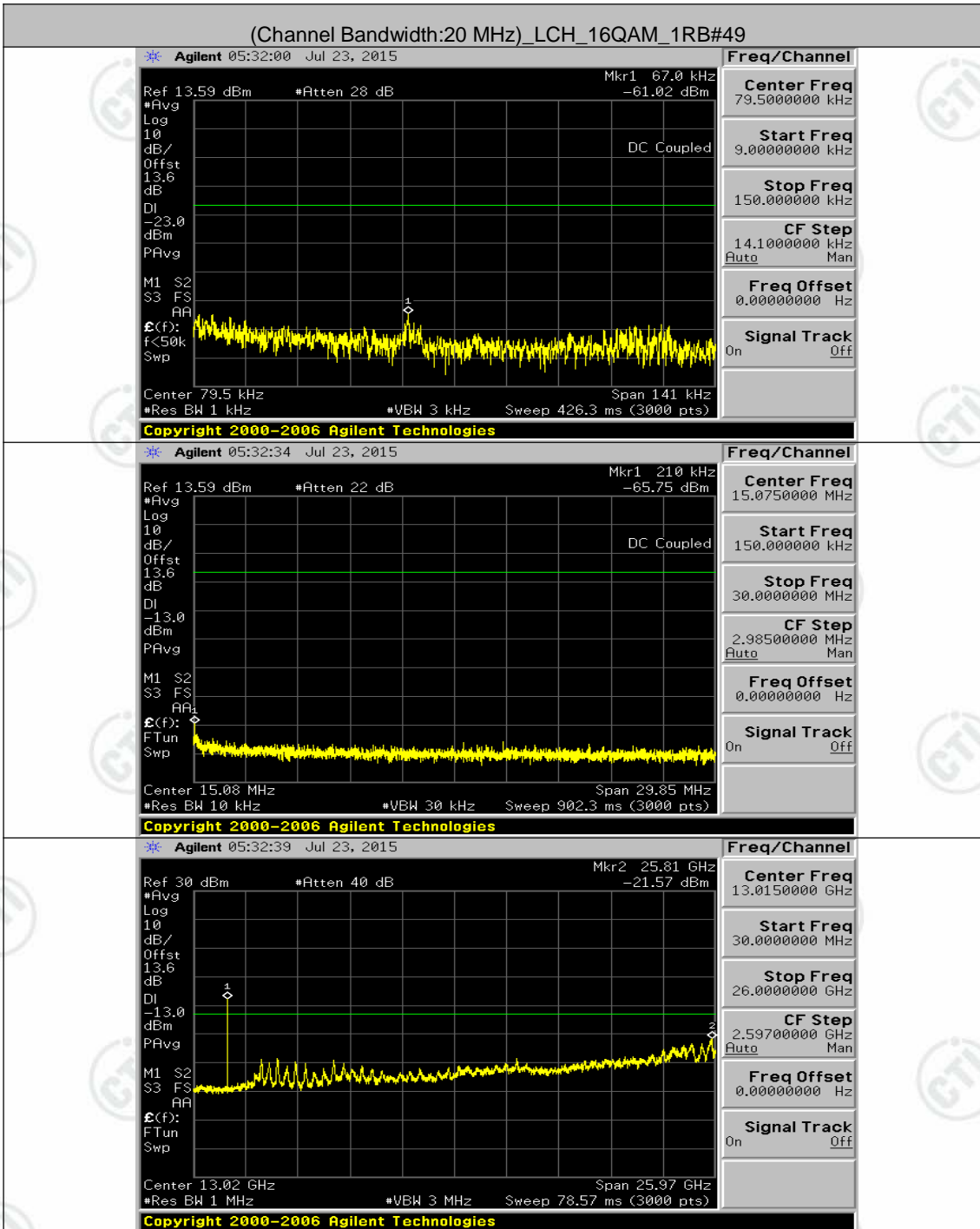


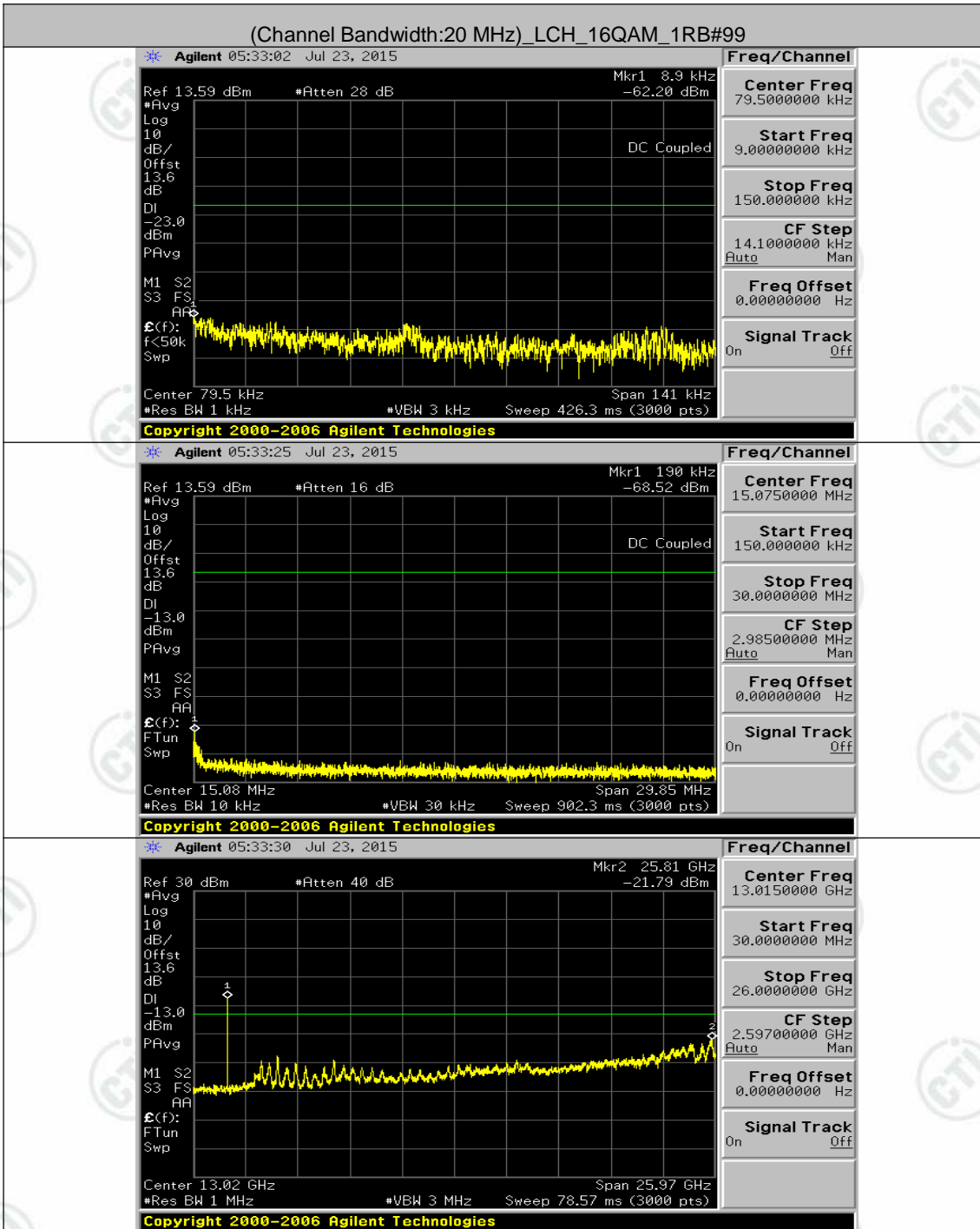


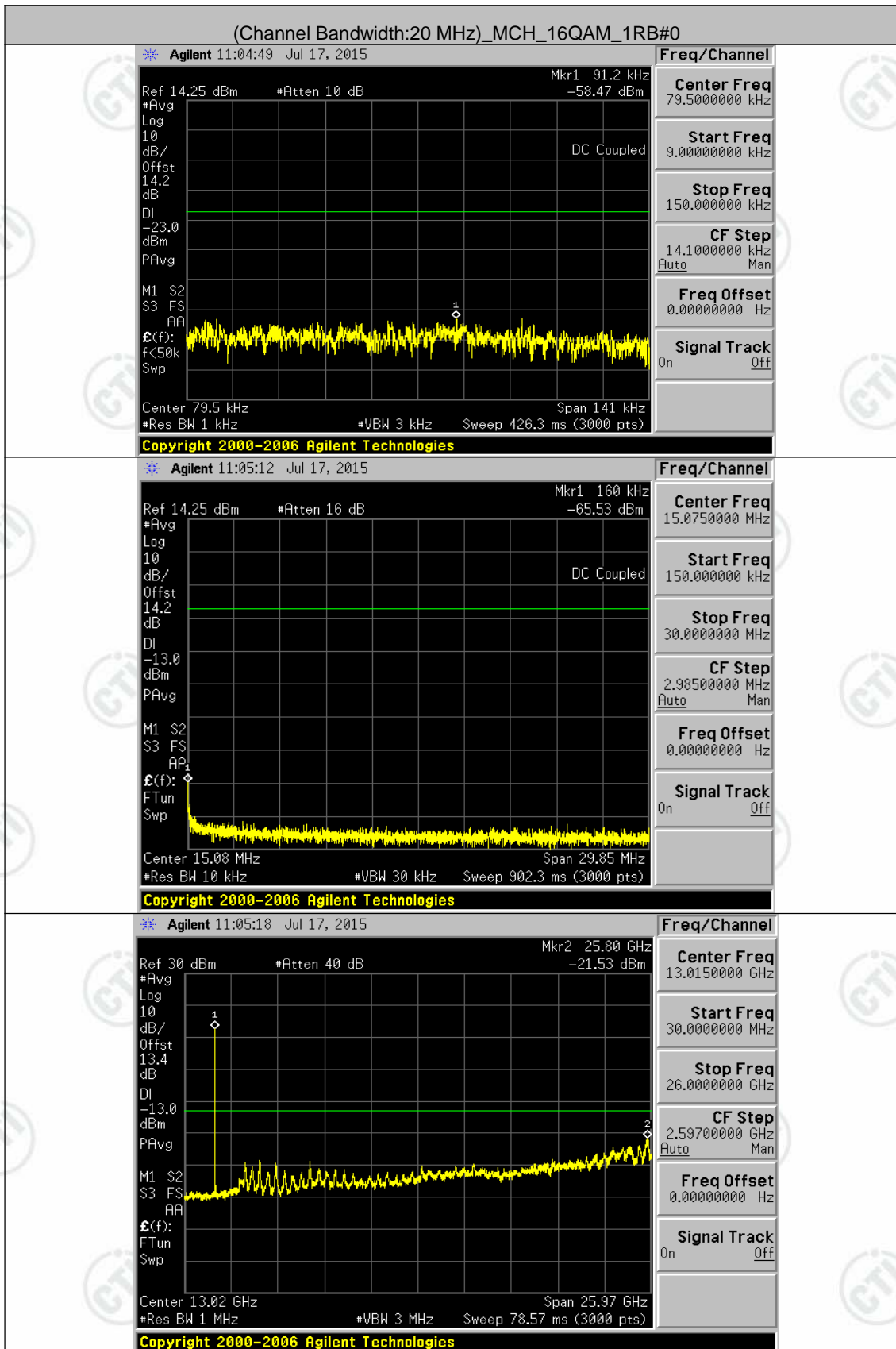


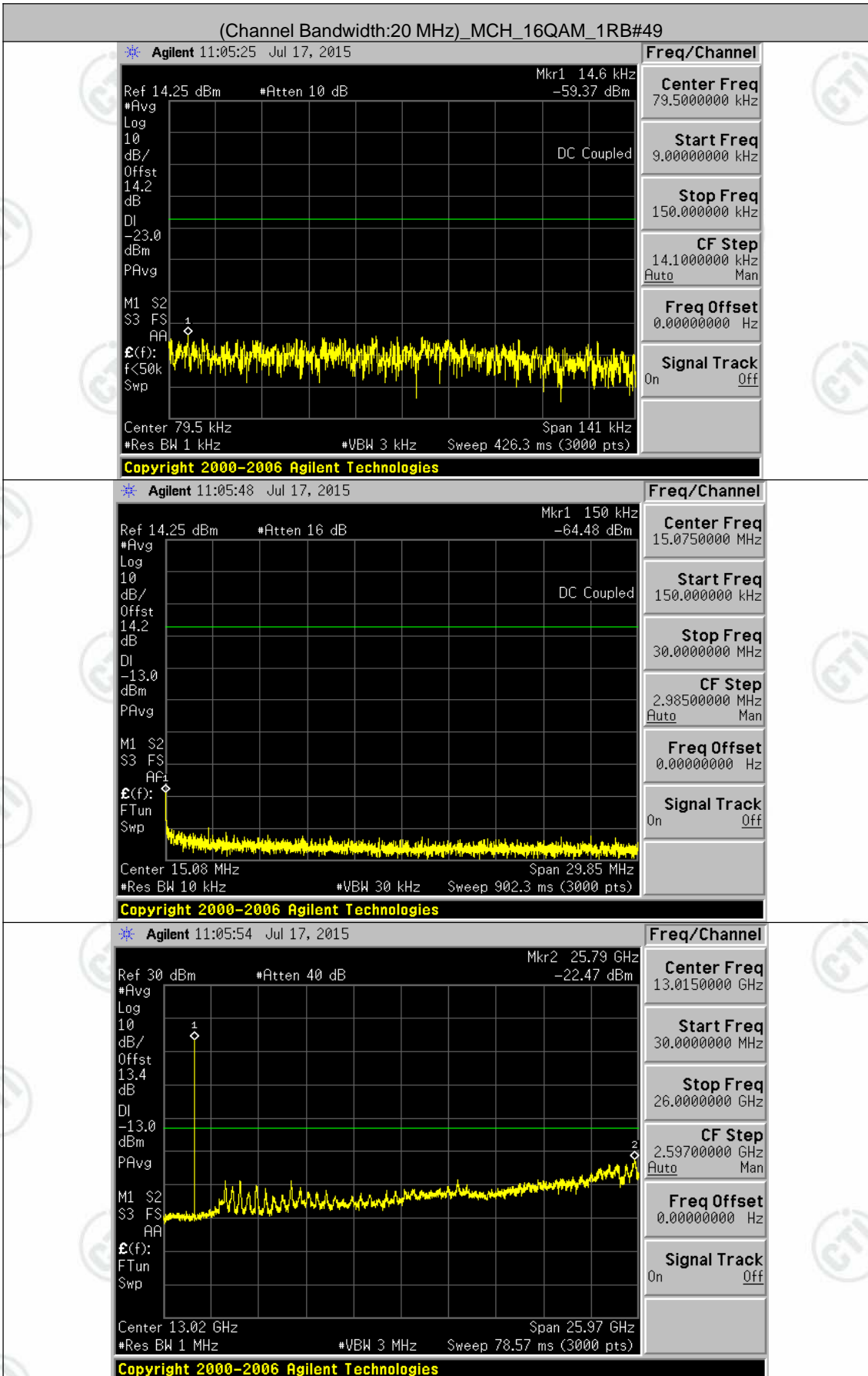


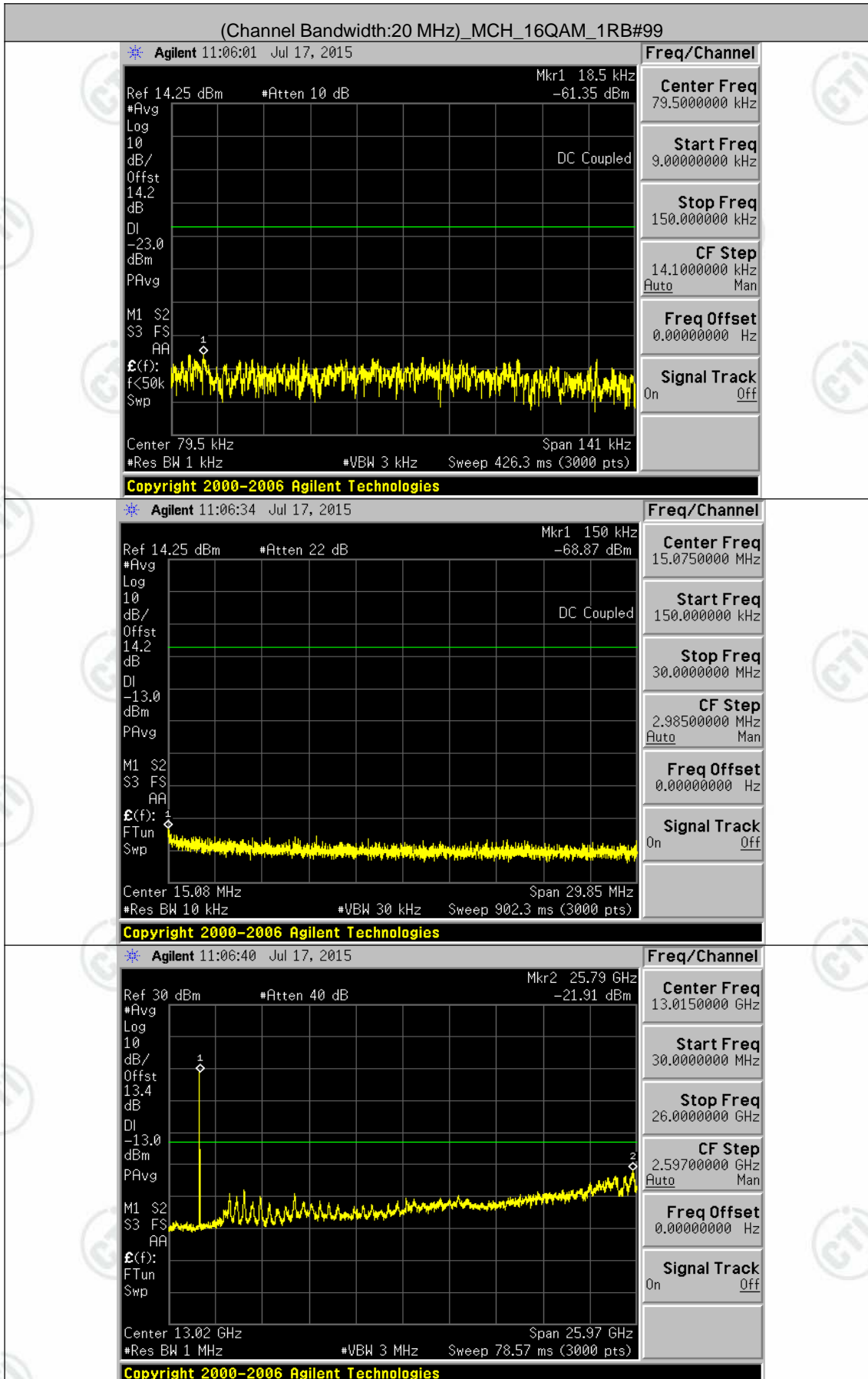


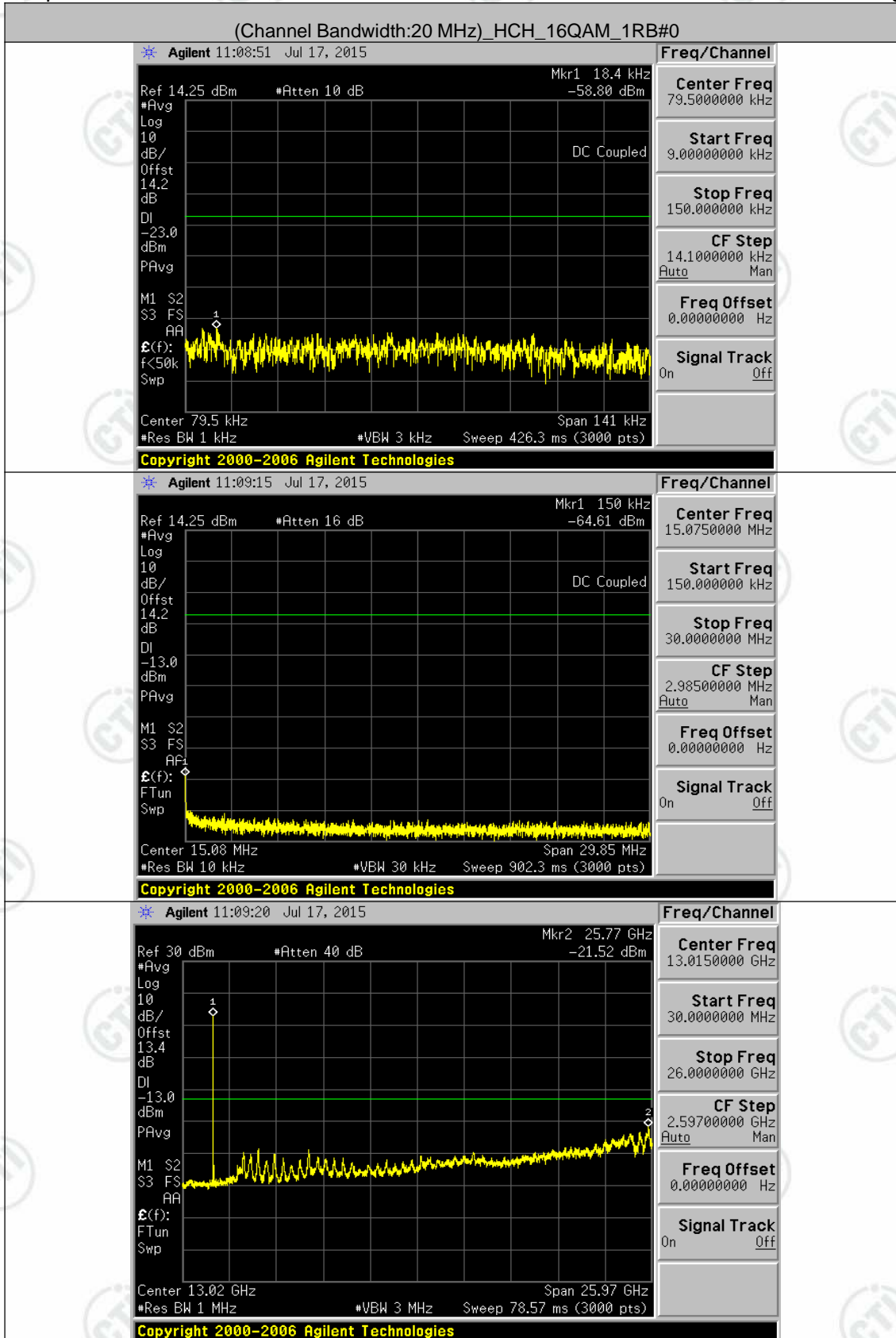


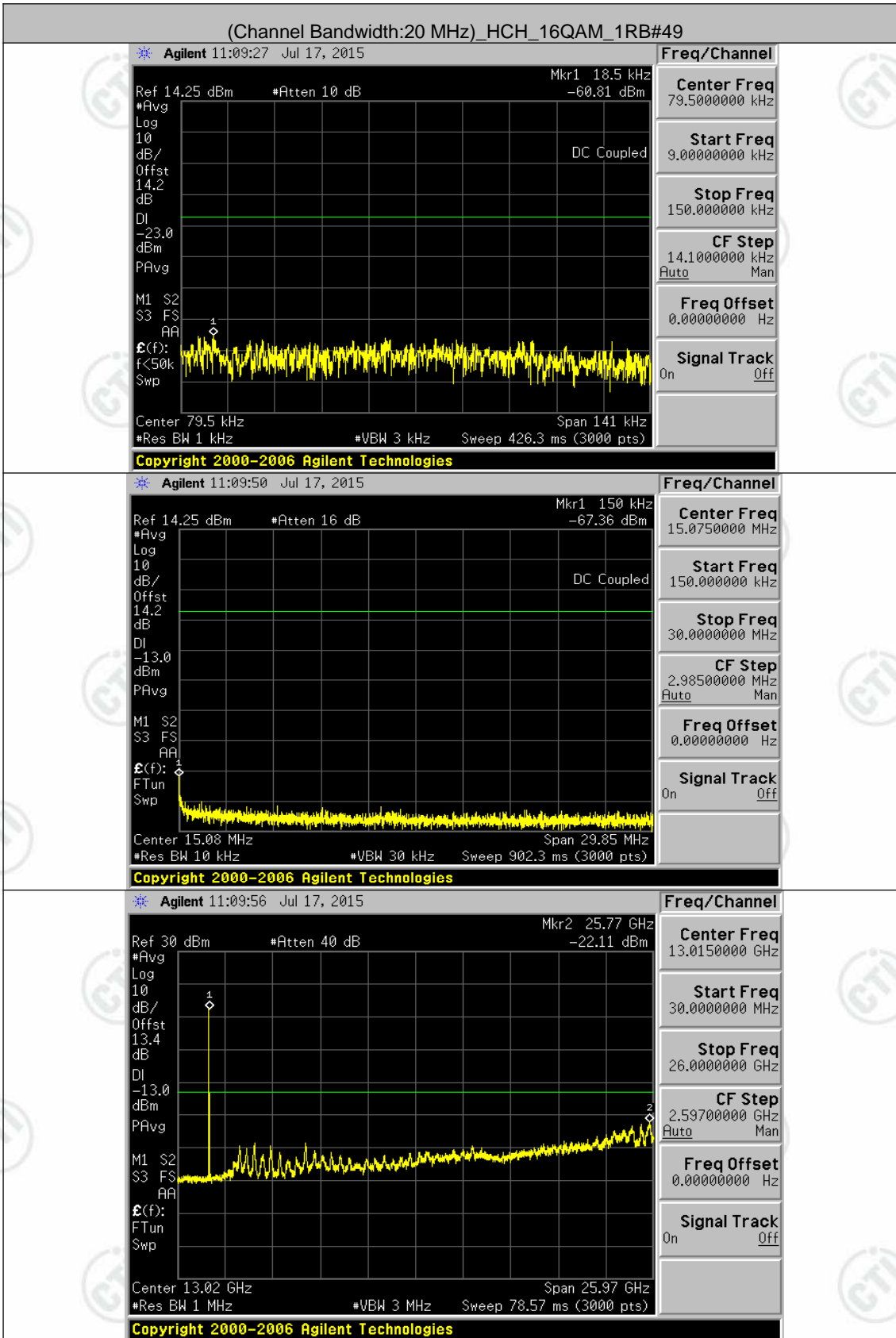




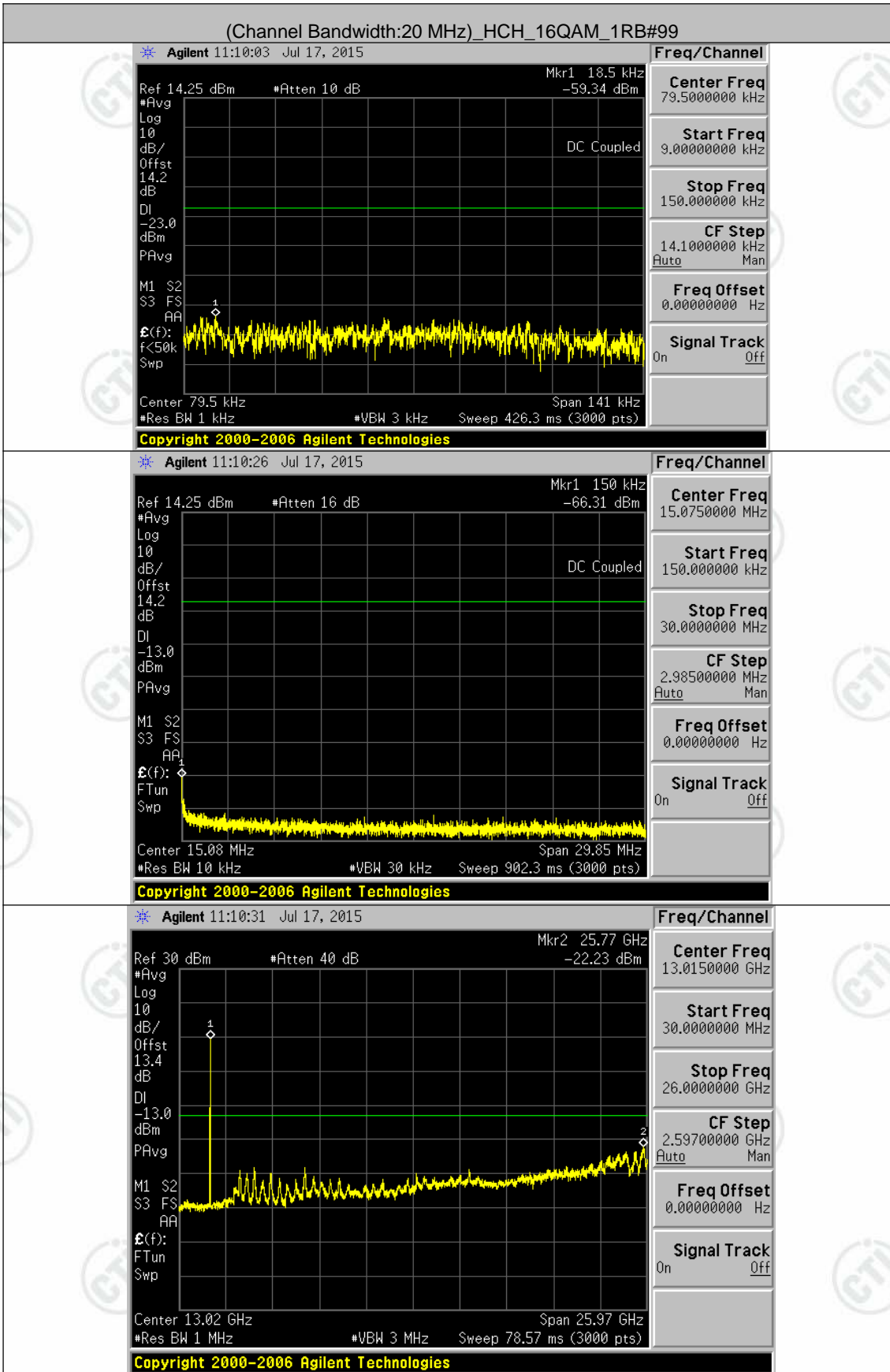












**Appendix F: Frequency Stability**

Test Result

VL is 3.5V, VN is 3.6V, VH is 3.7V.

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	1.19	0.000694	± 2.5	PASS
		VN	TN	1.32	0.000769	± 2.5	PASS
		VH	TN	2.25	0.001313	± 2.5	PASS
	MCH	VL	TN	-0.06	-0.000033	± 2.5	PASS
		VN	TN	-0.69	-0.000396	± 2.5	PASS
		VH	TN	0.96	0.000553	± 2.5	PASS
	HCH	VL	TN	-4.49	-0.002560	± 2.5	PASS
		VN	TN	-3.72	-0.002120	± 2.5	PASS
		VH	TN	-4.45	-0.002536	± 2.5	PASS
16QAM	LCH	VL	TN	1.54	0.000903	± 2.5	PASS
		VN	TN	1.09	0.000636	± 2.5	PASS
		VH	TN	1.76	0.001029	± 2.5	PASS
	MCH	VL	TN	1.27	0.000735	± 2.5	PASS
		VN	TN	0.06	0.000033	± 2.5	PASS
		VH	TN	0.30	0.000173	± 2.5	PASS
	HCH	VL	TN	-1.93	-0.001101	± 2.5	PASS
		VN	TN	-3.18	-0.001810	± 2.5	PASS
		VH	TN	-3.00	-0.001712	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.92	0.000535	± 2.5	PASS
		VN	-20	1.29	0.000753	± 2.5	PASS
		VN	-10	1.33	0.000778	± 2.5	PASS
		VN	0	0.87	0.000510	± 2.5	PASS
		VN	10	1.50	0.000878	± 2.5	PASS
		VN	20	1.67	0.000978	± 2.5	PASS
		VN	30	1.62	0.000945	± 2.5	PASS
		VN	40	2.39	0.001396	± 2.5	PASS
		VN	50	1.72	0.001003	± 2.5	PASS
	MCH	VN	-30	-0.83	-0.000479	± 2.5	PASS
		VN	-20	-0.49	-0.000281	± 2.5	PASS
		VN	-10	0.54	0.000314	± 2.5	PASS
		VN	0	-0.09	-0.000050	± 2.5	PASS
		VN	10	0.84	0.000487	± 2.5	PASS
		VN	20	-0.57	-0.000330	± 2.5	PASS
		VN	30	-1.24	-0.000718	± 2.5	PASS
		VN	40	0.43	0.000248	± 2.5	PASS
		VN	50	-0.04	-0.000025	± 2.5	PASS
	HCH	VN	-30	-7.11	-0.004053	± 2.5	PASS
		VN	-20	-5.16	-0.002944	± 2.5	PASS
		VN	-10	-3.09	-0.001761	± 2.5	PASS
		VN	0	-2.69	-0.001533	± 2.5	PASS
		VN	0	-2.69	-0.001533	± 2.5	PASS

16QAM	LCH	VN	10	-4.41	-0.002512	± 2.5	PASS
		VN	20	-3.06	-0.001745	± 2.5	PASS
		VN	30	-3.25	-0.001851	± 2.5	PASS
		VN	40	-2.95	-0.001680	± 2.5	PASS
		VN	50	-3.03	-0.001729	± 2.5	PASS
	MCH	VN	-30	1.27	0.000744	± 2.5	PASS
		VN	-20	1.65	0.000962	± 2.5	PASS
		VN	-10	0.20	0.000117	± 2.5	PASS
		VN	0	1.22	0.000711	± 2.5	PASS
		VN	10	1.13	0.000661	± 2.5	PASS
		VN	20	0.77	0.000452	± 2.5	PASS
		VN	30	1.79	0.001045	± 2.5	PASS
		VN	40	1.26	0.000736	± 2.5	PASS
		VN	50	1.65	0.000962	± 2.5	PASS
		VN	-30	0.96	0.000553	± 2.5	PASS
		VN	-20	0.41	0.000239	± 2.5	PASS
		VN	-10	-0.26	-0.000149	± 2.5	PASS
		VN	0	-0.89	-0.000512	± 2.5	PASS
		VN	10	0.64	0.000372	± 2.5	PASS
		VN	20	-0.04	-0.000025	± 2.5	PASS
	VN	30	-0.23	-0.000132	± 2.5	PASS	
	VN	40	0.40	0.000231	± 2.5	PASS	
	VN	50	1.69	0.000974	± 2.5	PASS	
	HCH	VN	-30	-2.50	-0.001427	± 2.5	PASS
		VN	-20	-3.35	-0.001908	± 2.5	PASS
		VN	-10	-3.53	-0.002014	± 2.5	PASS
		VN	0	-3.98	-0.002267	± 2.5	PASS
		VN	10	-2.35	-0.001337	± 2.5	PASS
		VN	20	-2.83	-0.001615	± 2.5	PASS
		VN	30	-2.57	-0.001468	± 2.5	PASS
VN		40	-3.05	-0.001737	± 2.5	PASS	
VN	50	-3.19	-0.001818	± 2.5	PASS		

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	1.63	0.000953	± 2.5	PASS
		VN	TN	-0.03	-0.000017	± 2.5	PASS
		VH	TN	1.67	0.000978	± 2.5	PASS
	MCH	VL	TN	-0.87	-0.000504	± 2.5	PASS
		VN	TN	0.33	0.000190	± 2.5	PASS
		VH	TN	0.93	0.000537	± 2.5	PASS
	HCH	VL	TN	0.76	0.000432	± 2.5	PASS
		VN	TN	-0.11	-0.000065	± 2.5	PASS
		VH	TN	-0.37	-0.000212	± 2.5	PASS
16QAM	LCH	VL	TN	-0.16	-0.000092	± 2.5	PASS
		VN	TN	-0.69	-0.000401	± 2.5	PASS
		VH	TN	-0.57	-0.000334	± 2.5	PASS
	MCH	VL	TN	0.96	0.000553	± 2.5	PASS

		VN	TN	-1.16	-0.000669	± 2.5	PASS	
		VH	TN	-0.13	-0.000074	± 2.5	PASS	
		VL	TN	-0.54	-0.000310	± 2.5	PASS	
		VN	TN	-0.70	-0.000400	± 2.5	PASS	
		VH	TN	-0.09	-0.000049	± 2.5	PASS	
Temperature								
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict	
QPSK	LCH	VN	-30	-0.33	-0.000192	± 2.5	PASS	
		VN	-20	-0.50	-0.000293	± 2.5	PASS	
		VN	-10	0.96	0.000560	± 2.5	PASS	
		VN	0	1.49	0.000869	± 2.5	PASS	
		VN	10	-0.39	-0.000226	± 2.5	PASS	
		VN	20	0.92	0.000535	± 2.5	PASS	
		VN	30	0.33	0.000192	± 2.5	PASS	
		VN	40	0.51	0.000301	± 2.5	PASS	
	MCH	VN	50	-0.17	-0.000100	± 2.5	PASS	
		VN	-30	-0.23	-0.000132	± 2.5	PASS	
		VN	-20	-0.23	-0.000132	± 2.5	PASS	
		VN	-10	-2.88	-0.001660	± 2.5	PASS	
		VN	0	0.66	0.000380	± 2.5	PASS	
		VN	10	0.50	0.000289	± 2.5	PASS	
		VN	20	1.33	0.000768	± 2.5	PASS	
		VN	30	0.84	0.000487	± 2.5	PASS	
	HCH	VN	40	0.19	0.000107	± 2.5	PASS	
		VN	50	-0.86	-0.000495	± 2.5	PASS	
		VN	-30	-1.00	-0.000571	± 2.5	PASS	
		VN	-20	0.21	0.000122	± 2.5	PASS	
		VN	-10	-0.21	-0.000122	± 2.5	PASS	
		VN	0	0.37	0.000212	± 2.5	PASS	
		VN	10	1.13	0.000644	± 2.5	PASS	
		VN	20	-1.13	-0.000644	± 2.5	PASS	
	16QAM	LCH	VN	30	0.70	0.000400	± 2.5	PASS
			VN	40	0.10	0.000057	± 2.5	PASS
			VN	50	-0.50	-0.000286	± 2.5	PASS
			VN	-30	-0.40	-0.000234	± 2.5	PASS
VN			-20	0.01	0.000008	± 2.5	PASS	
VN			-10	0.51	0.000301	± 2.5	PASS	
VN			0	0.36	0.000209	± 2.5	PASS	
VN			10	0.77	0.000451	± 2.5	PASS	
MCH		VN	20	0.17	0.000100	± 2.5	PASS	
		VN	30	-3.35	-0.001956	± 2.5	PASS	
		VN	40	-3.62	-0.002115	± 2.5	PASS	
		VN	50	-0.06	-0.000033	± 2.5	PASS	
		VN	-30	0.13	0.000074	± 2.5	PASS	
		VN	-20	0.51	0.000297	± 2.5	PASS	
		VN	-10	0.07	0.000041	± 2.5	PASS	
		VN	0	0.39	0.000223	± 2.5	PASS	
	VN	10	-0.01	-0.000008	± 2.5	PASS		
	VN	20	-0.66	-0.000380	± 2.5	PASS		
	VN	30	0.04	0.000025	± 2.5	PASS		
	VN	40	0.70	0.000405	± 2.5	PASS		

	HCH	VN	50	0.06	0.000033	± 2.5	PASS
		VN	-30	-0.62	-0.000351	± 2.5	PASS
		VN	-20	-0.20	-0.000114	± 2.5	PASS
		VN	-10	0.20	0.000114	± 2.5	PASS
		VN	0	-0.10	-0.000057	± 2.5	PASS
		VN	10	0.56	0.000318	± 2.5	PASS
		VN	20	0.37	0.000212	± 2.5	PASS
		VN	30	1.23	0.000702	± 2.5	PASS
		VN	40	-0.94	-0.000538	± 2.5	PASS
		VN	50	-0.80	-0.000457	± 2.5	PASS

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	2.02	0.001178	± 2.5	PASS
		VN	TN	0.24	0.000142	± 2.5	PASS
		VH	TN	2.13	0.001245	± 2.5	PASS
	MCH	VL	TN	-0.49	-0.000281	± 2.5	PASS
		VN	TN	1.24	0.000718	± 2.5	PASS
		VH	TN	0.13	0.000074	± 2.5	PASS
	HCH	VL	TN	-4.72	-0.002694	± 2.5	PASS
		VN	TN	-2.80	-0.001600	± 2.5	PASS
		VH	TN	-5.11	-0.002914	± 2.5	PASS
16QAM	LCH	VL	TN	-2.98	-0.001737	± 2.5	PASS
		VN	TN	-0.66	-0.000384	± 2.5	PASS
		VH	TN	-1.57	-0.000919	± 2.5	PASS
	MCH	VL	TN	-2.93	-0.001693	± 2.5	PASS
		VN	TN	-2.78	-0.001602	± 2.5	PASS
		VH	TN	-2.73	-0.001577	± 2.5	PASS
	HCH	VL	TN	-5.54	-0.003159	± 2.5	PASS
		VN	TN	-2.59	-0.001477	± 2.5	PASS
		VH	TN	-5.32	-0.003037	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-0.96	-0.000560	± 2.5	PASS
		VN	-20	-0.70	-0.000409	± 2.5	PASS
		VN	-10	-0.79	-0.000459	± 2.5	PASS
		VN	0	1.83	0.001069	± 2.5	PASS
		VN	10	2.17	0.001270	± 2.5	PASS
		VN	20	3.03	0.001771	± 2.5	PASS
		VN	30	1.50	0.000877	± 2.5	PASS
		VN	40	1.82	0.001061	± 2.5	PASS
		VN	50	3.03	0.001771	± 2.5	PASS
	MCH	VN	-30	1.03	0.000594	± 2.5	PASS
		VN	-20	0.86	0.000495	± 2.5	PASS
		VN	-10	0.27	0.000157	± 2.5	PASS
		VN	0	1.39	0.000801	± 2.5	PASS
		VN	10	0.39	0.000223	± 2.5	PASS

	VN	20	-0.01	-0.000008	± 2.5	PASS	
		30	0.13	0.000074	± 2.5	PASS	
		40	1.95	0.001123	± 2.5	PASS	
		50	0.64	0.000372	± 2.5	PASS	
	HCH	VN	-30	-4.45	-0.002539	± 2.5	PASS
		VN	-20	-2.42	-0.001379	± 2.5	PASS
		VN	-10	-2.55	-0.001453	± 2.5	PASS
		VN	0	-1.43	-0.000816	± 2.5	PASS
		VN	10	-1.46	-0.000833	± 2.5	PASS
		VN	20	-2.99	-0.001706	± 2.5	PASS
		VN	30	-1.90	-0.001086	± 2.5	PASS
		VN	40	-3.20	-0.001828	± 2.5	PASS
		VN	50	-2.62	-0.001494	± 2.5	PASS
		16QAM	LCH	VN	-30	1.06	0.000618
VN	-20			0.74	0.000434	± 2.5	PASS
VN	-10			0.50	0.000292	± 2.5	PASS
VN	0			2.45	0.001428	± 2.5	PASS
VN	10			2.15	0.001253	± 2.5	PASS
VN	20			-1.90	-0.001111	± 2.5	PASS
VN	30			-1.02	-0.000593	± 2.5	PASS
VN	40			-2.75	-0.001604	± 2.5	PASS
MCH	VN		50	-1.70	-0.000994	± 2.5	PASS
	VN		-30	-0.70	-0.000405	± 2.5	PASS
	VN		-20	-0.04	-0.000025	± 2.5	PASS
	VN		-10	0.87	0.000504	± 2.5	PASS
	VN		0	0.06	0.000033	± 2.5	PASS
	VN		10	-1.87	-0.001082	± 2.5	PASS
	VN		20	0.37	0.000215	± 2.5	PASS
	VN		30	-0.70	-0.000405	± 2.5	PASS
	VN		40	-0.43	-0.000248	± 2.5	PASS
	VN		50	-2.40	-0.001387	± 2.5	PASS
HCH	VN		-30	-2.78	-0.001584	± 2.5	PASS
	VN		-20	-2.95	-0.001682	± 2.5	PASS
	VN		-10	-2.36	-0.001347	± 2.5	PASS
	VN		0	-3.60	-0.002057	± 2.5	PASS
	VN		10	-2.98	-0.001698	± 2.5	PASS
	VN		20	-3.33	-0.001902	± 2.5	PASS
	VN		30	-3.16	-0.001804	± 2.5	PASS
	VN		40	-2.46	-0.001404	± 2.5	PASS
VN	50		-3.36	-0.001918	± 2.5	PASS	

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	-3.09	-0.001802	± 2.5	PASS
		VN	TN	-2.73	-0.001593	± 2.5	PASS
		VH	TN	-2.88	-0.001677	± 2.5	PASS
	MCH	VL	TN	0.64	0.000372	± 2.5	PASS
		VN	TN	0.83	0.000479	± 2.5	PASS
		VH	TN	1.27	0.000735	± 2.5	PASS
	HCH	VL	TN	1.36	0.000777	± 2.5	PASS
		VN	TN	1.13	0.000646	± 2.5	PASS
		VH	TN	1.20	0.000687	± 2.5	PASS
16QAM	LCH	VL	TN	-2.70	-0.001576	± 2.5	PASS
		VN	TN	-2.15	-0.001251	± 2.5	PASS
		VH	TN	-3.96	-0.002311	± 2.5	PASS
	MCH	VL	TN	-0.23	-0.000132	± 2.5	PASS
		VN	TN	0.00	0.000000	± 2.5	PASS
		VH	TN	0.11	0.000066	± 2.5	PASS
	HCH	VL	TN	1.36	0.000777	± 2.5	PASS
		VN	TN	1.75	0.000997	± 2.5	PASS
		VH	TN	2.20	0.001259	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	-1.32	-0.000767	± 2.5	PASS
		VN	-20	-2.20	-0.001285	± 2.5	PASS
		VN	-10	-2.27	-0.001326	± 2.5	PASS
		VN	0	-2.16	-0.001260	± 2.5	PASS
		VN	10	-1.06	-0.000617	± 2.5	PASS
		VN	20	-2.32	-0.001351	± 2.5	PASS
		VN	30	-2.90	-0.001693	± 2.5	PASS
		VN	40	-3.38	-0.001969	± 2.5	PASS
	MCH	VN	50	-2.52	-0.001468	± 2.5	PASS
		VN	-30	0.64	0.000372	± 2.5	PASS
		VN	-20	0.37	0.000215	± 2.5	PASS
		VN	-10	1.09	0.000628	± 2.5	PASS
		VN	0	0.89	0.000512	± 2.5	PASS
		VN	10	-0.37	-0.000215	± 2.5	PASS
		VN	20	-0.17	-0.000099	± 2.5	PASS
		VN	30	-0.16	-0.000091	± 2.5	PASS
	HCH	VN	40	0.01	0.000008	± 2.5	PASS
		VN	50	0.83	0.000479	± 2.5	PASS
		VN	-30	2.32	0.001324	± 2.5	PASS
		VN	-20	2.13	0.001218	± 2.5	PASS
		VN	-10	1.47	0.000842	± 2.5	PASS
		VN	0	0.99	0.000564	± 2.5	PASS
		VN	10	1.82	0.001038	± 2.5	PASS
		VN	20	2.50	0.001431	± 2.5	PASS
VN	30	0.92	0.000523	± 2.5	PASS		
VN	40	2.56	0.001463	± 2.5	PASS		

QPSK	LCH	VN	50	2.20	0.001259	± 2.5	PASS
		VN	-30	-2.09	-0.001218	± 2.5	PASS
		VN	-20	-2.76	-0.001610	± 2.5	PASS
		VN	-10	-2.79	-0.001627	± 2.5	PASS
		VN	0	-1.62	-0.000943	± 2.5	PASS
		VN	10	-2.85	-0.001660	± 2.5	PASS
		VN	20	-2.92	-0.001702	± 2.5	PASS
		VN	30	-3.76	-0.002194	± 2.5	PASS
		VN	40	-2.89	-0.001685	± 2.5	PASS
		VN	50	-2.65	-0.001543	± 2.5	PASS
	MCH	VN	-30	0.46	0.000264	± 2.5	PASS
		VN	-20	0.69	0.000396	± 2.5	PASS
		VN	-10	-0.04	-0.000025	± 2.5	PASS
		VN	0	1.40	0.000809	± 2.5	PASS
		VN	10	0.54	0.000314	± 2.5	PASS
		VN	20	0.57	0.000330	± 2.5	PASS
		VN	30	-2.50	-0.001445	± 2.5	PASS
		VN	40	-2.50	-0.001445	± 2.5	PASS
		VN	50	-2.36	-0.001362	± 2.5	PASS
		HCH	VN	-30	1.39	0.000793	± 2.5
	VN		-20	3.28	0.001872	± 2.5	PASS
	VN		-10	2.80	0.001602	± 2.5	PASS
	VN		0	2.82	0.001610	± 2.5	PASS
	VN		10	1.76	0.001005	± 2.5	PASS
	VN		20	1.89	0.001079	± 2.5	PASS
	VN		30	2.37	0.001357	± 2.5	PASS
	VN		40	1.69	0.000965	± 2.5	PASS
	VN		50	0.62	0.000351	± 2.5	PASS

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	-0.01	-0.000008	± 2.5	PASS
		VN	TN	-0.01	-0.000008	± 2.5	PASS
		VH	TN	0.10	0.000058	± 2.5	PASS
	MCH	VL	TN	-2.06	-0.001189	± 2.5	PASS
		VN	TN	-1.54	-0.000892	± 2.5	PASS
		VH	TN	-2.35	-0.001354	± 2.5	PASS
	HCH	VL	TN	0.63	0.000360	± 2.5	PASS
		VN	TN	0.33	0.000188	± 2.5	PASS
		VH	TN	-0.43	-0.000246	± 2.5	PASS
16QAM	LCH	VL	TN	-0.56	-0.000325	± 2.5	PASS
		VN	TN	-0.51	-0.000300	± 2.5	PASS
		VH	TN	-0.21	-0.000125	± 2.5	PASS
	MCH	VL	TN	0.10	0.000058	± 2.5	PASS
		VN	TN	0.23	0.000132	± 2.5	PASS
		VH	TN	0.10	0.000058	± 2.5	PASS
	HCH	VL	TN	0.06	0.000033	± 2.5	PASS
		VN	TN	0.43	0.000246	± 2.5	PASS



		VH	TN	0.09	0.000049	± 2.5	PASS	
Temperature								
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict	
QPSK	LCH	VN	-30	-0.19	-0.000108	± 2.5	PASS	
		VN	-20	1.16	0.000675	± 2.5	PASS	
		VN	-10	0.93	0.000541	± 2.5	PASS	
		VN	0	0.92	0.000533	± 2.5	PASS	
		VN	10	-1.79	-0.001041	± 2.5	PASS	
		VN	20	0.27	0.000158	± 2.5	PASS	
		VN	30	-0.43	-0.000250	± 2.5	PASS	
		VN	40	-0.19	-0.000108	± 2.5	PASS	
	MCH	VN	50	0.19	0.000108	± 2.5	PASS	
		VN	-30	0.59	0.000339	± 2.5	PASS	
		VN	-20	-0.23	-0.000132	± 2.5	PASS	
		VN	-10	1.42	0.000817	± 2.5	PASS	
		VN	0	-0.24	-0.000140	± 2.5	PASS	
		VN	10	0.10	0.000058	± 2.5	PASS	
		VN	20	-2.02	-0.001164	± 2.5	PASS	
		VN	30	-2.22	-0.001280	± 2.5	PASS	
	HCH	VN	40	-2.69	-0.001552	± 2.5	PASS	
		VN	50	-1.95	-0.001123	± 2.5	PASS	
		VN	-30	-0.46	-0.000262	± 2.5	PASS	
		VN	-20	0.09	0.000049	± 2.5	PASS	
		VN	-10	-0.27	-0.000156	± 2.5	PASS	
		VN	0	0.72	0.000409	± 2.5	PASS	
		VN	10	0.56	0.000319	± 2.5	PASS	
		VN	20	-0.14	-0.000082	± 2.5	PASS	
	16QAM	LCH	VN	30	0.53	0.000303	± 2.5	PASS
			VN	40	-1.97	-0.001130	± 2.5	PASS
			VN	50	-1.76	-0.001007	± 2.5	PASS
			VN	-30	-0.59	-0.000341	± 2.5	PASS
VN			-20	-0.33	-0.000192	± 2.5	PASS	
VN			-10	-0.80	-0.000466	± 2.5	PASS	
VN			0	0.34	0.000200	± 2.5	PASS	
VN			10	-0.46	-0.000267	± 2.5	PASS	
MCH		VN	20	-0.16	-0.000092	± 2.5	PASS	
		VN	30	-0.50	-0.000292	± 2.5	PASS	
		VN	40	-0.19	-0.000108	± 2.5	PASS	
		VN	50	0.60	0.000350	± 2.5	PASS	
		VN	-30	-0.09	-0.000050	± 2.5	PASS	
		VN	-20	1.37	0.000793	± 2.5	PASS	
		VN	-10	0.01	0.000008	± 2.5	PASS	
		VN	0	1.24	0.000718	± 2.5	PASS	
HCH		VN	10	0.17	0.000099	± 2.5	PASS	
		VN	20	0.36	0.000206	± 2.5	PASS	
		VN	30	-0.16	-0.000091	± 2.5	PASS	
		VN	40	0.11	0.000066	± 2.5	PASS	
	VN	50	0.56	0.000322	± 2.5	PASS		
	VN	-30	-0.41	-0.000237	± 2.5	PASS		
	VN	-20	0.17	0.000098	± 2.5	PASS		
	VN	-10	0.67	0.000385	± 2.5	PASS		

	VN	0	-0.66	-0.000377	± 2.5	PASS
	VN	10	-2.05	-0.001171	± 2.5	PASS
	VN	20	-0.69	-0.000393	± 2.5	PASS
	VN	30	-0.03	-0.000016	± 2.5	PASS
	VN	40	0.26	0.000147	± 2.5	PASS
	VN	50	0.17	0.000098	± 2.5	PASS

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	0.70	0.000408	± 2.5	PASS
		VN	TN	1.80	0.001048	± 2.5	PASS
		VH	TN	1.53	0.000890	± 2.5	PASS
	MCH	VL	TN	0.24	0.000140	± 2.5	PASS
		VN	TN	0.13	0.000074	± 2.5	PASS
		VH	TN	0.31	0.000182	± 2.5	PASS
	HCH	VL	TN	-3.71	-0.002123	± 2.5	PASS
		VN	TN	-2.83	-0.001623	± 2.5	PASS
		VH	TN	-3.66	-0.002099	± 2.5	PASS
16QAM	LCH	VL	TN	1.54	0.000898	± 2.5	PASS
		VN	TN	1.34	0.000782	± 2.5	PASS
		VH	TN	1.22	0.000707	± 2.5	PASS
	MCH	VL	TN	-0.04	-0.000025	± 2.5	PASS
		VN	TN	-1.80	-0.001040	± 2.5	PASS
		VH	TN	0.30	0.000173	± 2.5	PASS
	HCH	VL	TN	-5.35	-0.003066	± 2.5	PASS
		VN	TN	-5.11	-0.002927	± 2.5	PASS
		VH	TN	-5.31	-0.003041	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.90	0.001106	± 2.5	PASS
		VN	-20	0.57	0.000333	± 2.5	PASS
		VN	-10	1.24	0.000724	± 2.5	PASS
		VN	0	1.39	0.000807	± 2.5	PASS
		VN	10	1.42	0.000823	± 2.5	PASS
		VN	20	1.20	0.000699	± 2.5	PASS
		VN	30	1.26	0.000732	± 2.5	PASS
		VN	40	1.52	0.000882	± 2.5	PASS
		VN	50	1.27	0.000740	± 2.5	PASS
	MCH	VN	-30	0.37	0.000215	± 2.5	PASS
		VN	-20	0.73	0.000421	± 2.5	PASS
		VN	-10	0.67	0.000388	± 2.5	PASS
		VN	0	-0.06	-0.000033	± 2.5	PASS
		VN	10	-0.57	-0.000330	± 2.5	PASS
		VN	20	0.23	0.000132	± 2.5	PASS
		VN	30	0.93	0.000537	± 2.5	PASS
		VN	40	-0.23	-0.000132	± 2.5	PASS
		VN	50	0.74	0.000429	± 2.5	PASS

16QAM	HCH	VN	-30	-3.63	-0.002082	± 2.5	PASS
		VN	-20	-3.66	-0.002099	± 2.5	PASS
		VN	-10	-2.78	-0.001590	± 2.5	PASS
		VN	0	-2.47	-0.001418	± 2.5	PASS
		VN	10	-3.32	-0.001902	± 2.5	PASS
		VN	20	-5.91	-0.003386	± 2.5	PASS
		VN	30	-5.25	-0.003009	± 2.5	PASS
		VN	40	-5.34	-0.003058	± 2.5	PASS
		VN	50	-4.52	-0.002590	± 2.5	PASS
	LCH	VN	-30	2.73	0.001589	± 2.5	PASS
		VN	-20	-1.42	-0.000823	± 2.5	PASS
		VN	-10	-1.69	-0.000981	± 2.5	PASS
		VN	0	-1.62	-0.000940	± 2.5	PASS
		VN	10	-1.39	-0.000807	± 2.5	PASS
		VN	20	2.10	0.001223	± 2.5	PASS
		VN	30	-2.17	-0.001264	± 2.5	PASS
		VN	40	-1.72	-0.000998	± 2.5	PASS
		VN	50	-1.43	-0.000832	± 2.5	PASS
MCH	VN	-30	-0.70	-0.000405	± 2.5	PASS	
	VN	-20	0.03	0.000017	± 2.5	PASS	
	VN	-10	0.23	0.000132	± 2.5	PASS	
	VN	0	0.50	0.000289	± 2.5	PASS	
	VN	10	0.53	0.000306	± 2.5	PASS	
	VN	20	0.04	0.000025	± 2.5	PASS	
	VN	30	0.46	0.000264	± 2.5	PASS	
	VN	40	-0.11	-0.000066	± 2.5	PASS	
	VN	50	0.47	0.000272	± 2.5	PASS	
HCH	VN	-30	-2.16	-0.001238	± 2.5	PASS	
	VN	-20	-2.13	-0.001221	± 2.5	PASS	
	VN	-10	-2.65	-0.001517	± 2.5	PASS	
	VN	0	-3.56	-0.002041	± 2.5	PASS	
	VN	10	-2.68	-0.001533	± 2.5	PASS	
	VN	20	-4.79	-0.002746	± 2.5	PASS	
	VN	30	-5.18	-0.002968	± 2.5	PASS	
	VN	40	-4.95	-0.002836	± 2.5	PASS	
	VN	50	-5.35	-0.003066	± 2.5	PASS	

**Appendix G): Field strength of spurious radiation**

Receiver Setup:	<table border="1"> <thead> <tr> <th>Frequency</th> <th>Detector</th> <th>RBW</th> <th>VBW</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>0.009MHz-30MHz</td> <td>Peak</td> <td>10kHz</td> <td>30kHz</td> <td>Peak</td> </tr> <tr> <td>30MHz-1GHz</td> <td>Peak</td> <td>120kHz</td> <td>300kHz</td> <td>Peak</td> </tr> <tr> <td>Above 1GHz</td> <td>Peak</td> <td>1MHz</td> <td>3MHz</td> <td>Peak</td> </tr> </tbody> </table>	Frequency	Detector	RBW	VBW	Remark	0.009MHz-30MHz	Peak	10kHz	30kHz	Peak	30MHz-1GHz	Peak	120kHz	300kHz	Peak	Above 1GHz	Peak	1MHz	3MHz	Peak
Frequency	Detector	RBW	VBW	Remark																	
0.009MHz-30MHz	Peak	10kHz	30kHz	Peak																	
30MHz-1GHz	Peak	120kHz	300kHz	Peak																	
Above 1GHz	Peak	1MHz	3MHz	Peak																	
Measurement Procedure:	<ol style="list-style-type: none"> <li>Scan up to 10<sup>th</sup> harmonic, find the maximum radiation frequency to measure.</li> <li>The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT. Test procedure as below: <ol style="list-style-type: none"> <li>The EUT was powered ON and placed on a 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.</li> <li>The EUT was set 3 meters(above 18GHz the distance is 1 meter) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.</li> <li>Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.</li> <li>The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.</li> <li>A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions.</li> <li>The output power into the substitution antenna was then measured.</li> <li>Steps 6) and 7) were repeated with both antennas polarized.</li> <li>Calculate power in dBm by the following formula:  <math display="block">\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBd)}</math> <math display="block">\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}</math> <math display="block">\text{EIRP} = \text{ERP} + 2.15\text{dB}</math>                     where:                      Pg is the generator output power into the substitution antenna.                 </li> <li>Test the EUT in the lowest channel, the middle channel the Highest channel</li> <li>The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode, And found the X axis positioning which it is worse case.</li> <li>Repeat above procedures until all frequencies measured was complete.</li> </ol> </li> </ol>																				
Limit:	Attenuated at least 43+10log(P)																				

**Test Data:**  
**Above 1GHz**  
**QPSK**

Band 4 19957 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1115.673	149	5	-57.35	-13.00	-44.35	Pass	H
1439.090	150	200	-56.42	-13.00	-43.42	Pass	H
3316.617	150	36	-51.05	-13.00	-38.05	Pass	H
4760.776	156	78	-50.24	-13.00	-37.24	Pass	H
6283.164	149	200	-45.71	-13.00	-32.71	Pass	H
8063.403	149	151	-47.31	-13.00	-34.31	Pass	H
1198.095	150	47	-56.92	-13.00	-43.92	Pass	V
3258.042	150	90	-51.93	-13.00	-38.93	Pass	V
3757.208	152	210	-49.93	-13.00	-36.93	Pass	V
5177.971	150	22	-50.27	-13.00	-37.27	Pass	V
6445.156	150	67	-46.73	-13.00	-33.73	Pass	V
8637.084	151	20	-47.46	-13.00	-34.46	Pass	V

Band 4 20175 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1112.837	150	201	-57.19	-13.00	-44.19	Pass	H
3249.760	151	20	-51.63	-13.00	-38.63	Pass	H
3757.208	150	36	-50.05	-13.00	-37.05	Pass	H
4797.271	151	78	-50.51	-13.00	-37.51	Pass	H
6445.156	149	225	-45.94	-13.00	-32.94	Pass	H
7981.717	149	56	-46.49	-13.00	-33.49	Pass	H
1147.354	150	151	-56.95	-13.00	-43.95	Pass	V
3143.979	152	31	-50.89	-13.00	-37.89	Pass	V
3747.656	150	207	-50.00	-13.00	-37.00	Pass	V
4809.499	151	89	-50.28	-13.00	-37.28	Pass	V
6412.427	150	60	-45.60	-13.00	-32.60	Pass	V
8022.456	149	3	-46.49	-13.00	-33.49	Pass	V

Band 4 20393 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1098.763	151	49	-57.54	-13.00	-44.54	Pass	H
1573.189	151	215	-57.82	-13.00	-44.82	Pass	H
3507.652	150	286	-44.94	-13.00	-31.94	Pass	H
5271.063	149	300	-42.52	-13.00	-29.52	Pass	H
6445.156	155	58	-46.69	-13.00	-33.69	Pass	H
7941.185	152	300	-47.18	-13.00	-34.18	Pass	H
1033.646	153	161	-57.68	-13.00	-44.68	Pass	V
1346.929	150	20	-57.72	-13.00	-44.72	Pass	V
3507.652	149	79	-48.42	-13.00	-35.42	Pass	V
5271.063	152	36	-41.05	-13.00	-28.05	Pass	V
6544.350	150	360	-45.96	-13.00	-32.96	Pass	V
7941.185	150	354	-47.20	-13.00	-34.20	Pass	V

**16QAM**

Band 4 19957 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1195.049	151	120	-56.89	-13.00	-43.89	Pass	H
3738.129	150	74	-50.12	-13.00	-37.12	Pass	H
5271.063	150	85	-49.10	-13.00	-36.10	Pass	H
6594.518	153	228	-45.71	-13.00	-32.71	Pass	H
7920.996	150	30	-47.24	-13.00	-34.24	Pass	H
9660.722	150	161	-47.01	-13.00	-34.01	Pass	H
1082.109	149	20	-57.63	-13.00	-44.63	Pass	V
1326.513	151	100	-58.37	-13.00	-45.37	Pass	V
3308.185	150	78	-50.94	-13.00	-37.94	Pass	V
3747.656	151	360	-50.29	-13.00	-37.29	Pass	V
5257.662	152	43	-50.45	-13.00	-37.45	Pass	V
6251.257	150	336	-47.27	-13.00	-34.27	Pass	V

Band 4 20175 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1112.837	150	55	-58.36	-13.00	-45.36	Pass	H
1340.089	149	355	-57.46	-13.00	-44.46	Pass	H
3291.385	152	151	-51.42	-13.00	-38.42	Pass	H
4772.910	150	24	-49.81	-13.00	-36.81	Pass	H
6412.427	150	20	-46.35	-13.00	-33.35	Pass	H
7900.858	149	11	-47.02	-13.00	-34.02	Pass	H
1079.357	150	33	-57.10	-13.00	-44.10	Pass	V
1340.089	151	247	-57.46	-13.00	-44.46	Pass	V
3747.656	151	229	-49.27	-13.00	-36.27	Pass	V
4772.910	153	20	-49.81	-13.00	-36.81	Pass	V
6445.156	149	100	-45.27	-13.00	-32.27	Pass	V
8615.126	150	80	-46.08	-13.00	-33.08	Pass	V

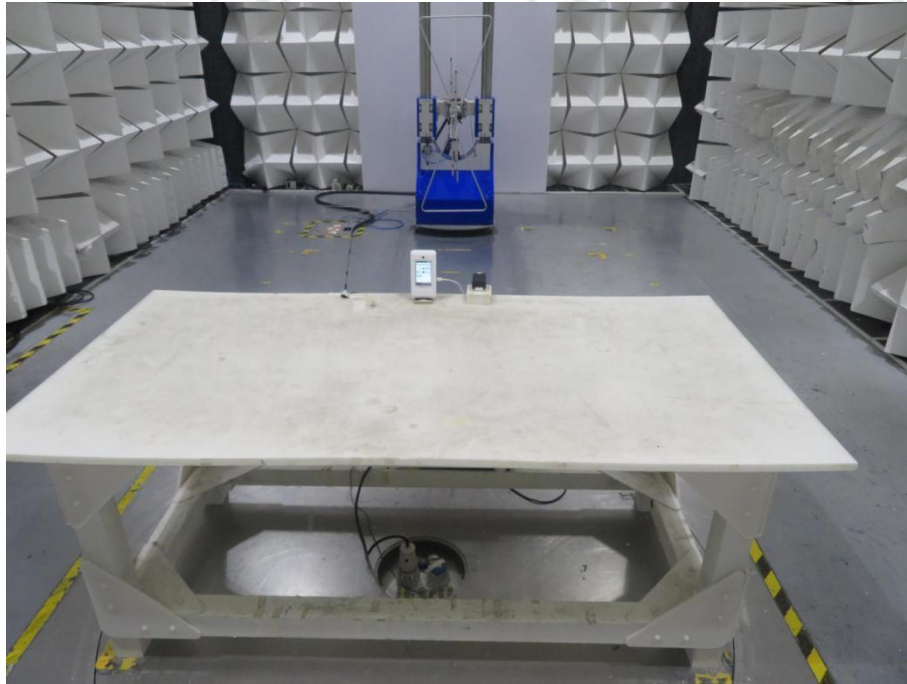
Band 4 20393 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1062.998	151	55	-56.92	-13.00	-43.92	Pass	H
1357.254	149	360	-56.58	-13.00	-43.58	Pass	H
3507.652	150	227	-46.47	-13.00	-33.47	Pass	H
5271.063	152	10	-40.83	-13.00	-27.83	Pass	H
6544.350	151	50	-45.66	-13.00	-32.66	Pass	H
8996.121	149	99	-46.28	-13.00	-33.28	Pass	H
1104.371	152	36	-57.33	-13.00	-44.33	Pass	V
1329.894	150	227	-58.16	-13.00	-45.16	Pass	V
3507.652	150	261	-47.07	-13.00	-34.07	Pass	V
5271.063	151	20	-40.44	-13.00	-27.44	Pass	V
6544.350	150	100	-46.11	-13.00	-33.11	Pass	V
7920.996	151	35	-46.85	-13.00	-33.85	Pass	V

**Note:**

- 1) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 1GHz are attenuated more than 20 dB below the applicable limit and not required to be reported, the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2) Tested with all kind of bandwidth, RB Size and RB Offset, Found the 1.4MHz with full RB were the worst case; and then Only the worst case is recorded in the report.

## PHOTOGRAPHS OF TEST SETUP

Test model No.: BW-X07HD



**Radiated spurious emission Test Setup-1(Below 1GHz)**



**Radiated spurious emission Test Setup-2(Above 1GHz)**



## PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No.EED32100251301 for EUT external and internal photos.

\*\*\* End of Report \*\*\*

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