Appendix for WCDMA

CONTENTS

Appendix A: Effective (Isotropic) Radiated Power Output Data 3

Test Result 3

Appendix B: Peak-to-Average Ratio 8

Test Result 8

Test Graphs 9

Appendix C: 26dB Bandwidth and Occupied Bandwidth 14

Test Result 14

Test Graphs 15

Appendix D: Band Edge 20

Test Result 20

Test Graphs 21

Appendix E: Conducted Spurious Emission 24

Test Result 24

Test Graphs 27

Appendix F: Frequency Stability 54

Test Result 54

Appendix A: Effective (Isotropic) Radiated Power Output Data

Test Result

Band	Channel	Power(dBm)	Limit(dBm)	Verdict
Band2	9262	22.64	33	PASS
Band2	9400	22.32	33	PASS
Band2	9538	22.41	33	PASS
Band4	1312	22.90	30	PASS
Band4	1413	22.95	30	PASS
Band4	1513	22.75	30	PASS
Band5	4132	24.63	38.5	PASS
Band5	4182	24.39	38.5	PASS
Band5	4233	24.27	38.5	PASS

Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
Band2	9262	1	22.98	33	PASS
Band2	9262	2	21.29	33	PASS
Band2	9262	3	21.29	33	PASS
Band2	9262	4	19.15	33	PASS
Band2	9400	1	21.74	33	PASS
Band2	9400	2	20.05	33	PASS
Band2	9400	3	19.74	33	PASS
Band2	9400	4	17.85	33	PASS

Band2	9538	1	22.46	33	PASS
Band2	9538	2	20.40	33	PASS
Band2	9538	3	20.77	33	PASS
Band2	9538	4	18.06	33	PASS
Band4	1312	1	20.19	30	PASS
Band4	1312	2	20.22	30	PASS
Band4	1312	3	17.59	30	PASS
Band4	1312	4	17.98	30	PASS
Band4	1413	1	19.19	30	PASS
Band4	1413	2	19.24	30	PASS
Band4	1413	3	16.71	30	PASS
Band4	1413	4	16.48	30	PASS
Band4	1513	1	19.76	30	PASS
Band4	1513	2	19.80	30	PASS
Band4	1513	3	17.24	30	PASS
Band4	1513	4	17.58	30	PASS
Band5	4132	1	23.22	38.5	PASS
Band5	4132	2	22.79	38.5	PASS
Band5	4132	3	22.66	38.5	PASS
Band5	4132	4	22.64	38.5	PASS
Band5	4182	1	23.26	38.5	PASS
Band5	4182	2	22.79	38.5	PASS

Band5	4182	3	22.72	38.5	PASS
Band5	4182	4	22.67	38.5	PASS
Band5	4233	1	23.20	38.5	PASS
Band5	4233	2	22.67	38.5	PASS
Band5	4233	3	22.65	38.5	PASS
Band5	4233	4	22.62	38.5	PASS

Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
Band2	9262	1	22.12	33	PASS
Band2	9262	2	22.07	33	PASS
Band2	9262	3	22.03	33	PASS
Band2	9262	4	21.98	33	PASS
Band2	9262	5	22.64	33	PASS
Band2	9400	1	20.94	33	PASS
Band2	9400	2	20.90	33	PASS
Band2	9400	3	20.81	33	PASS
Band2	9400	4	20.75	33	PASS
Band2	9400	5	21.41	33	PASS
Band2	9538	1	21.55	33	PASS
Band2	9538	2	21.48	33	PASS
Band2	9538	3	21.43	33	PASS
Band2	9538	4	21.45	33	PASS

Band2	9538	5	22.03	33	PASS
Band4	1312	1	20.67	30	PASS
Band4	1312	2	21.16	30	PASS
Band4	1312	3	21.06	30	PASS
Band4	1312	4	21.08	30	PASS
Band4	1312	5	21.25	30	PASS
Band4	1413	1	20.04	30	PASS
Band4	1413	2	20.44	30	PASS
Band4	1413	3	20.36	30	PASS
Band4	1413	4	20.45	30	PASS
Band4	1413	5	20.43	30	PASS
Band4	1513	1	20.28	30	PASS
Band4	1513	2	20.79	30	PASS
Band4	1513	3	20.72	30	PASS
Band4	1513	4	20.77	30	PASS
Band4	1513	5	20.82	30	PASS
Band5	4132	1	21.29	38.5	PASS
Band5	4132	2	21.80	38.5	PASS
Band5	4132	3	21.77	38.5	PASS
Band5	4132	4	21.29	38.5	PASS
Band5	4132	5	23.28	38.5	PASS
Band5	4182	1	21.32	38.5	PASS

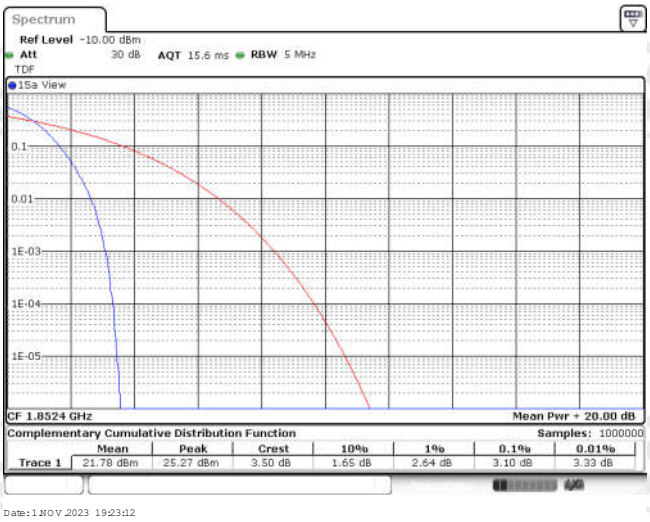
Band5	4182	2	21.80	38.5	PASS
Band5	4182	3	21.80	38.5	PASS
Band5	4182	4	21.37	38.5	PASS
Band5	4182	5	23.35	38.5	PASS
Band5	4233	1	21.27	38.5	PASS
Band5	4233	2	21.78	38.5	PASS
Band5	4233	3	21.83	38.5	PASS
Band5	4233	4	21.34	38.5	PASS
Band5	4233	5	23.31	38.5	PASS

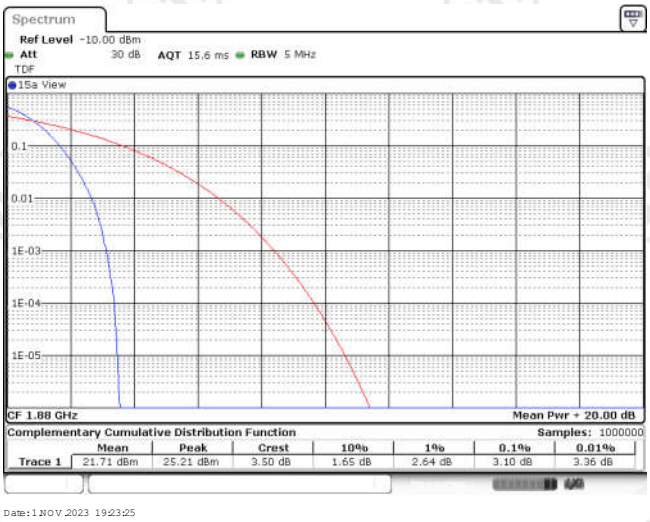
Appendix B: Peak-to-Average Ratio

Test Result

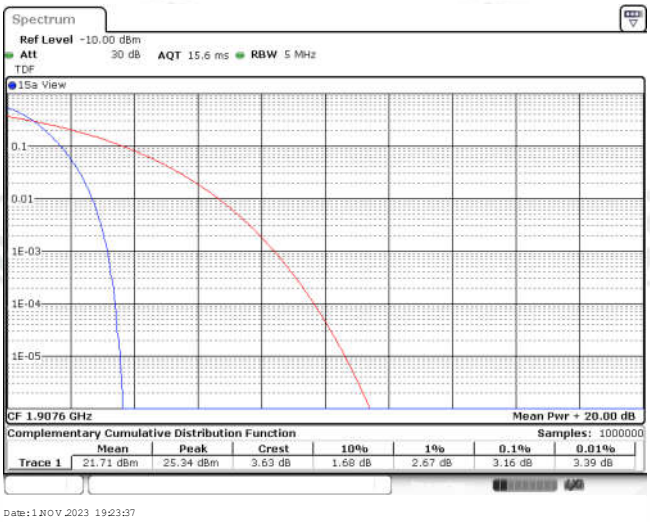
Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band2	9262	3.1	13	PASS
Band2	9400	3.1	13	PASS
Band2	9538	3.16	13	PASS
Band4	1312	3.07	13	PASS
Band4	1413	3.13	13	PASS
Band4	1513	3.07	13	PASS
Band5	4132	2.96	13	PASS
Band5	4182	3.01	13	PASS
Band5	4233	3.01	13	PASS

Test Graphs

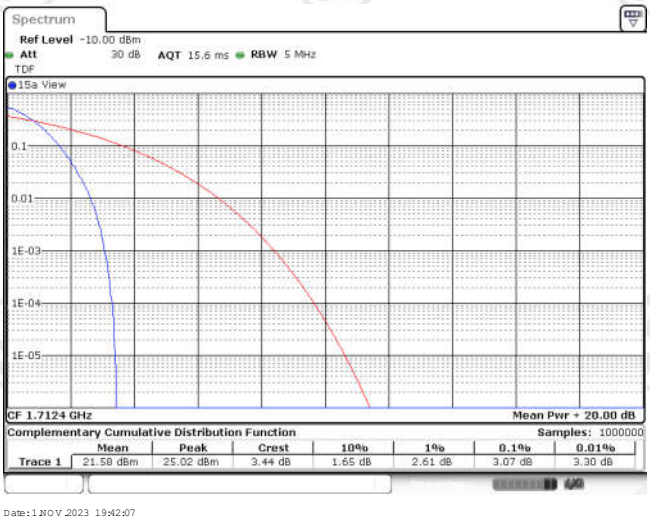
Band2-9262


Band2-9400


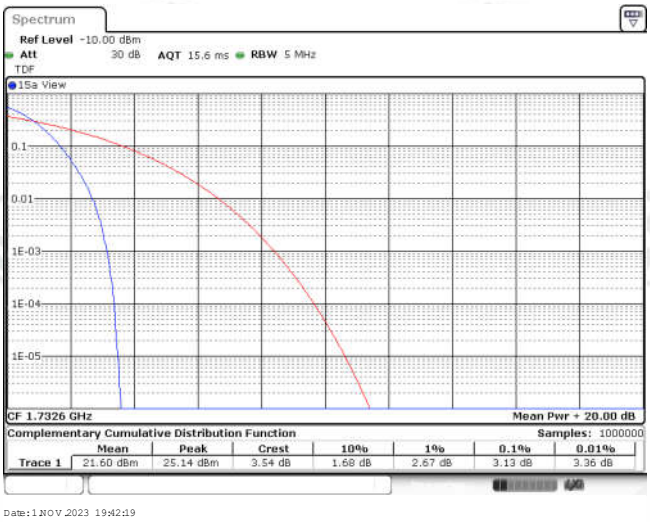
Band2-9538



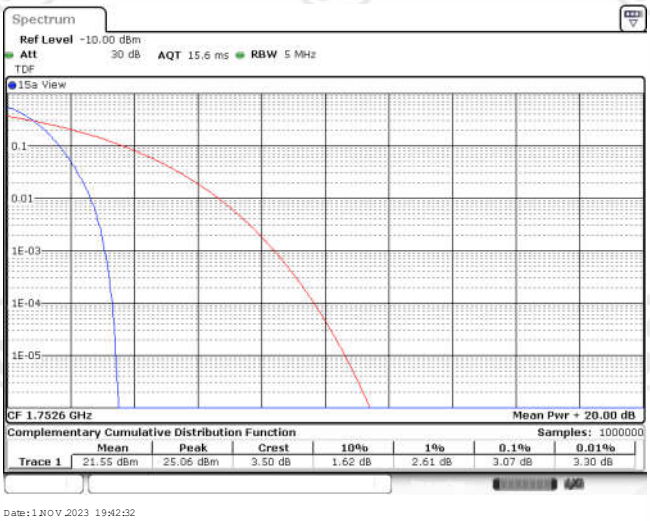
Band4-1312



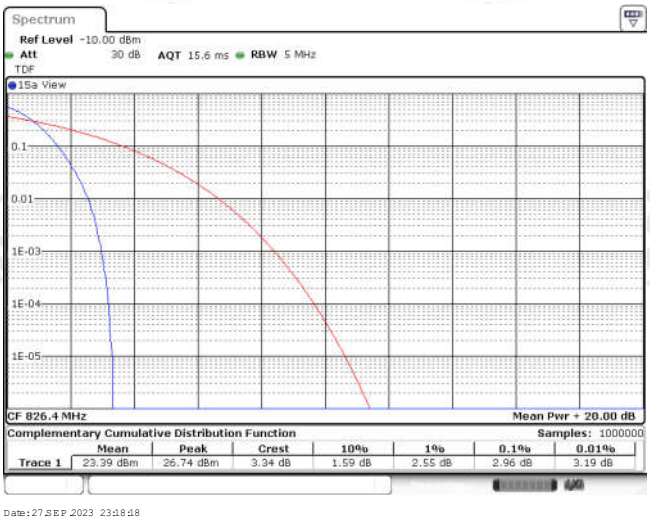
Band4-1413



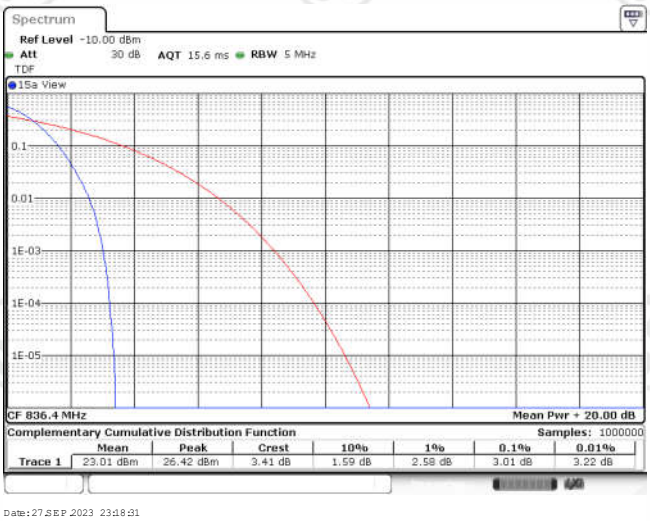
Band4-1513



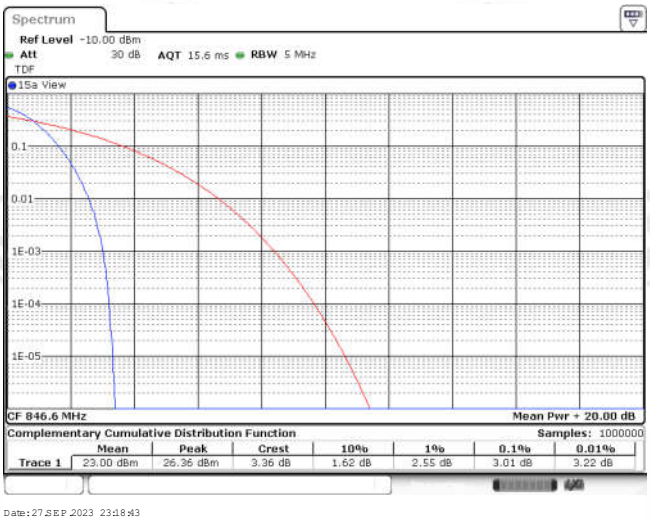
Band5-4132



Band5-4182



Band5-4233


Spectrum
Ref Level -10.00 dBm
Att 30 dB AQT 15.6 ms RBW 5 MHz
TDF
15a View
0.1
0.01
1E-03
1E-04
1E-05
CF 846.6 MHz
Mean Pwr = 20.00 dB
Complementary Cumulative Distribution Function
Samples: 1000000
Mean Peak Crest 10% 1% 0.1% 0.01%
Trace 1 23.00 dBm 26.36 dBm 3.36 dB 1.62 dB 2.55 dB 3.01 dB 3.22 dB
Date:27.SEP.2023 23:18:43

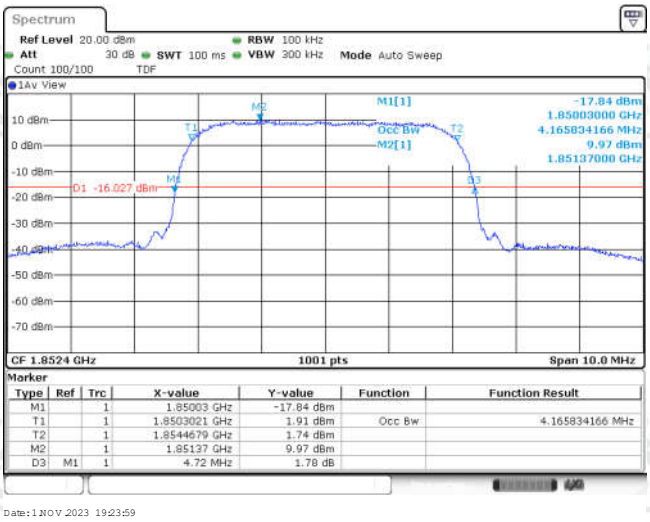
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

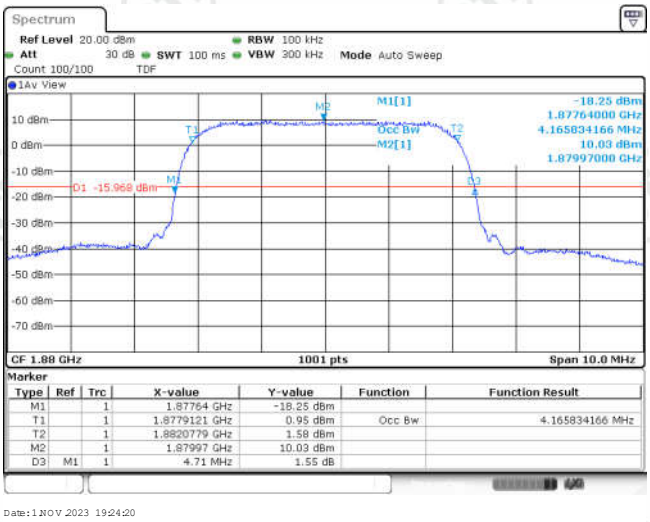
Band	Channel	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band2	9262	4.166	4.720	---	PASS
Band2	9400	4.166	4.710	---	PASS
Band2	9538	4.156	4.710	---	PASS
Band4	1312	4.176	4.710	---	PASS
Band4	1413	4.166	4.700	---	PASS
Band4	1513	4.166	4.710	---	PASS
Band5	4132	4.176	4.710	---	PASS
Band5	4182	4.166	4.710	---	PASS
Band5	4233	4.166	4.710	---	PASS

Test Graphs

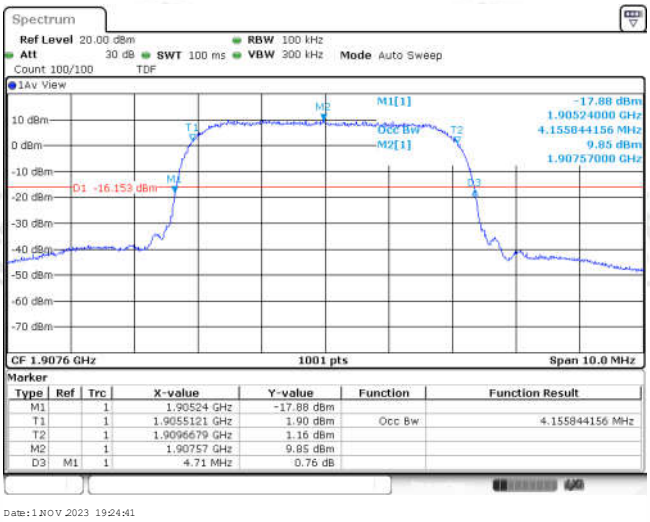
Band2-9262



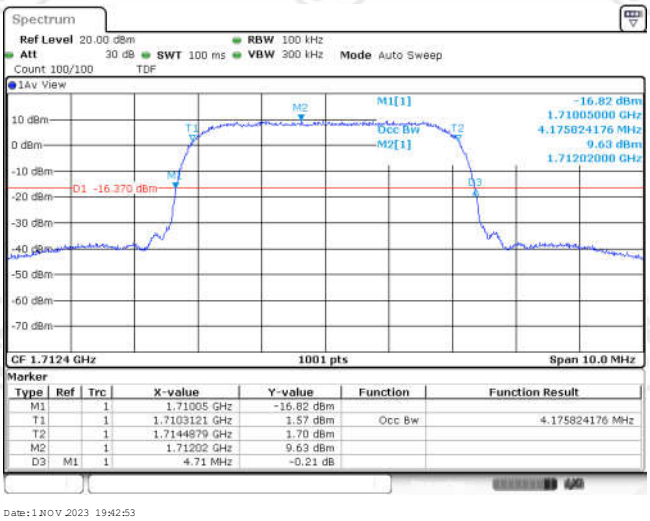
Band2-9400



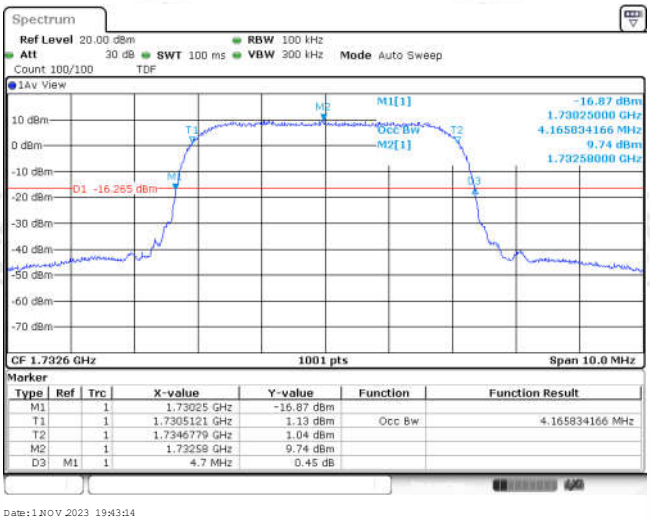
Band2-9538



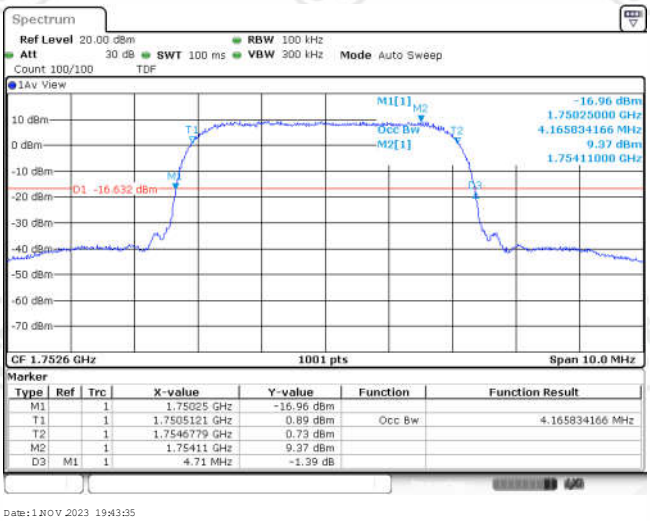
Band4-1312



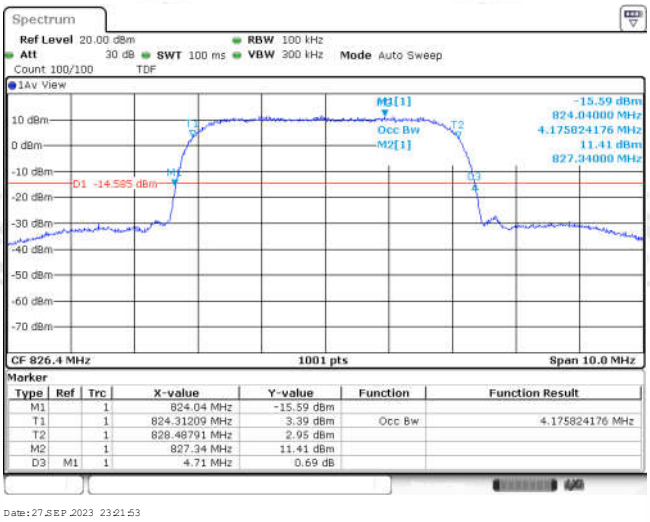
Band4-1413



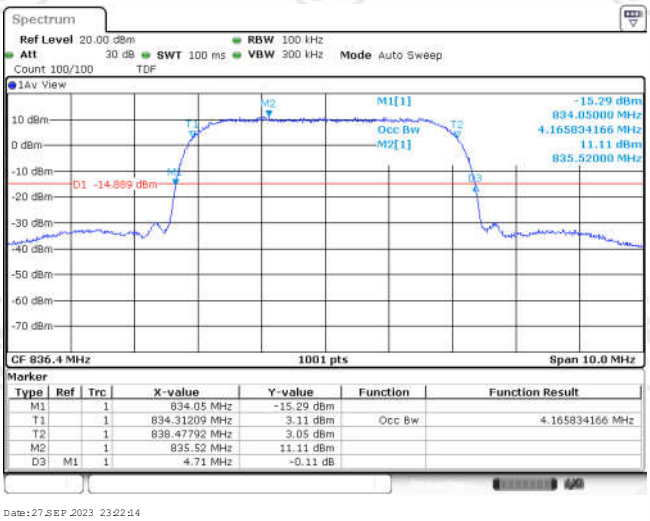
Band4-1513



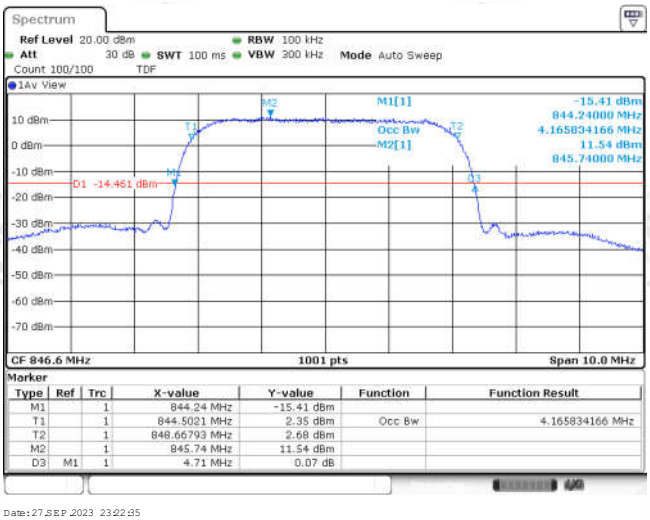
Band5-4132



Band5-4182



Band5-4233

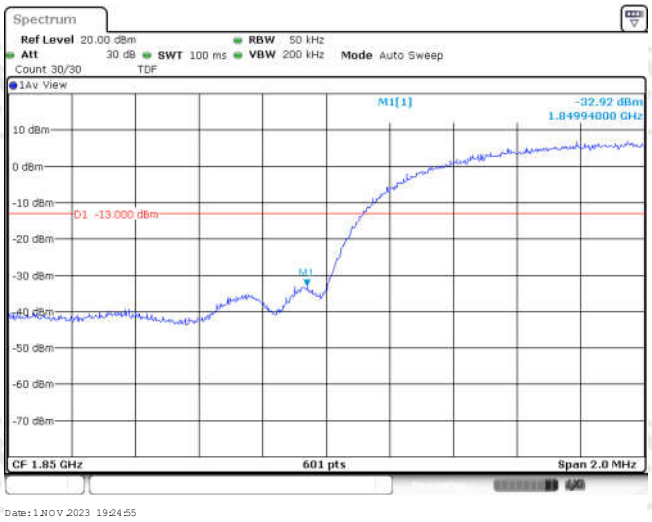
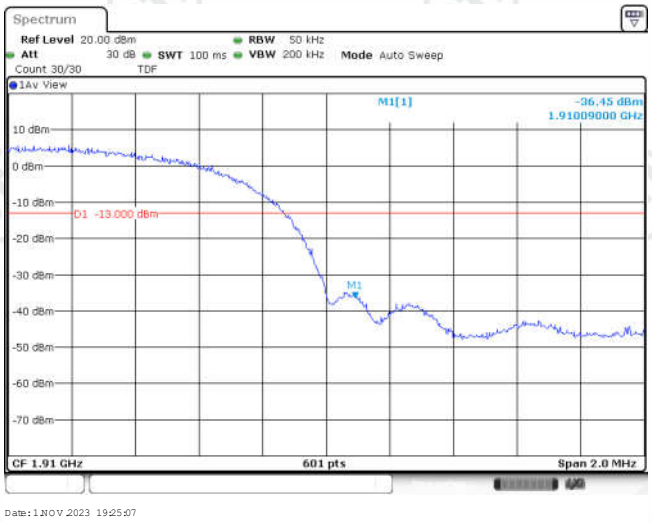

Spectrum
Ref Level 20.00 dBm
RBW 100 kHz
Att 30 dB
SWT 100 ms
VBW 300 kHz
Mode Auto Sweep
Count 100/100
TDF
1Av View
M1[1]
-15.41 dBm
844.24000 MHz
Occ Bw
4.165834166 MHz
M2[1]
11.54 dBm
845.74000 MHz
D1 -14.461 dBm
CF 846.6 MHz
1001 pts
Span 10.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 844.24 MHz -15.41 dBm
T1 1 844.5021 MHz 2.35 dBm Occ Bw 4.165834166 MHz
T2 1 848.66793 MHz 2.68 dBm
M2 1 845.74 MHz 11.54 dBm
D3 M1 1 4.71 MHz 0.07 dB
Date:27.SEP.2023 23:22:35

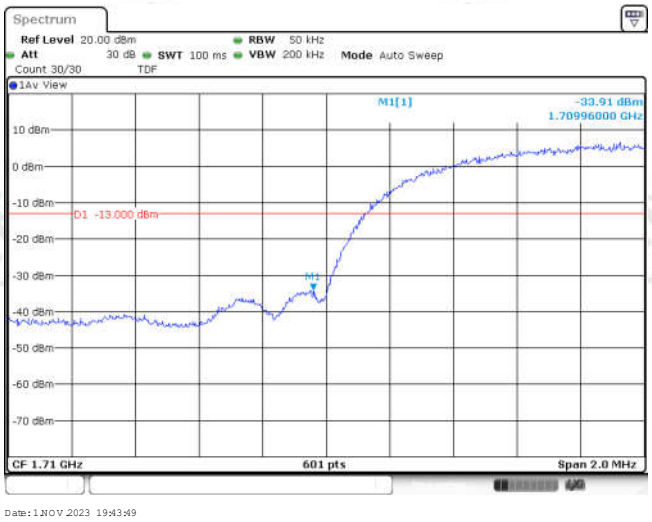
Appendix D: Band Edge

Test Result

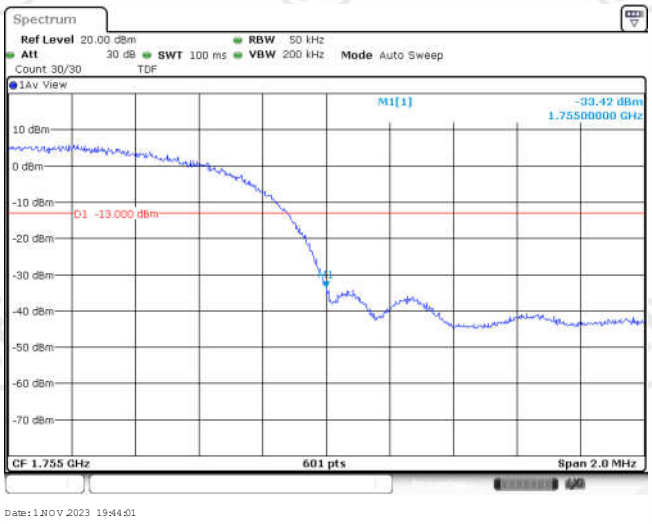
Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band2	9262	1849.94	-32.92	-13	PASS
Band2	9538	1910.09	-34.79	-13	PASS
Band4	1312	1709.96	-33.91	-13	PASS
Band4	1513	1755.00	-33.42	-13	PASS
Band5	4132	824.00	-30.46	-13	PASS
Band5	4233	849.00	-31.69	-13	PASS

Test Graphs

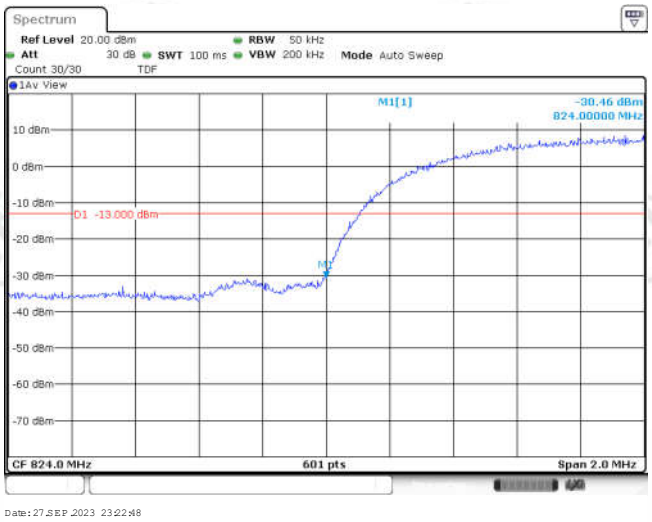
Band2-9262

Band2-9538

Band4-1312



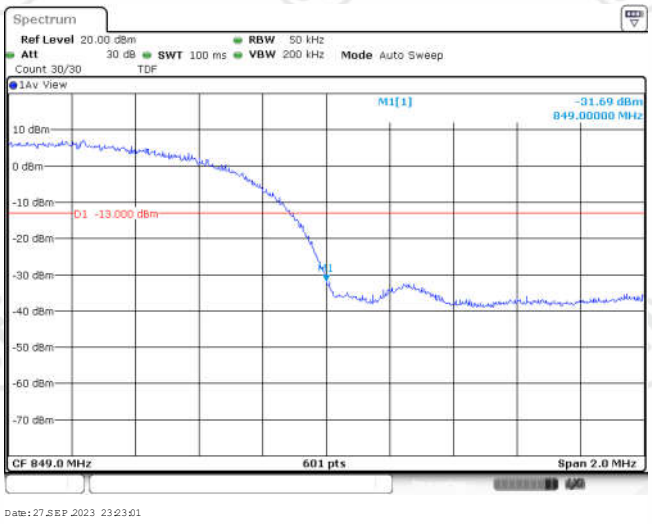
Band4-1513



Band5-4132


Spectrum
Ref Level 20.00 dBm
RBW 50 kHz
Att 30 dB
SWT 100 ms
VBW 200 kHz
Mode Auto Sweep
Count 30/30
TDF
1Av View
M1[1]
-30.46 dBm
824.00000 MHz
10 dBm
0 dBm
-10 dBm
D1 -13.000 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 824.0 MHz
601 pts
Span 2.0 MHz
Date:27.SEP.2023 23:22:48

Band5-4233


Spectrum
Ref Level 20.00 dBm
RBW 50 kHz
Att 30 dB
SWT 100 ms
VBW 200 kHz
Mode Auto Sweep
Count 30/30
TDF
1Av View
M1[1]
-31.69 dBm
849.00000 MHz
10 dBm
0 dBm
-10 dBm
D1 -13.000 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 849.0 MHz
601 pts
Span 2.0 MHz
Date:27.SEP.2023 23:23:01

Appendix E: Conducted Spurious Emission

Test Result

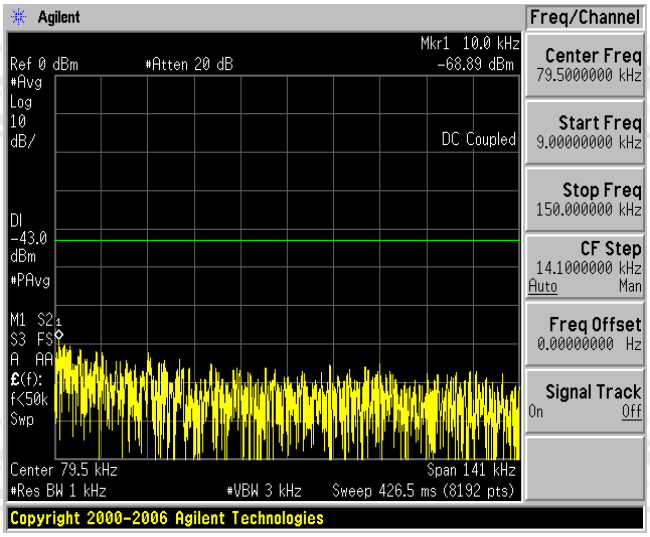
Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band2	9262	0.009~0.15MHz	0.01	-68.89	-43	PASS
Band2	9262	0.15~30MHz	5.11	-48.84	-23	PASS
Band2	9262	30~1000MHz	824.4	-31.4	-13	PASS
Band2	9262	1000~3000MHz	2867	-38.4	-13	PASS
Band2	9262	3000~10000MHz	7875	-49.25	-13	PASS
Band2	9262	10000~20000MHz	19910	-42.18	-13	PASS
Band2	9400	0.009~0.15MHz	0.01	-67.02	-43	PASS
Band2	9400	0.15~30MHz	1.02	-48.9	-23	PASS
Band2	9400	30~1000MHz	284.7	-31.82	-13	PASS
Band2	9400	1000~3000MHz	1000	-243.66	-13	PASS
Band2	9400	3000~10000MHz	7892	-49.21	-13	PASS
Band2	9400	10000~20000MHz	19860	-42.17	-13	PASS
Band2	9538	0.009~0.15MHz	0.01	-68.58	-43	PASS
Band2	9538	0.15~30MHz	4.02	-49.29	-23	PASS
Band2	9538	30~1000MHz	385.5	-31.99	-13	PASS
Band2	9538	1000~3000MHz	2860	-38.16	-13	PASS
Band2	9538	3000~10000MHz	7867	-49.24	-13	PASS

Band2	9538	10000~20000MHz	19890	-41.98	-13	PASS
Band4	1312	0.009~0.15MHz	0.01	-68.75	-43	PASS
Band4	1312	0.15~30MHz	1.69	-48.66	-23	PASS
Band4	1312	30~1000MHz	499.9	-31.57	-13	PASS
Band4	1312	1000~3000MHz	2856	-38.37	-13	PASS
Band4	1312	3000~10000MHz	3423	-45.2	-13	PASS
Band4	1312	10000~20000MHz	19890	-42.16	-13	PASS
Band4	1413	0.009~0.15MHz	0.01	-66.97	-43	PASS
Band4	1413	0.15~30MHz	1.64	-48.33	-23	PASS
Band4	1413	30~1000MHz	553.1	-32.32	-13	PASS
Band4	1413	1000~3000MHz	2861	-38.39	-13	PASS
Band4	1413	3000~10000MHz	3463	-48.05	-13	PASS
Band4	1413	10000~20000MHz	19870	-42	-13	PASS
Band4	1513	0.009~0.15MHz	0.01	-67.55	-43	PASS
Band4	1513	0.15~30MHz	0.39	-46.7	-23	PASS
Band4	1513	30~1000MHz	972.4	-31.76	-13	PASS
Band4	1513	1000~3000MHz	2865	-38.36	-13	PASS
Band4	1513	3000~10000MHz	3503	-46.06	-13	PASS
Band4	1513	10000~20000MHz	19870	-41.97	-13	PASS
Band5	4132	0.009~0.15MHz	0.02	-69.64	-33	PASS
Band5	4132	0.15~30MHz	0.18	-45.39	-13	PASS
Band5	4132	30~1000MHz	439.6	-32.04	-13	PASS

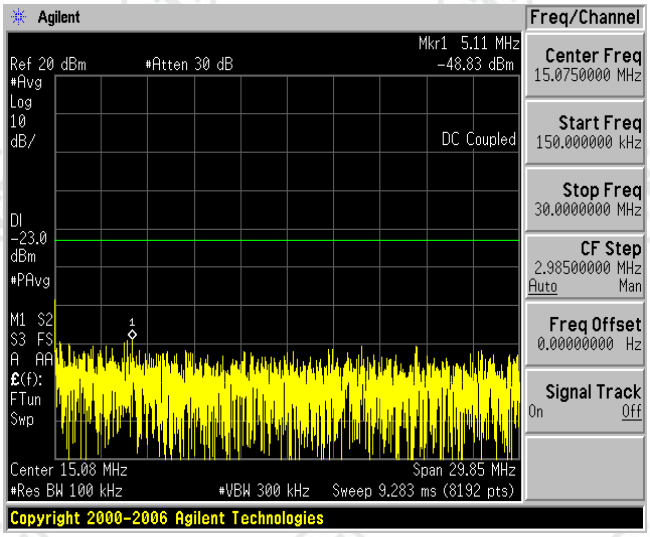
Band5	4132	1000~3000MHz	2850	-38.22	-13	PASS
Band5	4132	3000~10000MHz	7899	-49.29	-13	PASS
Band5	4132	10000~18000MHz	17718	-43.7	-13	PASS
Band5	4182	0.009~0.15MHz	0.01	-68.79	-33	PASS
Band5	4182	0.15~30MHz	0.37	-47.74	-13	PASS
Band5	4182	30~1000MHz	542.3	-31.53	-13	PASS
Band5	4182	1000~3000MHz	2852	-38.24	-13	PASS
Band5	4182	3000~10000MHz	7896	-49.1	-13	PASS
Band5	4182	10000~18000MHz	17796	-43.67	-13	PASS
Band5	4233	0.009~0.15MHz	0.01	-70.62	-33	PASS
Band5	4233	0.15~30MHz	0.49	-47.94	-13	PASS
Band5	4233	30~1000MHz	355.9	-31.8	-13	PASS
Band5	4233	1000~3000MHz	2847	-38.22	-13	PASS
Band5	4233	3000~10000MHz	7901	-49.17	-13	PASS
Band5	4233	10000~18000MHz	17799	-43.53	-13	PASS

Test Graphs

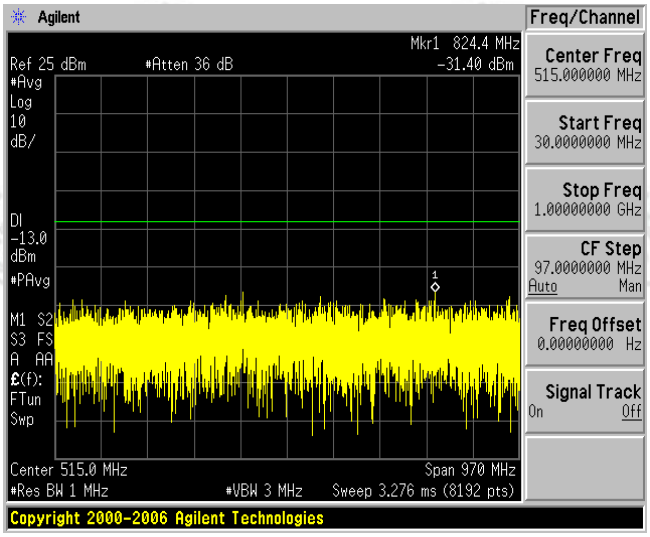
Band2-9262-0.009~0.15MHz



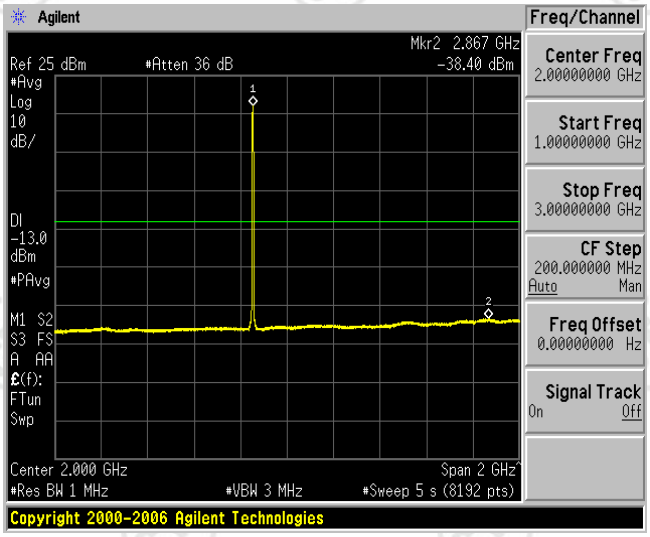
Band2-9262-0.15~30MHz



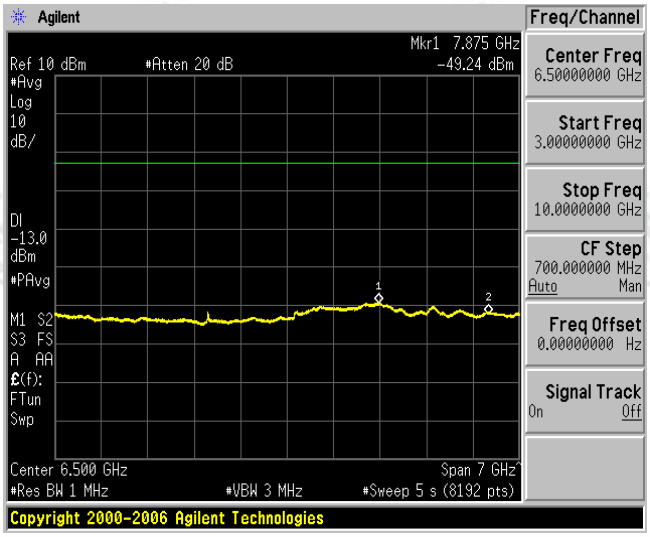
Band2-9262-30~1000MHz



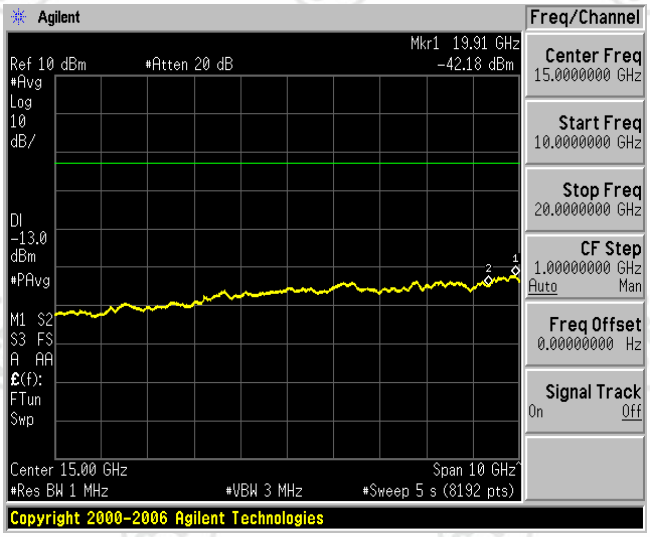
Band2-9262-1000~3000MHz



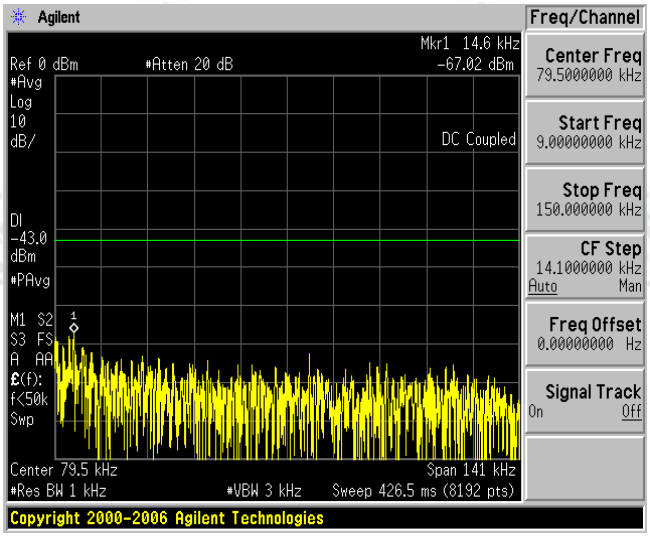
Band2-9262-3000~10000MHz



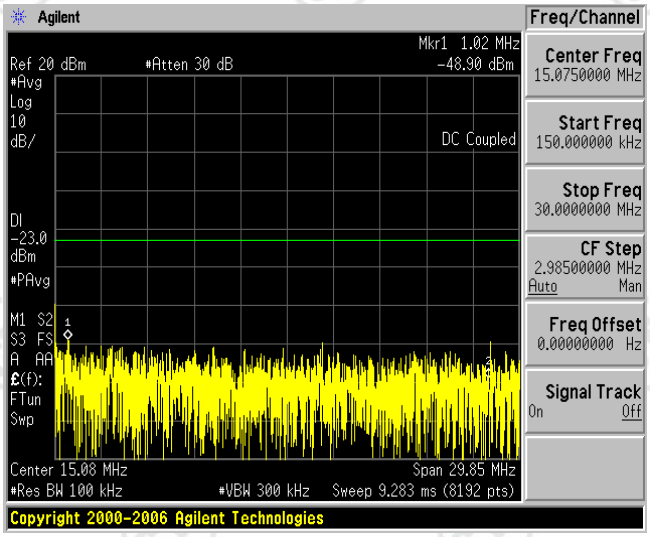
Band2-9262-10000~20000MHz



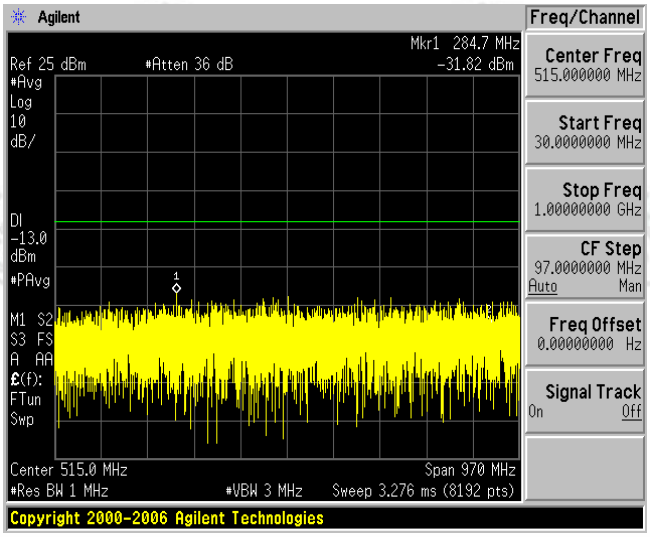
Band2-9400-0.009~0.15MHz



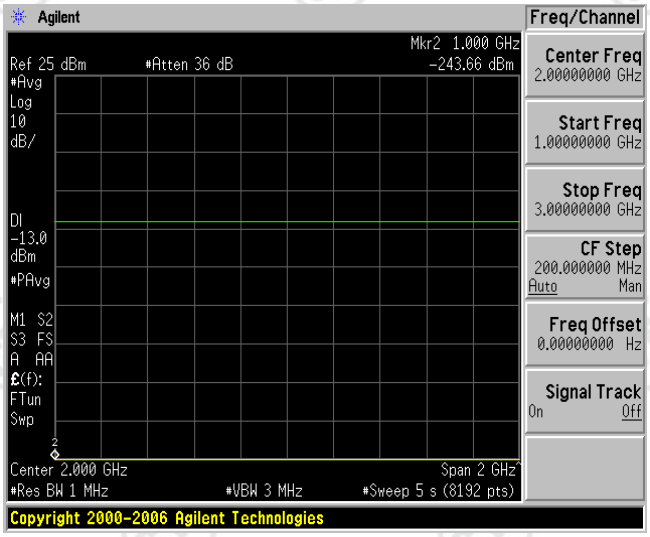
Band2-9400-0.15~30MHz



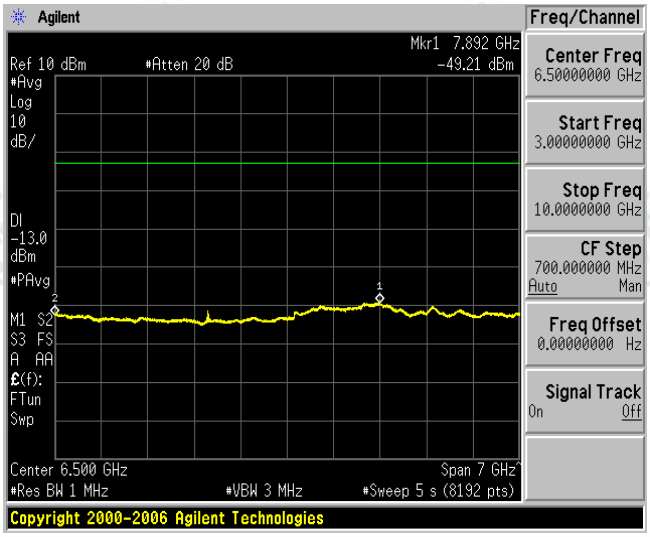
Band2-9400-30~1000MHz



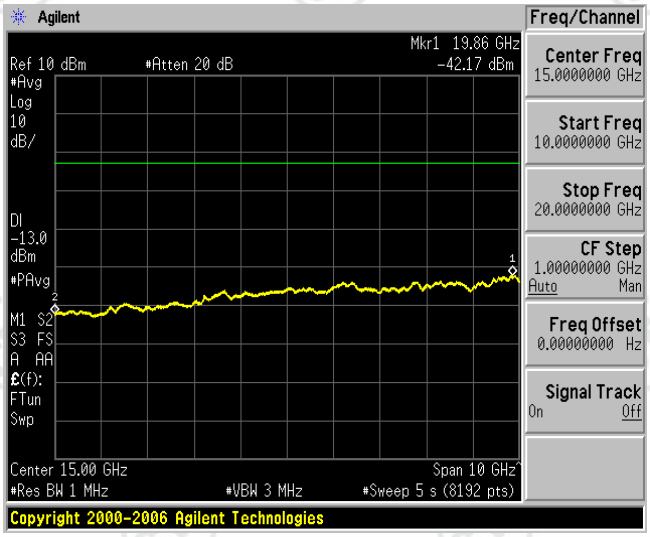
Band2-9400-1000~3000MHz



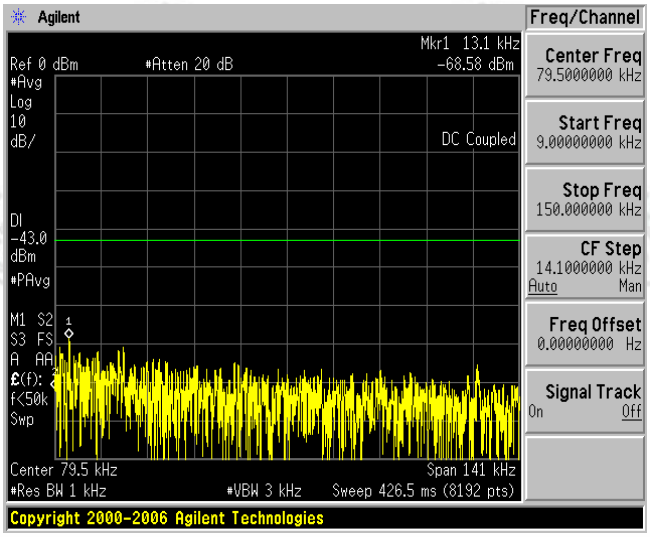
Band2-9400-3000~10000MHz



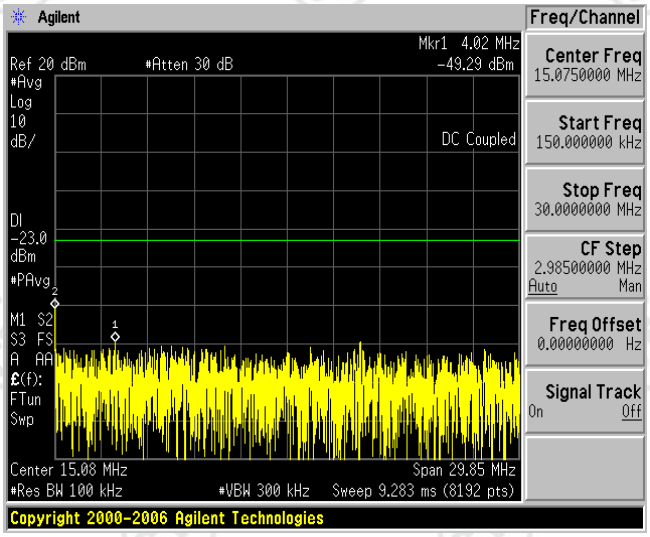
Band2-9400-10000~20000MHz



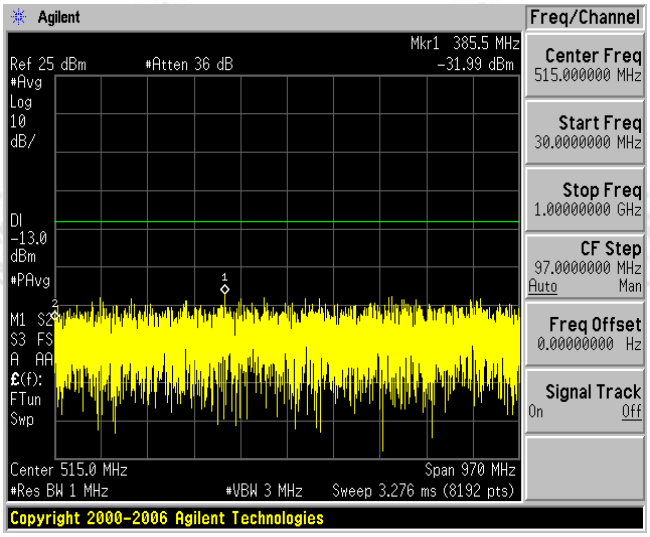
Band2-9538-0.009~0.15MHz



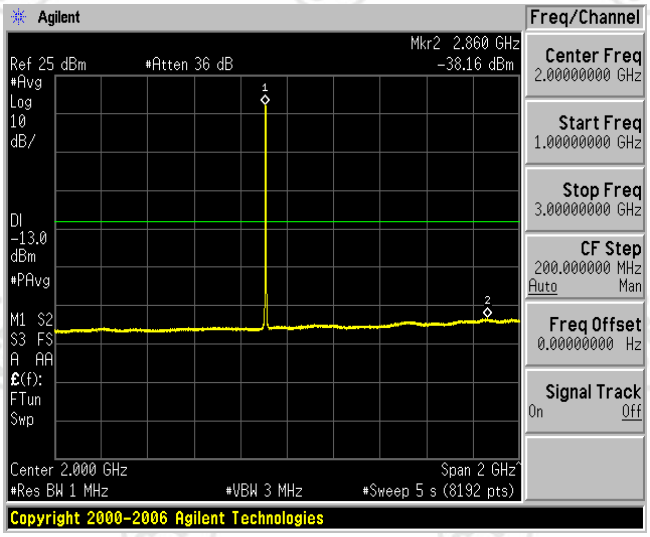
Band2-9538-0.15~30MHz



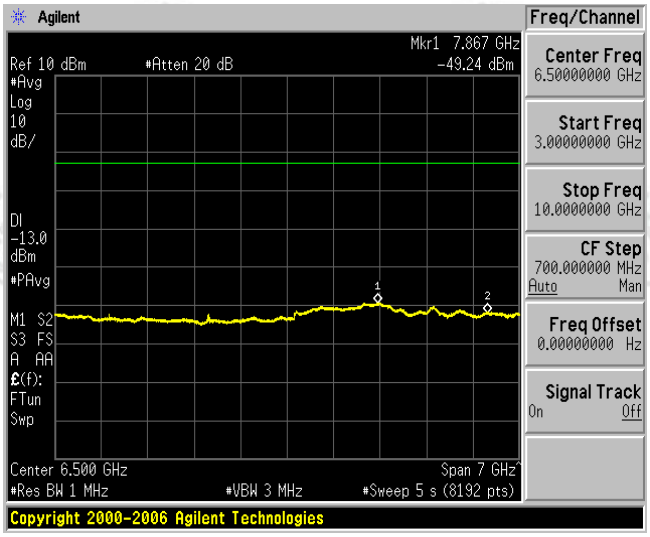
Band2-9538-30~1000MHz



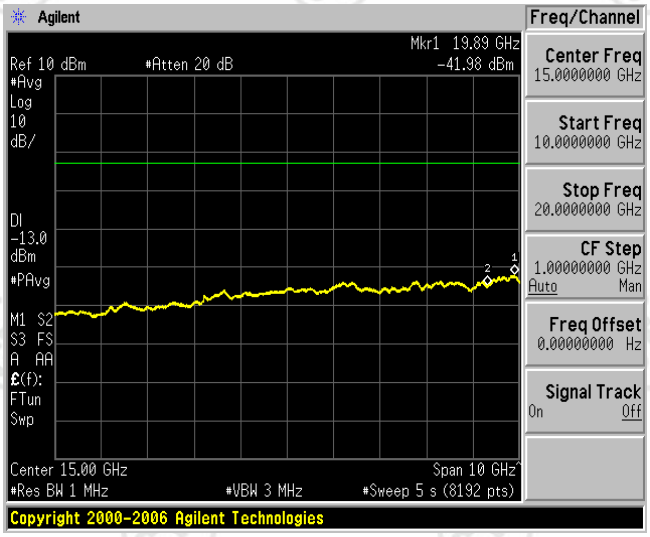
Band2-9538-1000~3000MHz



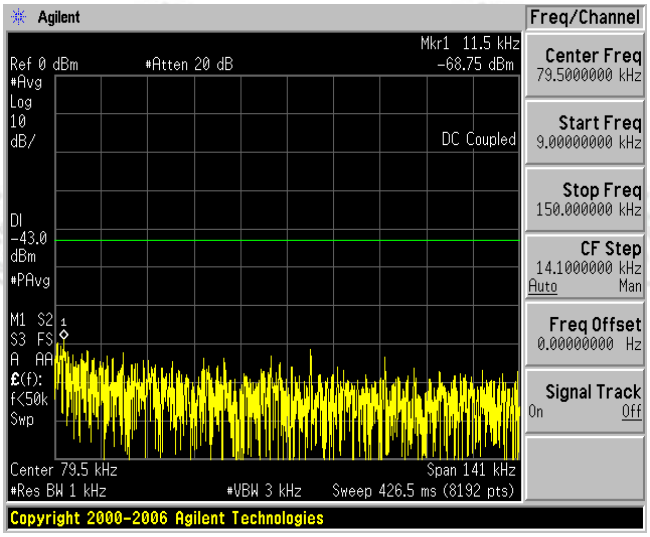
Band2-9538-3000~10000MHz



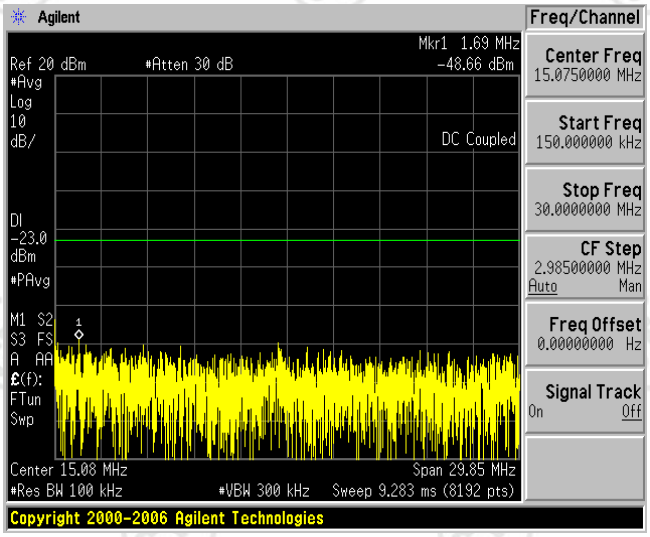
Band2-9538-10000~20000MHz



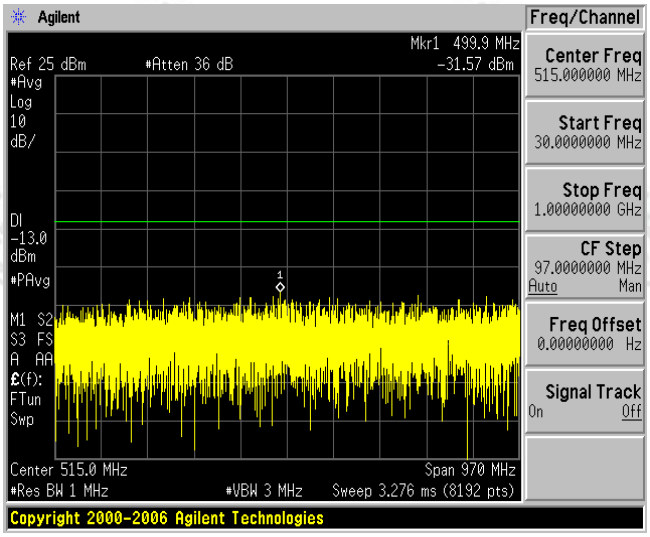
Band4-1312-0.009~0.15MHz



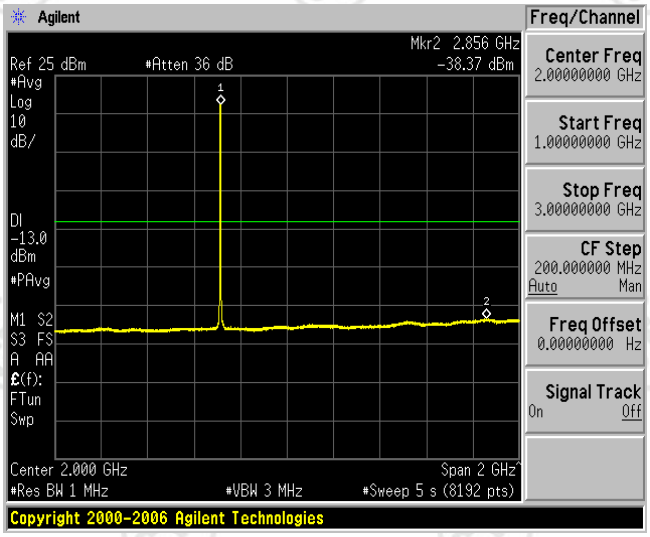
Band4-1312-0.15~30MHz



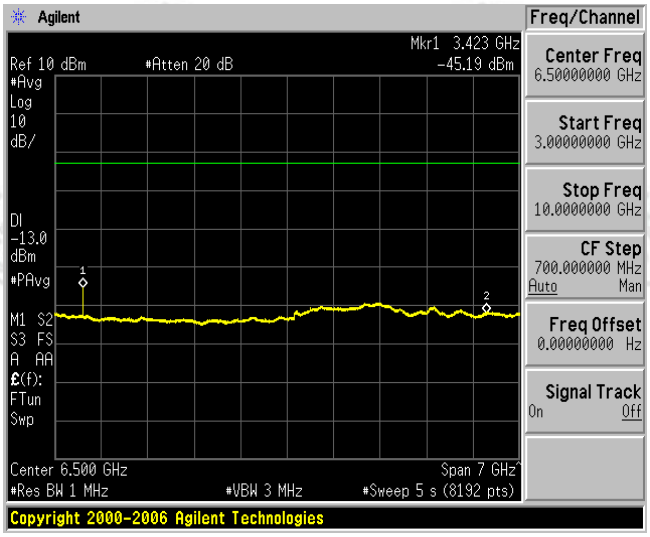
Band4-1312-30~1000MHz



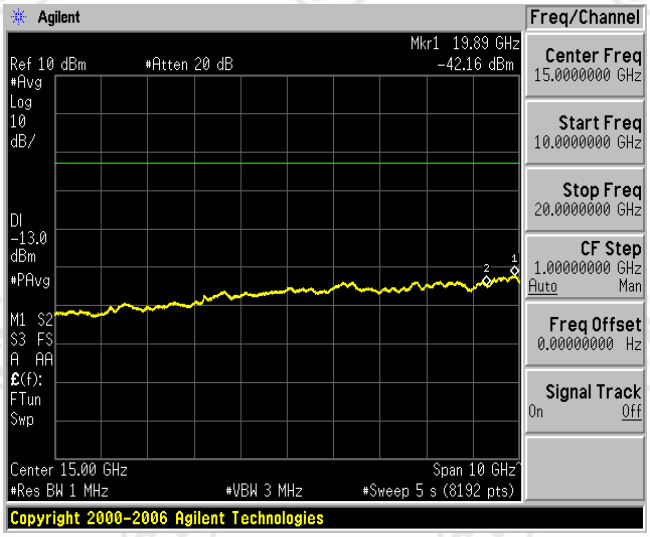
Band4-1312-1000~3000MHz



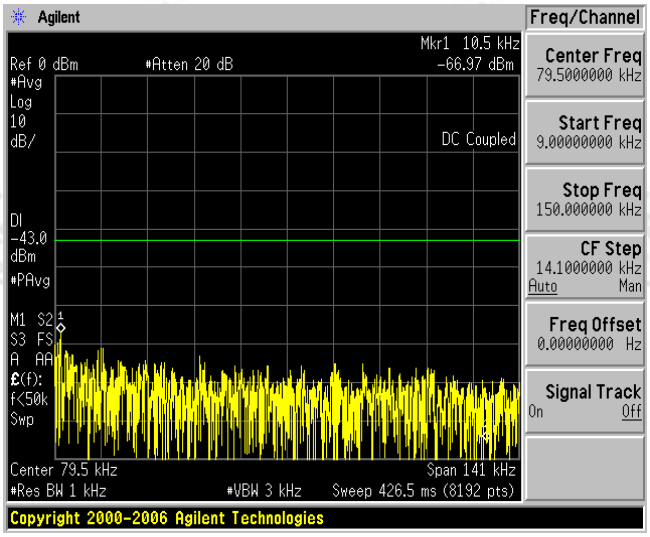
Band4-1312-3000~10000MHz



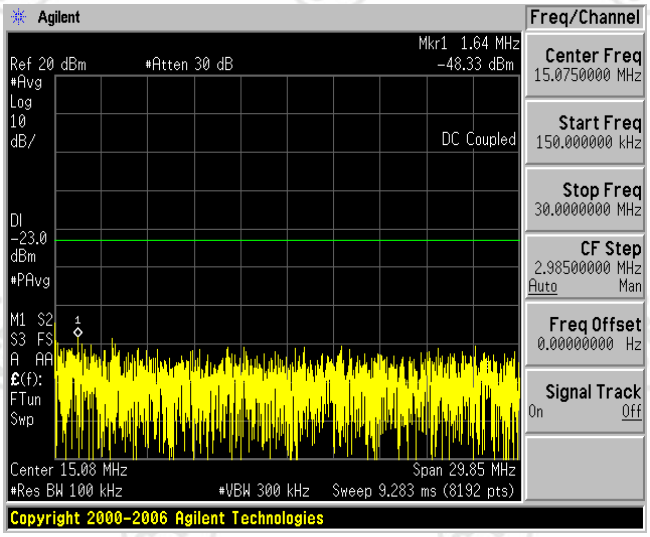
Band4-1312-10000~20000MHz



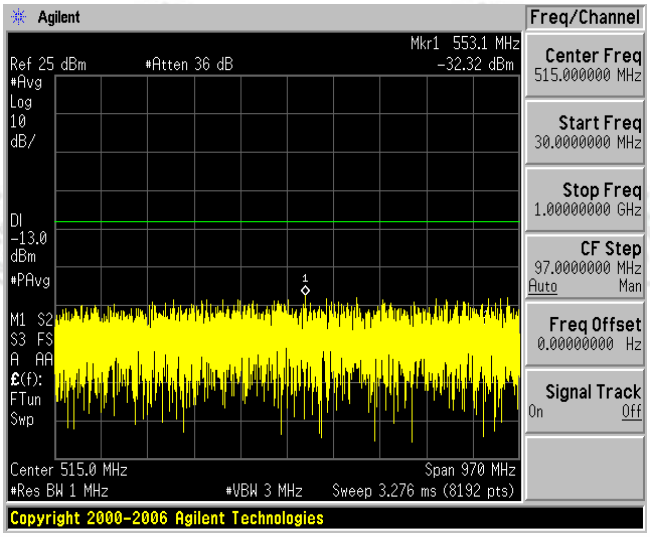
Band4-1413-0.009~0.15MHz



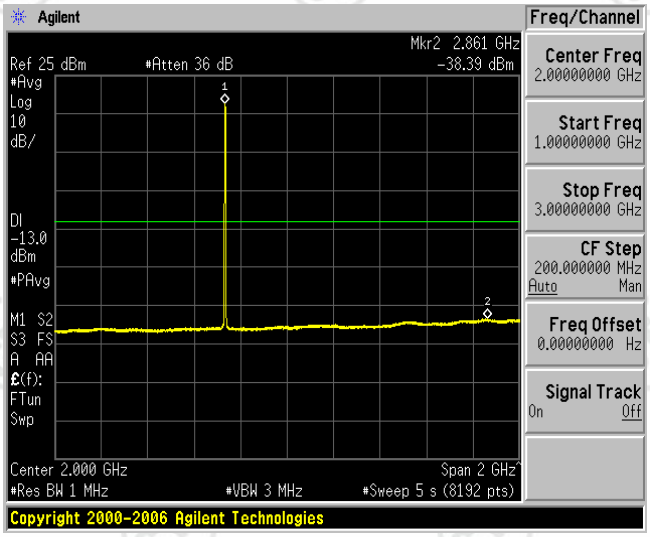
Band4-1413-0.15~30MHz



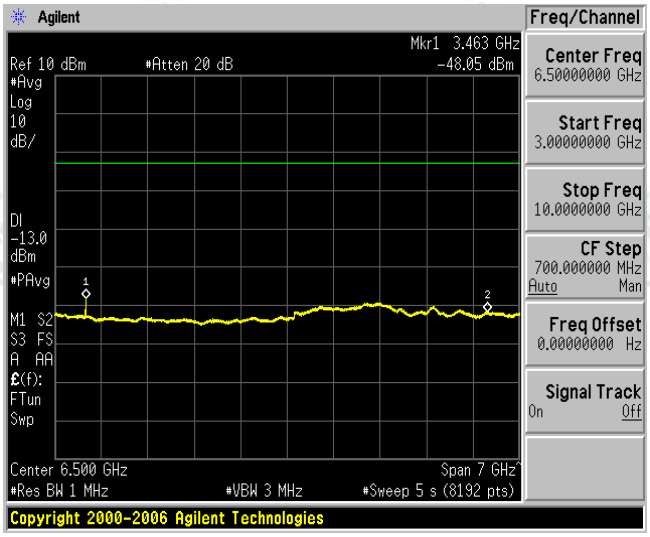
Band4-1413-30~1000MHz



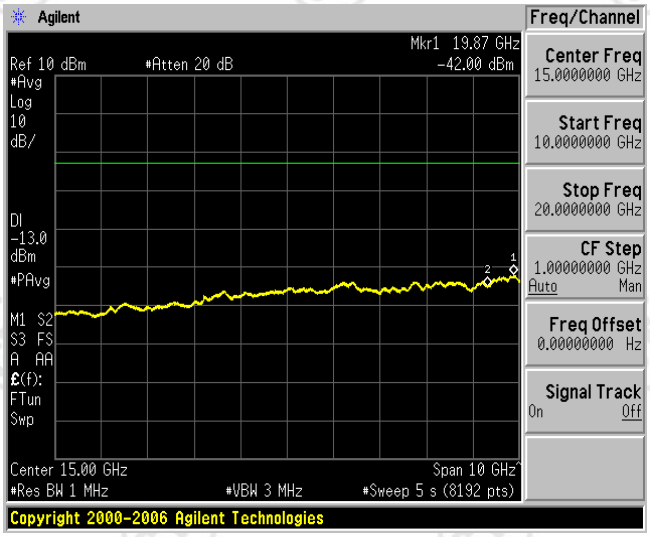
Band4-1413-1000~3000MHz



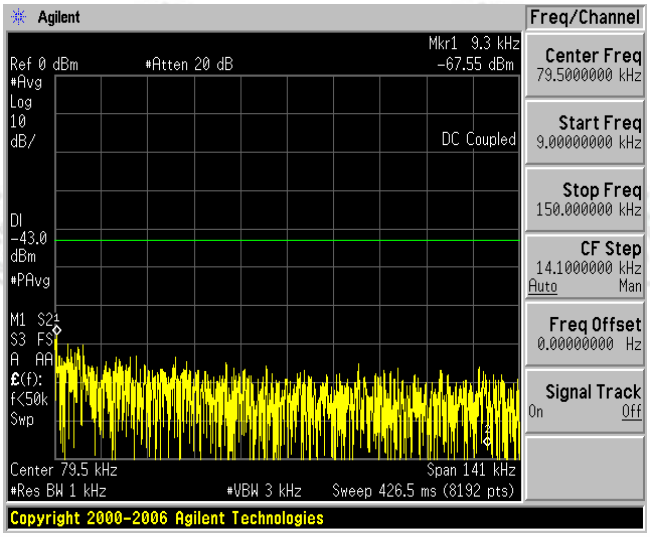
Band4-1413-3000~10000MHz



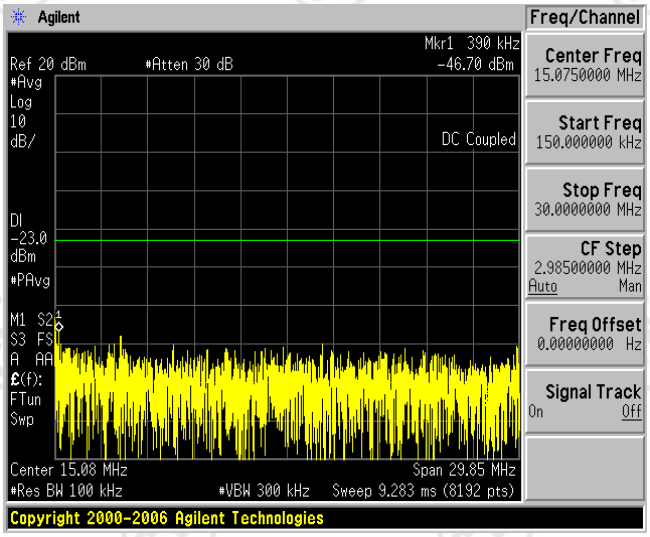
Band4-1413-10000~20000MHz



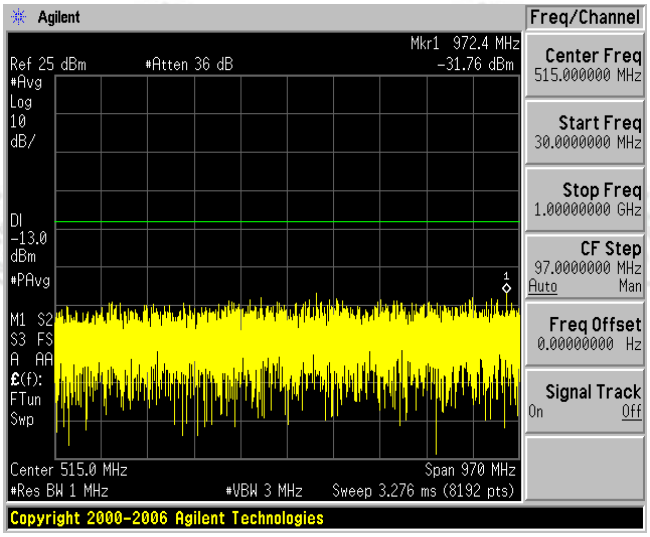
Band4-1513-0.009~0.15MHz



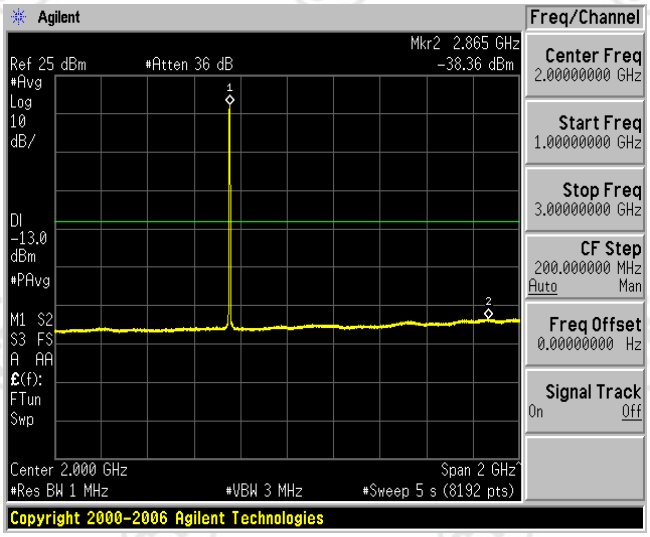
Band4-1513-0.15~30MHz



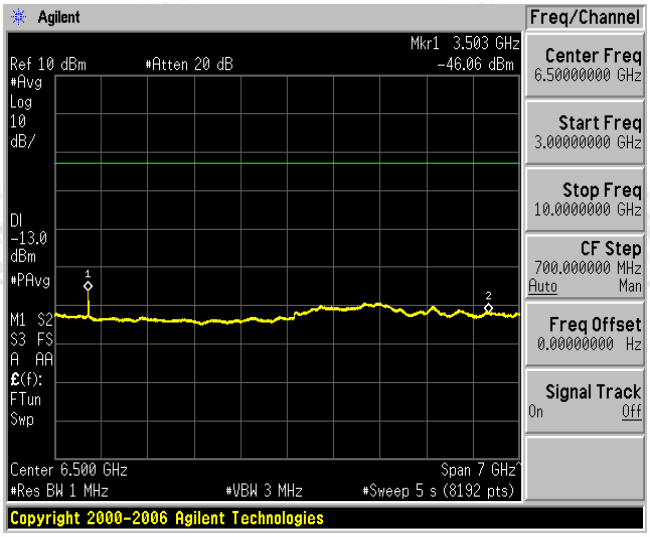
Band4-1513-30~1000MHz



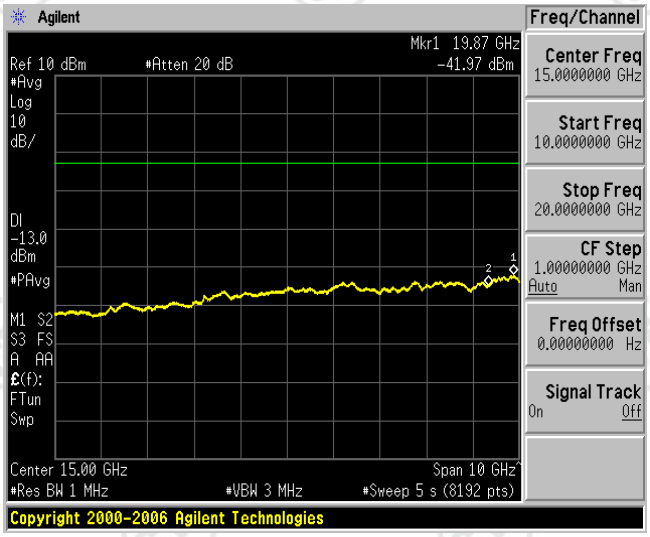
Band4-1513-1000~3000MHz



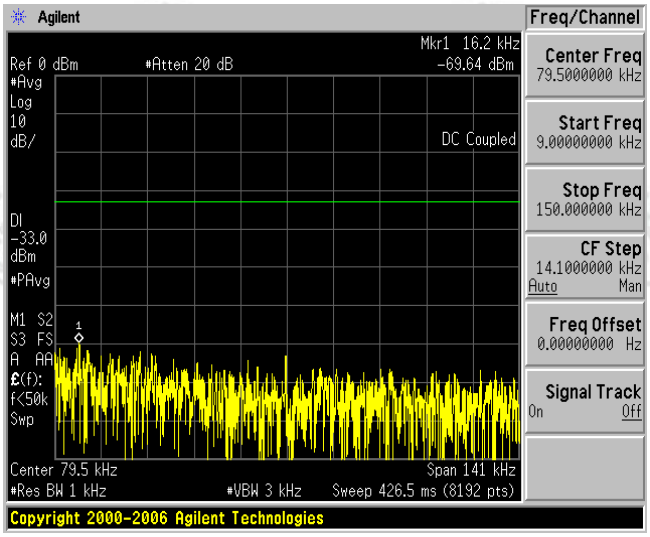
Band4-1513-3000~10000MHz



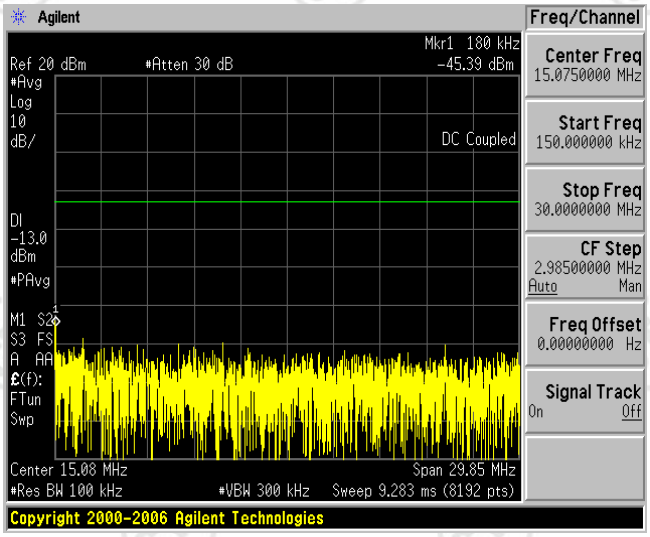
Band4-1513-10000~20000MHz



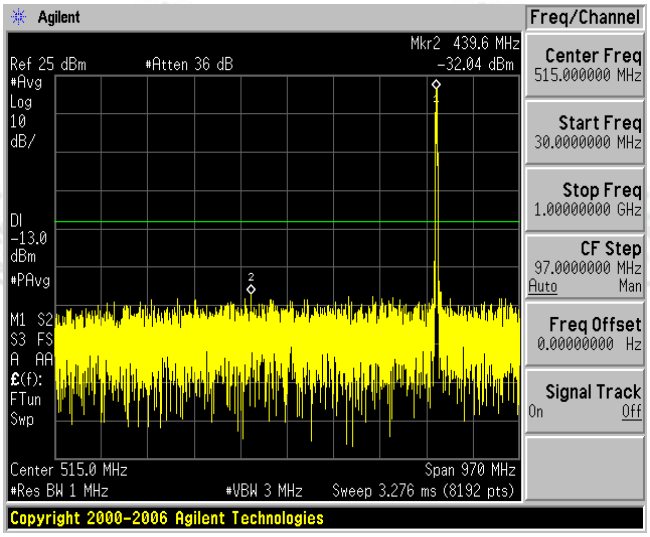
Band5-4132-0.009~0.15MHz



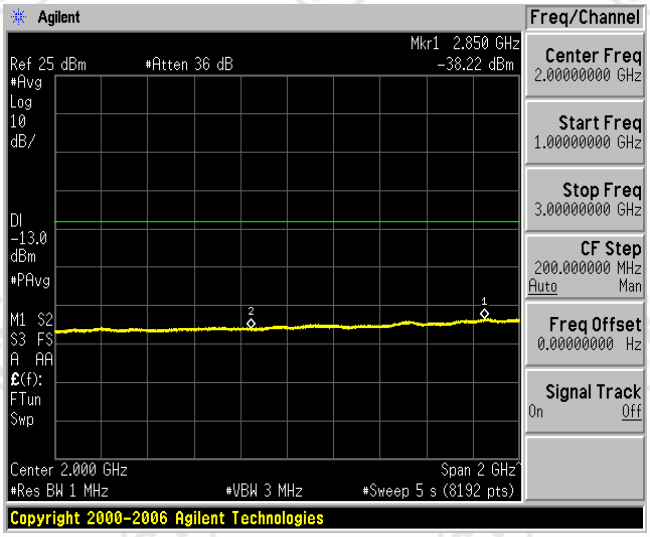
Band5-4132-0.15~30MHz



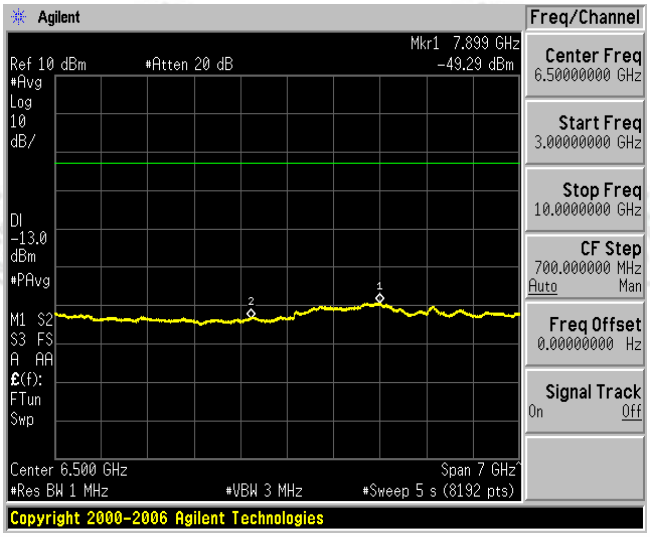
Band5-4132-30~1000MHz



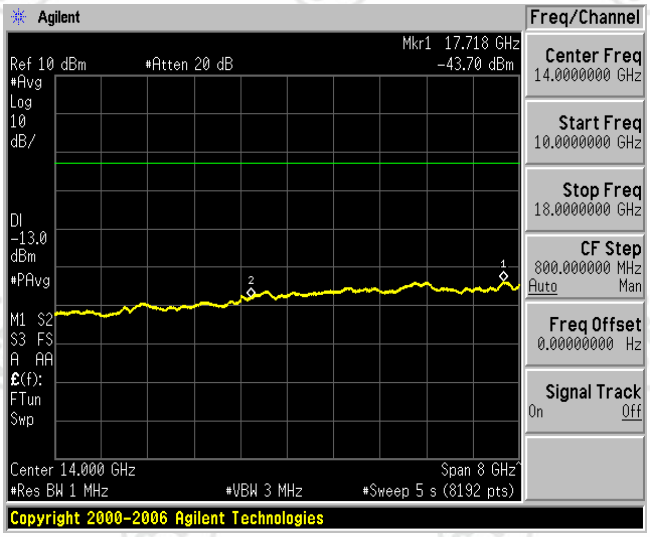
Band5-4132-1000~3000MHz



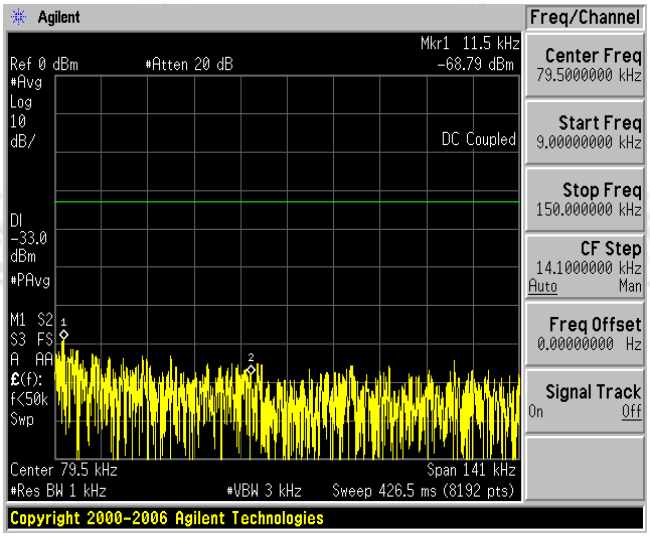
Band5-4132-3000~10000MHz



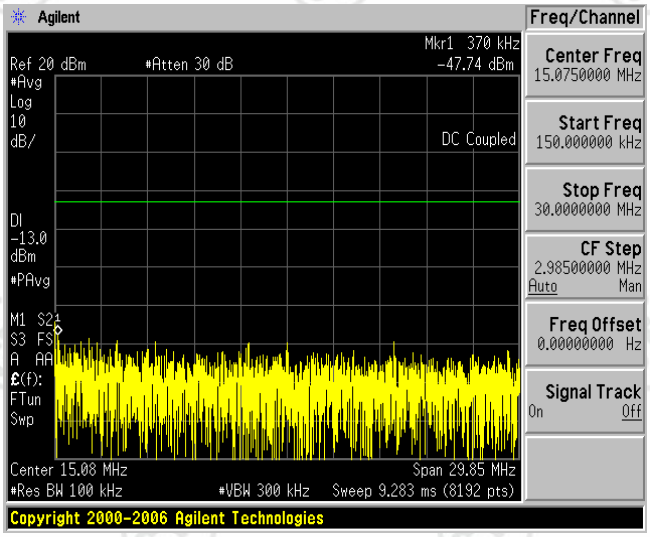
Band5-4132-10000~18000MHz



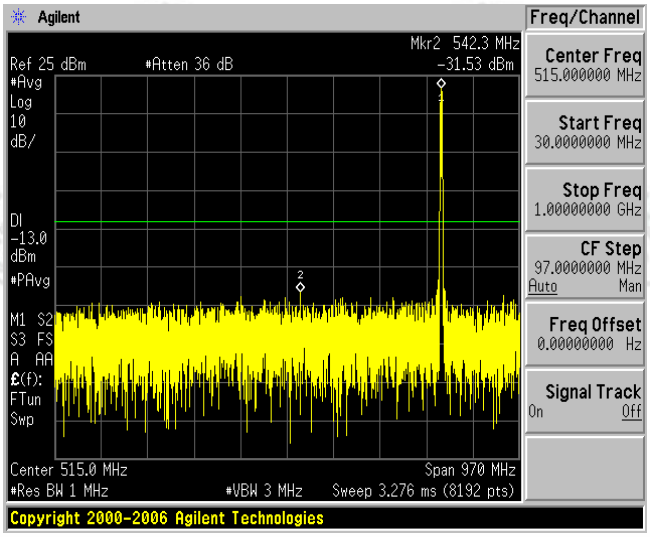
Band5-4182-0.009~0.15MHz



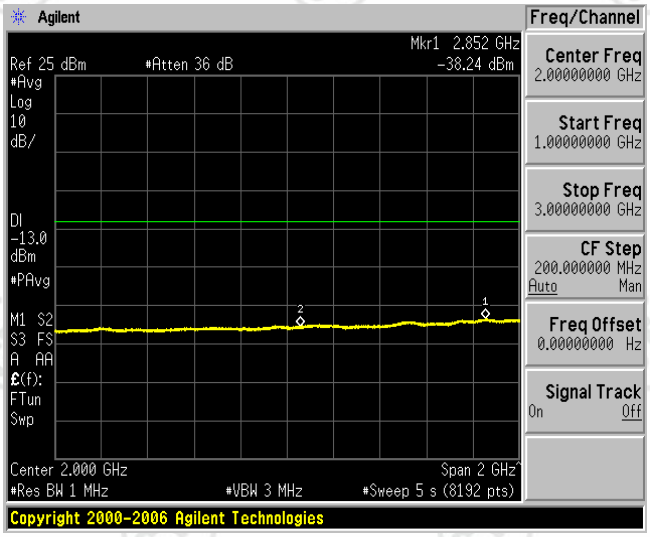
Band5-4182-0.15~30MHz



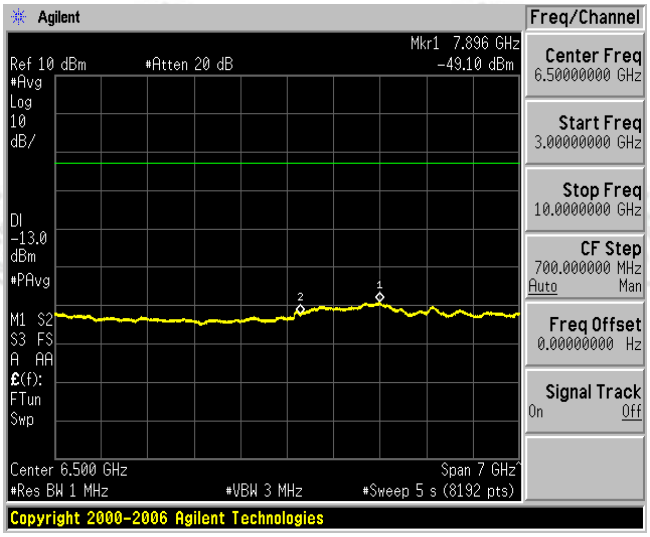
Band5-4182-30~1000MHz



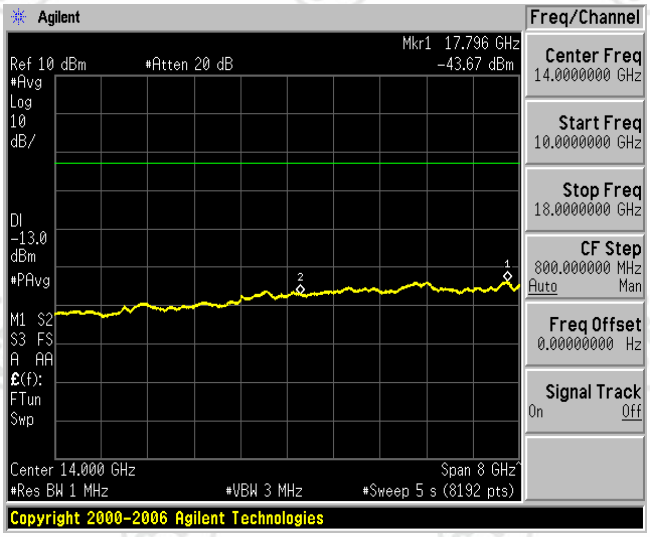
Band5-4182-1000~3000MHz



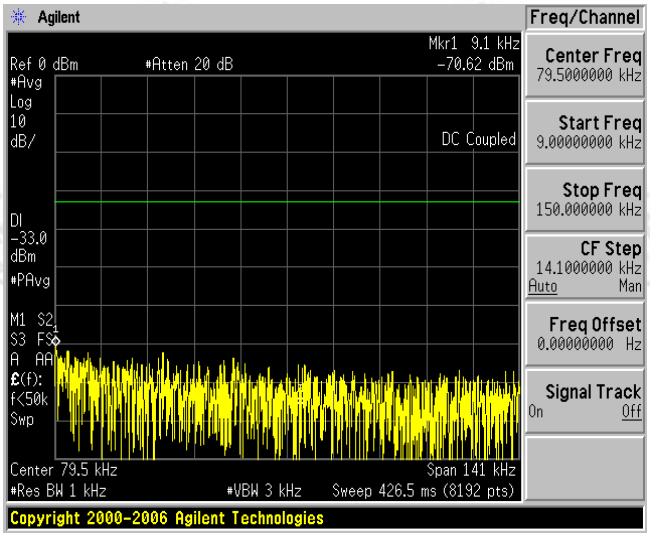
Band5-4182-3000~10000MHz



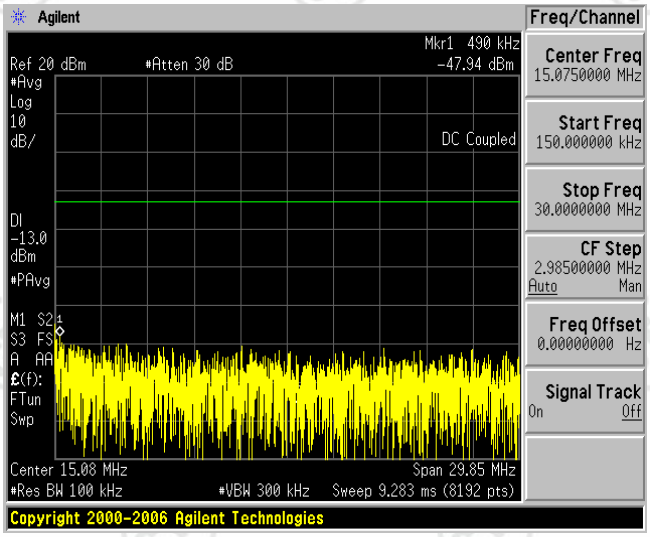
Band5-4182-10000~18000MHz



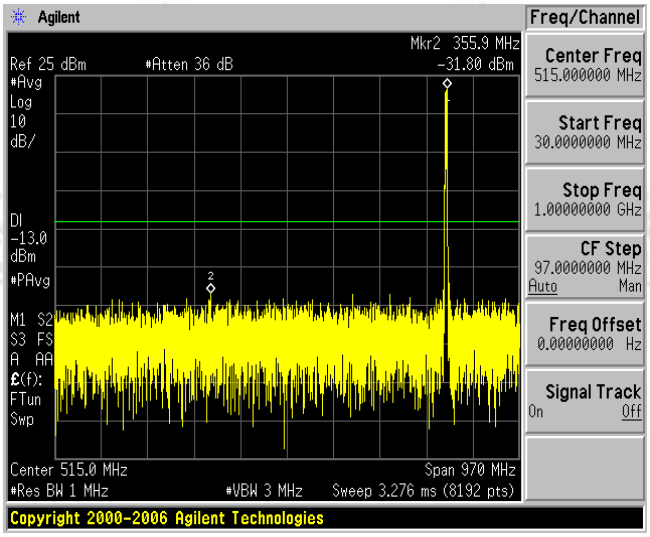
Band5-4233-0.009~0.15MHz



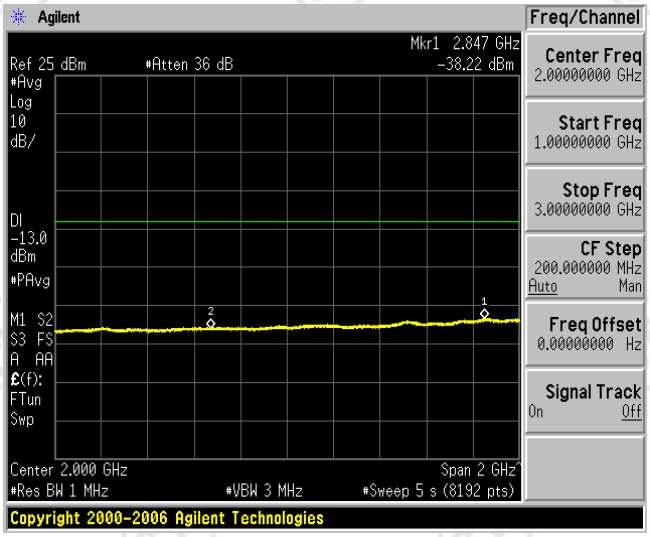
Band5-4233-0.15~30MHz



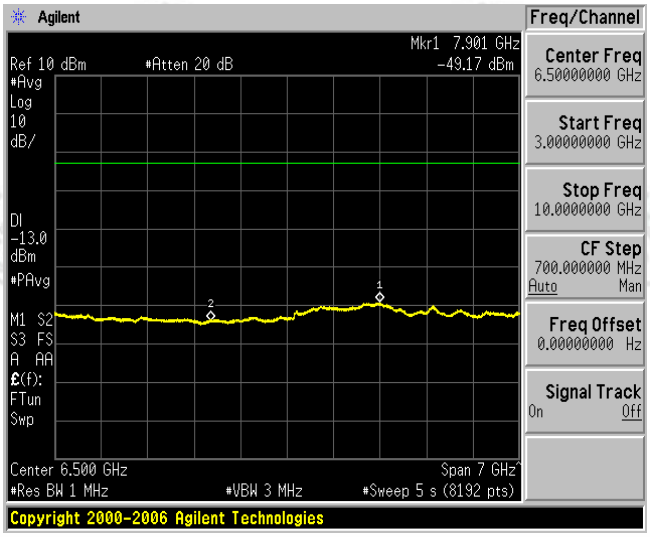
Band5-4233-30~1000MHz



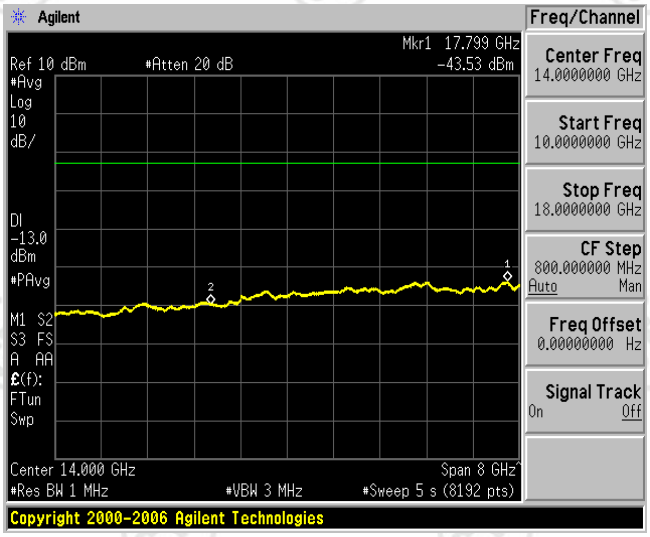
Band5-4233-1000~3000MHz



Band5-4233-3000~10000MHz



Band5-4233-10000~18000MHz



Appendix F: Frequency Stability

Test Result

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	9262	VL	NT	1.22	0.000659	±2.5	PASS
Band2	9262	VN	NT	0.72	0.000389	±2.5	PASS
Band2	9262	VH	NT	-0.56	-0.000302	±2.5	PASS
Band2	9400	VL	NT	1.90	0.001011	±2.5	PASS
Band2	9400	VN	NT	-4.69	-0.002495	±2.5	PASS
Band2	9400	VH	NT	0.45	0.000239	±2.5	PASS
Band2	9538	VL	NT	-0.27	-0.000142	±2.5	PASS
Band2	9538	VN	NT	-1.56	-0.000818	±2.5	PASS
Band2	9538	VH	NT	-0.48	-0.000252	±2.5	PASS
Band4	1312	VL	NT	0.95	0.000555	±2.5	PASS
Band4	1312	VN	NT	-0.50	-0.000292	±2.5	PASS
Band4	1312	VH	NT	0.62	0.000362	±2.5	PASS
Band4	1413	VL	NT	-0.33	-0.000190	±2.5	PASS
Band4	1413	VN	NT	2.08	0.001201	±2.5	PASS
Band4	1413	VH	NT	-3.91	-0.002257	±2.5	PASS
Band4	1513	VL	NT	-2.93	-0.001672	±2.5	PASS
Band4	1513	VN	NT	0.21	0.000120	±2.5	PASS

Band4	1513	VH	NT	-5.96	-0.003401	±2.5	PASS
Band5	4132	VL	NT	-0.82	-0.000992	±2.5	PASS
Band5	4132	VN	NT	-1.56	-0.001888	±2.5	PASS
Band5	4132	VH	NT	-0.74	-0.000895	±2.5	PASS
Band5	4182	VL	NT	-0.94	-0.001124	±2.5	PASS
Band5	4182	VN	NT	-1.19	-0.001423	±2.5	PASS
Band5	4182	VH	NT	-0.22	-0.000263	±2.5	PASS
Band5	4233	VL	NT	0.72	0.000850	±2.5	PASS
Band5	4233	VN	NT	-0.50	-0.000591	±2.5	PASS
Band5	4233	VH	NT	-2.06	-0.002433	±2.5	PASS

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	9262	NV	-30	-0.21	-0.000113	±2.5	PASS
Band2	9262	NV	-20	-0.77	-0.000416	±2.5	PASS
Band2	9262	NV	0	4.28	0.002311	±2.5	PASS
Band2	9262	NV	10	-6.47	-0.003493	±2.5	PASS
Band2	9262	NV	20	-10.41	-0.005620	±2.5	PASS
Band2	9400	NV	-30	3.50	0.001862	±2.5	PASS
Band2	9400	NV	-20	-2.60	-0.001383	±2.5	PASS
Band2	9400	NV	0	-4.37	-0.002324	±2.5	PASS
Band2	9400	NV	10	-4.78	-0.002543	±2.5	PASS

Band2	9400	NV	20	-3.00	-0.001596	±2.5	PASS
Band2	9538	NV	-30	-1.70	-0.000891	±2.5	PASS
Band2	9538	NV	-20	-1.14	-0.000598	±2.5	PASS
Band2	9538	NV	0	-7.36	-0.003858	±2.5	PASS
Band2	9538	NV	10	8.33	0.004367	±2.5	PASS
Band2	9538	NV	20	6.91	0.003622	±2.5	PASS
Band4	1312	NV	-30	-7.20	-0.004205	±2.5	PASS
Band4	1312	NV	-20	-4.91	-0.002867	±2.5	PASS
Band4	1312	NV	0	3.25	0.001898	±2.5	PASS
Band4	1312	NV	10	-1.71	-0.000999	±2.5	PASS
Band4	1312	NV	20	1.29	0.000753	±2.5	PASS
Band4	1413	NV	-30	0.07	0.000040	±2.5	PASS
Band4	1413	NV	-20	4.02	0.002320	±2.5	PASS
Band4	1413	NV	0	-7.72	-0.004456	±2.5	PASS
Band4	1413	NV	10	6.47	0.003734	±2.5	PASS
Band4	1413	NV	20	2.10	0.001212	±2.5	PASS
Band4	1513	NV	-30	0.11	0.000063	±2.5	PASS
Band4	1513	NV	-20	-2.19	-0.001250	±2.5	PASS
Band4	1513	NV	0	-1.58	-0.000902	±2.5	PASS
Band4	1513	NV	10	-5.53	-0.003155	±2.5	PASS
Band4	1513	NV	20	5.57	0.003178	±2.5	PASS
Band5	4132	NV	-30	-0.12	-0.000145	±2.5	PASS

Band5	4132	NV	-20	0.13	0.000157	±2.5	PASS
Band5	4132	NV	0	0.42	0.000508	±2.5	PASS
Band5	4132	NV	10	-0.77	-0.000932	±2.5	PASS
Band5	4132	NV	20	0.08	0.000097	±2.5	PASS
Band5	4182	NV	-30	0.11	0.000132	±2.5	PASS
Band5	4182	NV	-20	-0.55	-0.000658	±2.5	PASS
Band5	4182	NV	0	-2.24	-0.002678	±2.5	PASS
Band5	4182	NV	10	0.15	0.000179	±2.5	PASS
Band5	4182	NV	20	-0.84	-0.001004	±2.5	PASS
Band5	4233	NV	-30	-1.37	-0.001618	±2.5	PASS
Band5	4233	NV	-20	0.13	0.000154	±2.5	PASS
Band5	4233	NV	0	0.36	0.000425	±2.5	PASS
Band5	4233	NV	10	0.28	0.000331	±2.5	PASS
Band5	4233	NV	20	1.32	0.001559	±2.5	PASS

END OF REPORT