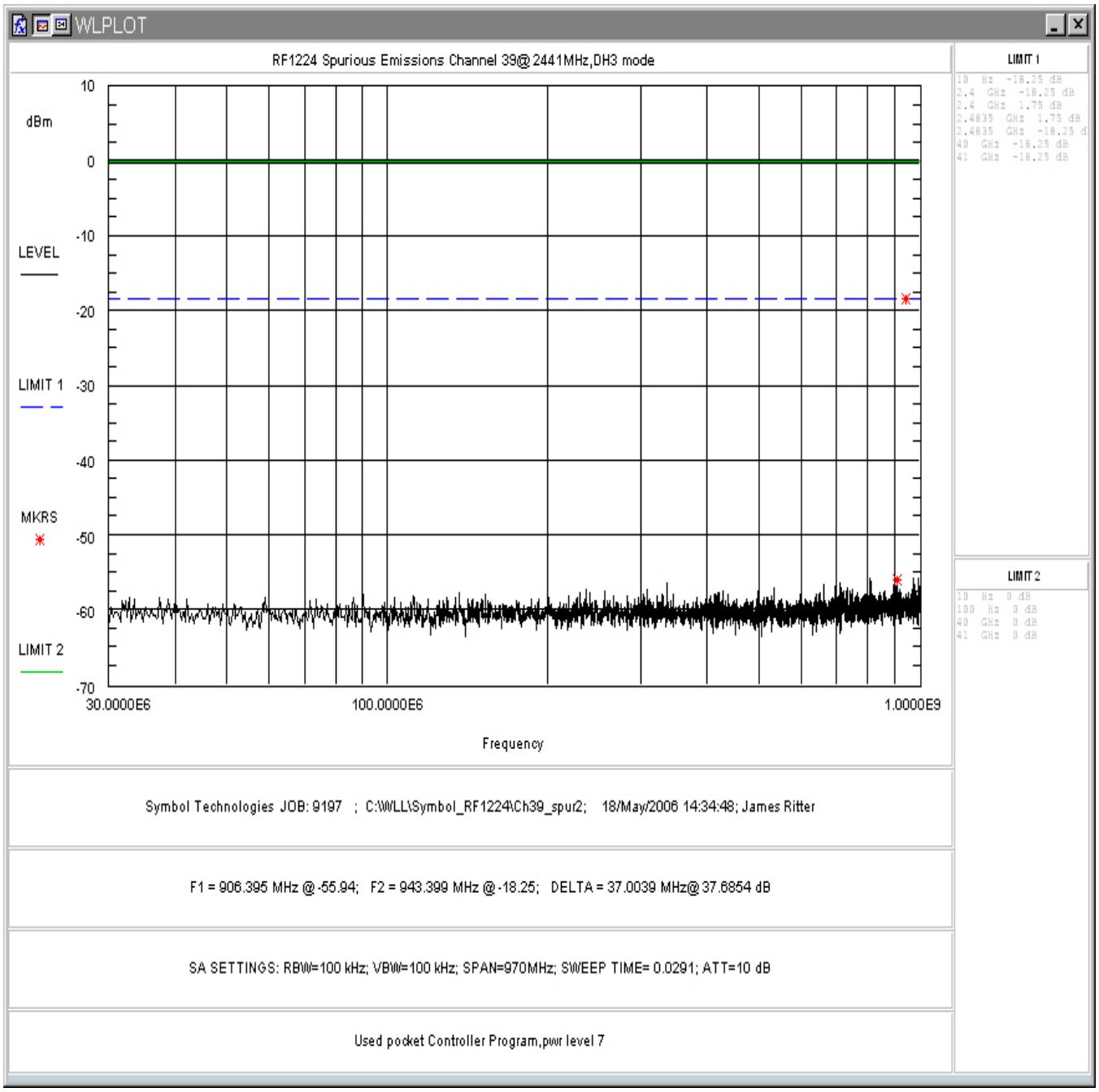

Figure 4-26. Conducted Spurious Emissions, Mid Channel, DH3 Mode, 30 - 1000MHz

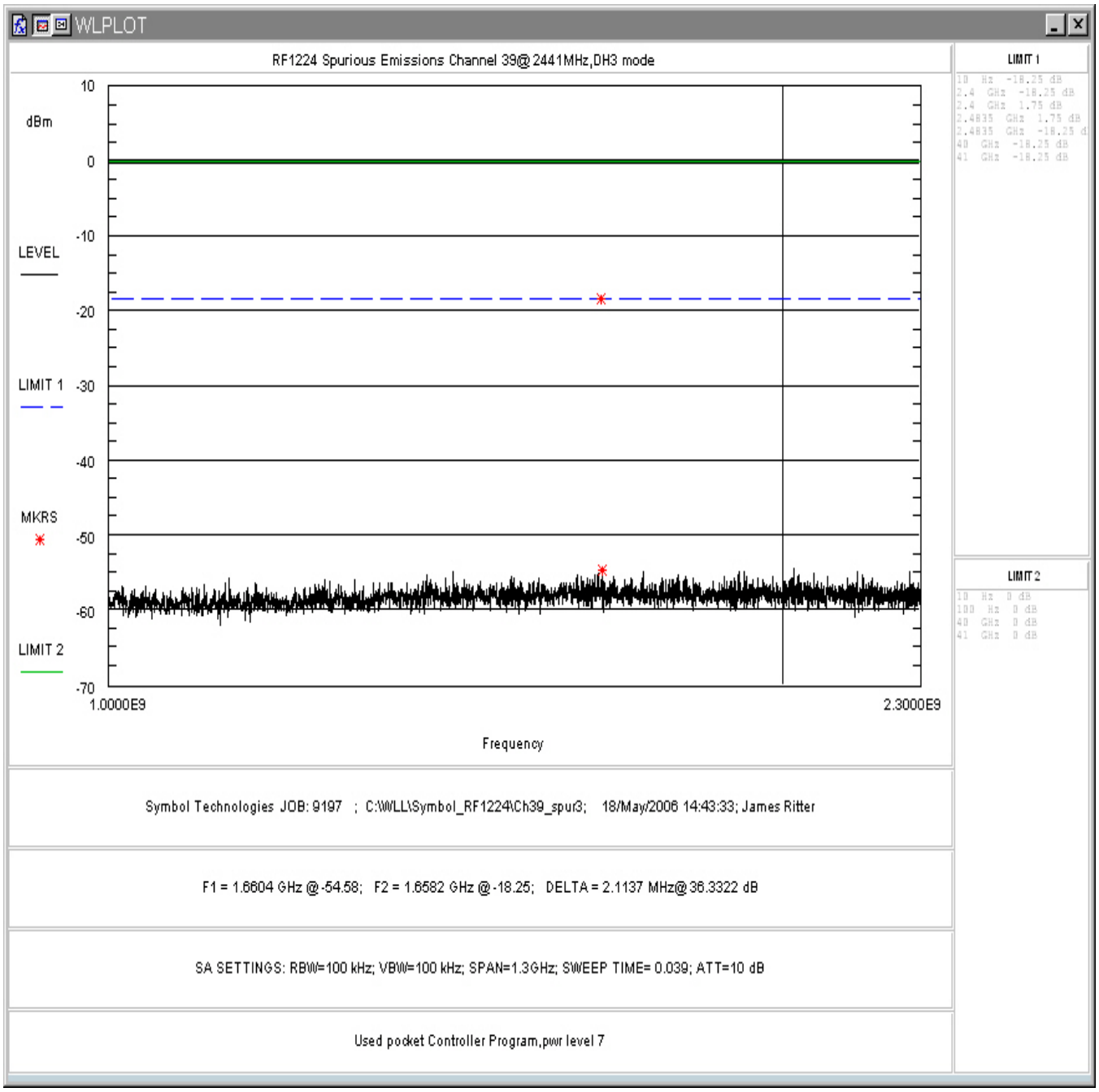

Figure 4-27. Conducted Spurious Emissions, Mid Channel, DH3 Mode, 1 – 2.3GHz

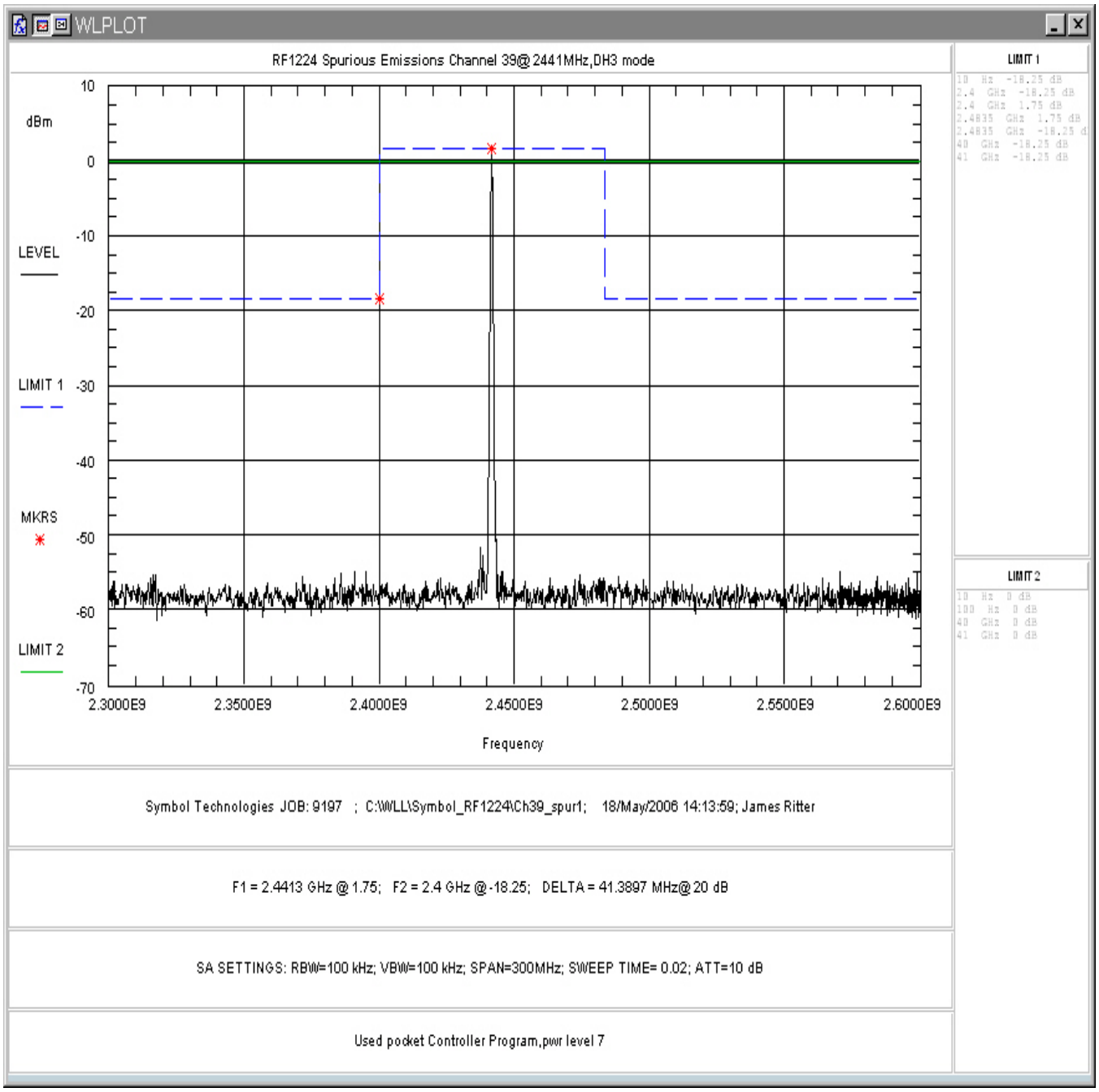

Figure 4-28. Conducted Spurious Emissions, Mid Channel, DH3 Mode, 2.3 – 2.6GHz

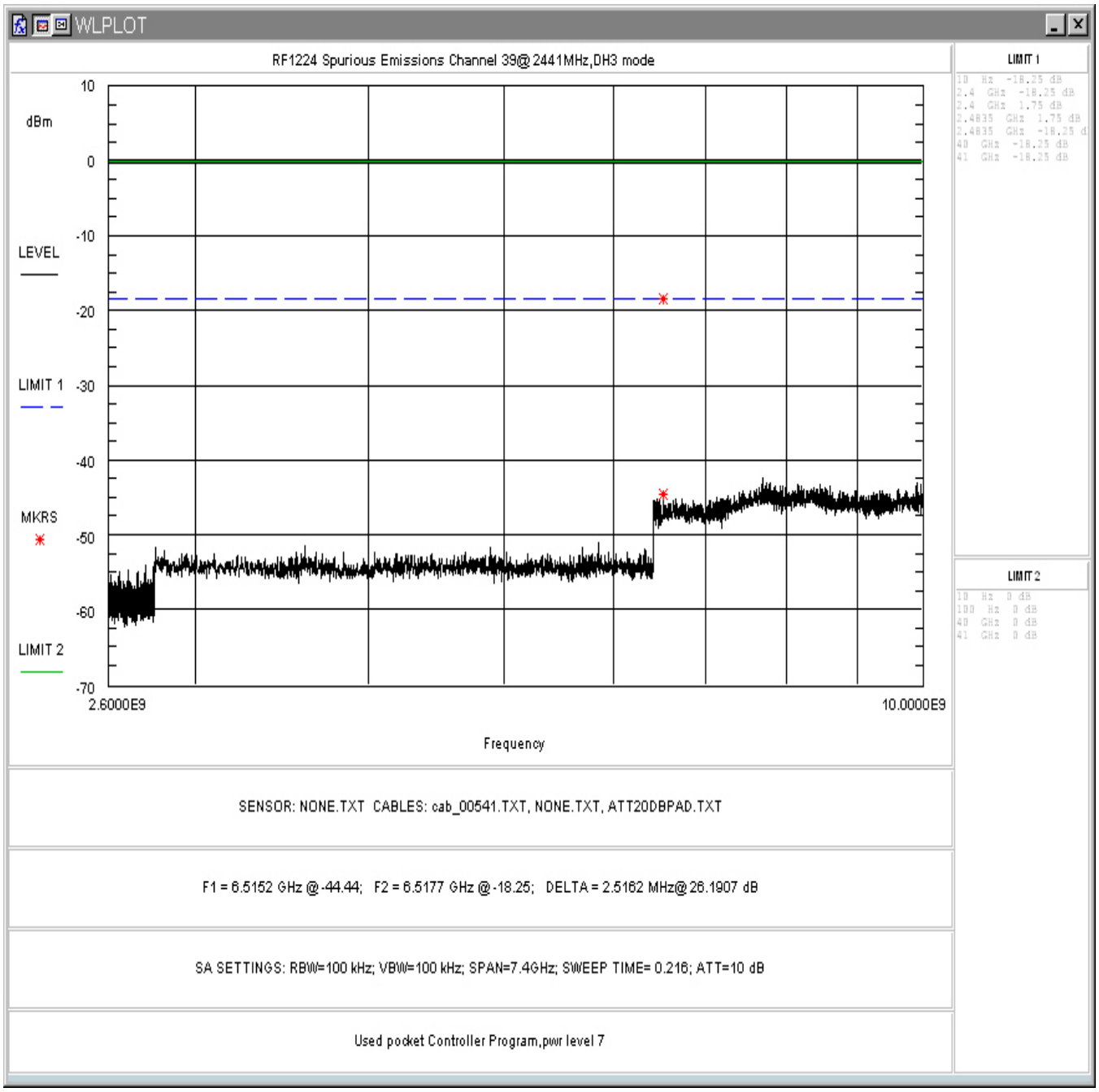

Figure 4-29. Conducted Spurious Emissions, Mid Channel, DH3 Mode, 2.6 - 10GHz

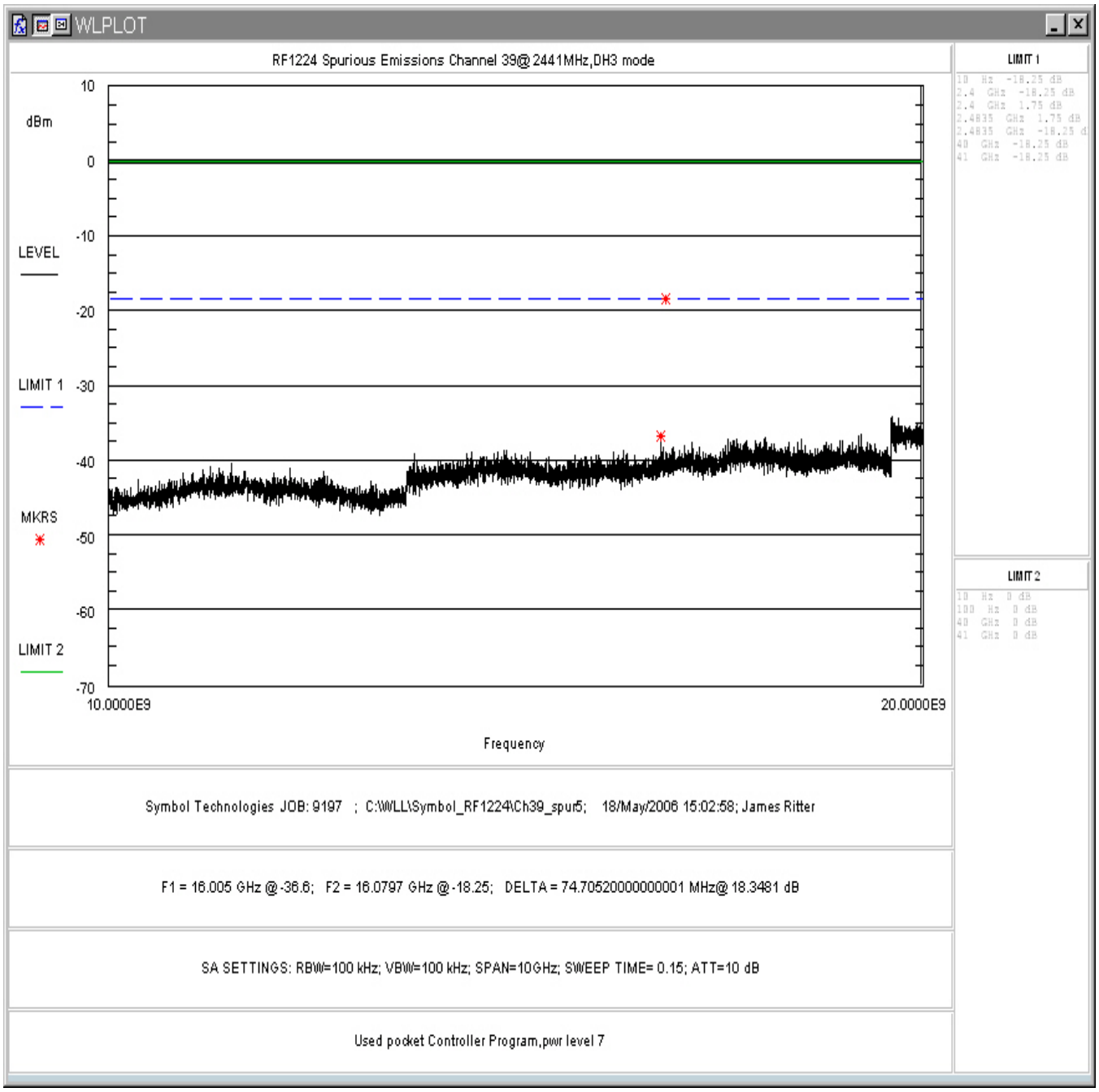

Figure 4-30. Conducted Spurious Emissions, Mid Channel, DH3 Mode, 10 - 20GHz

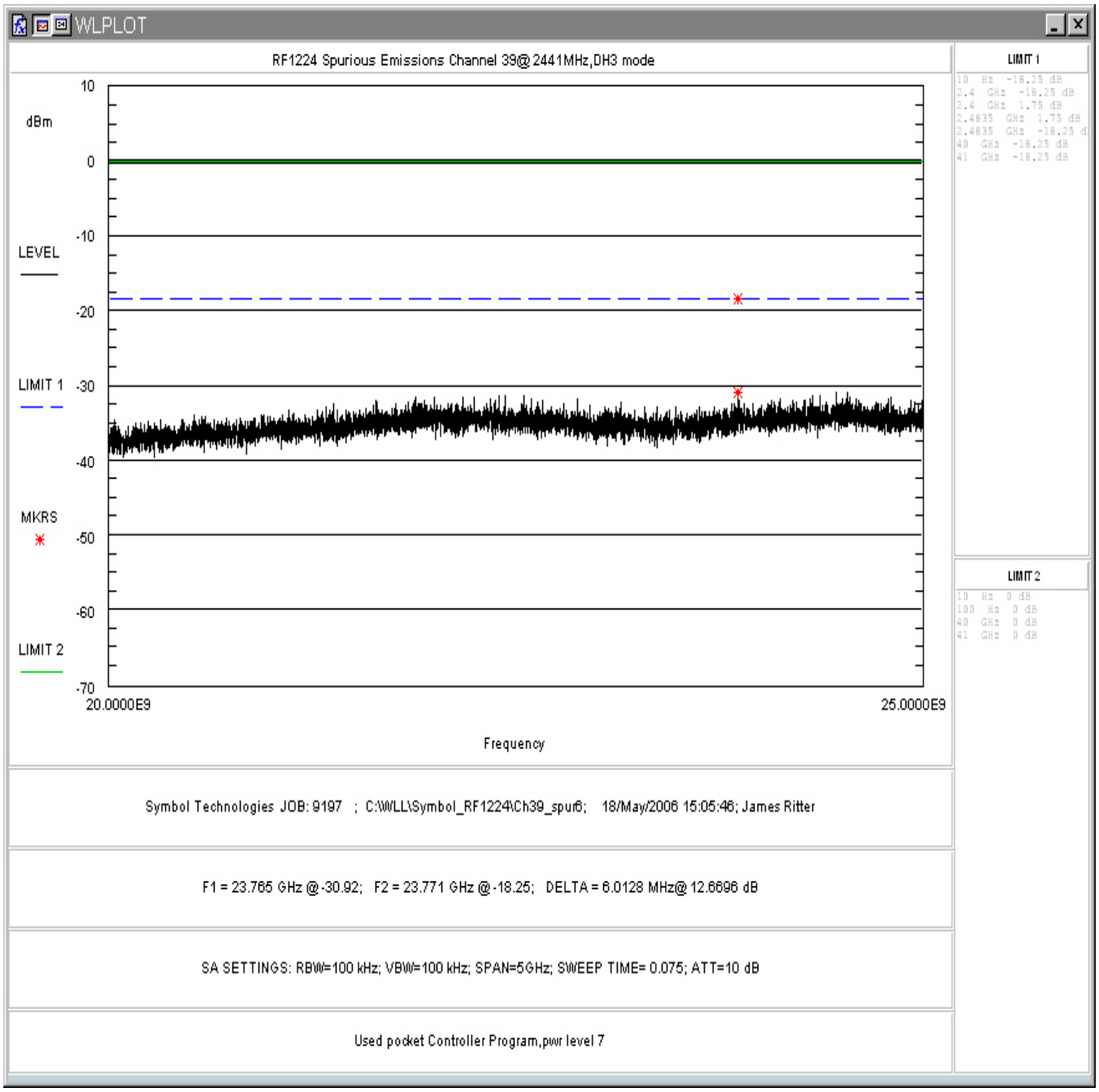

Figure 4-31. Conducted Spurious Emissions, Mid Channel, DH3 Mode, 20 - 25GHz

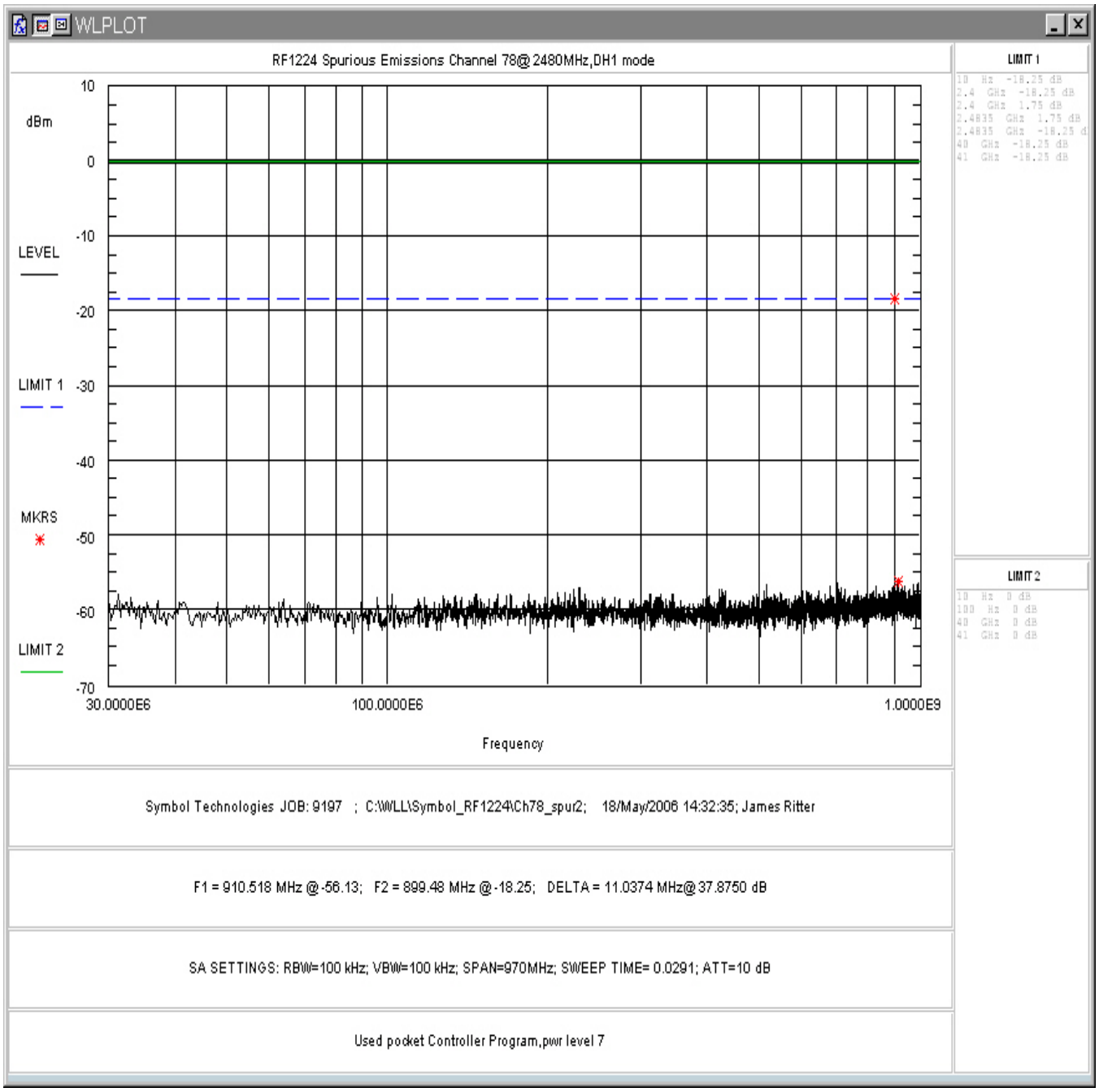

Figure 4-32. Conducted Spurious Emissions, High Channel, DH1 Mode, 30 - 1000MHz

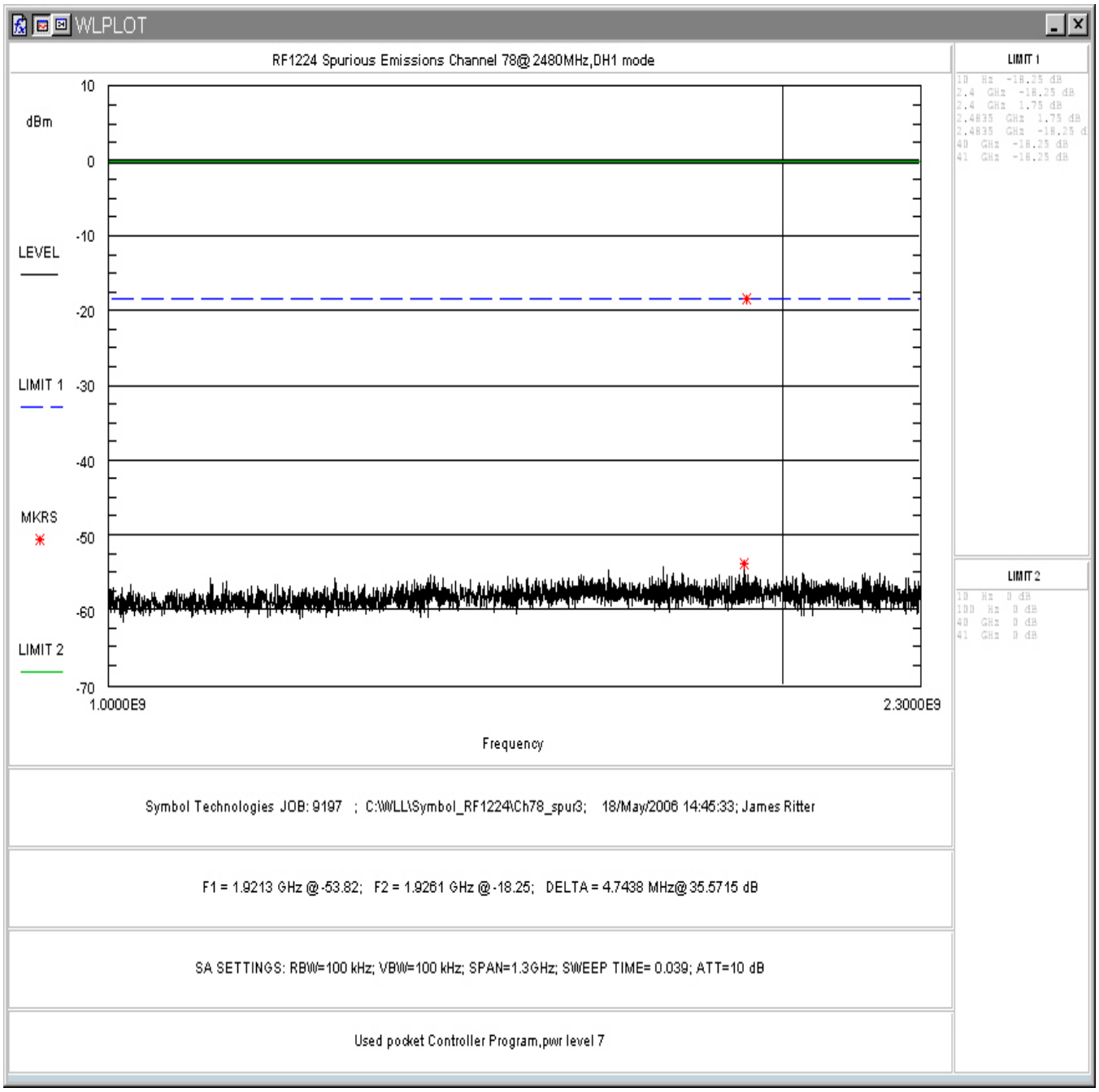

Figure 4-33. Conducted Spurious Emissions, High Channel, DH1 Mode, 1 – 2.3GHz

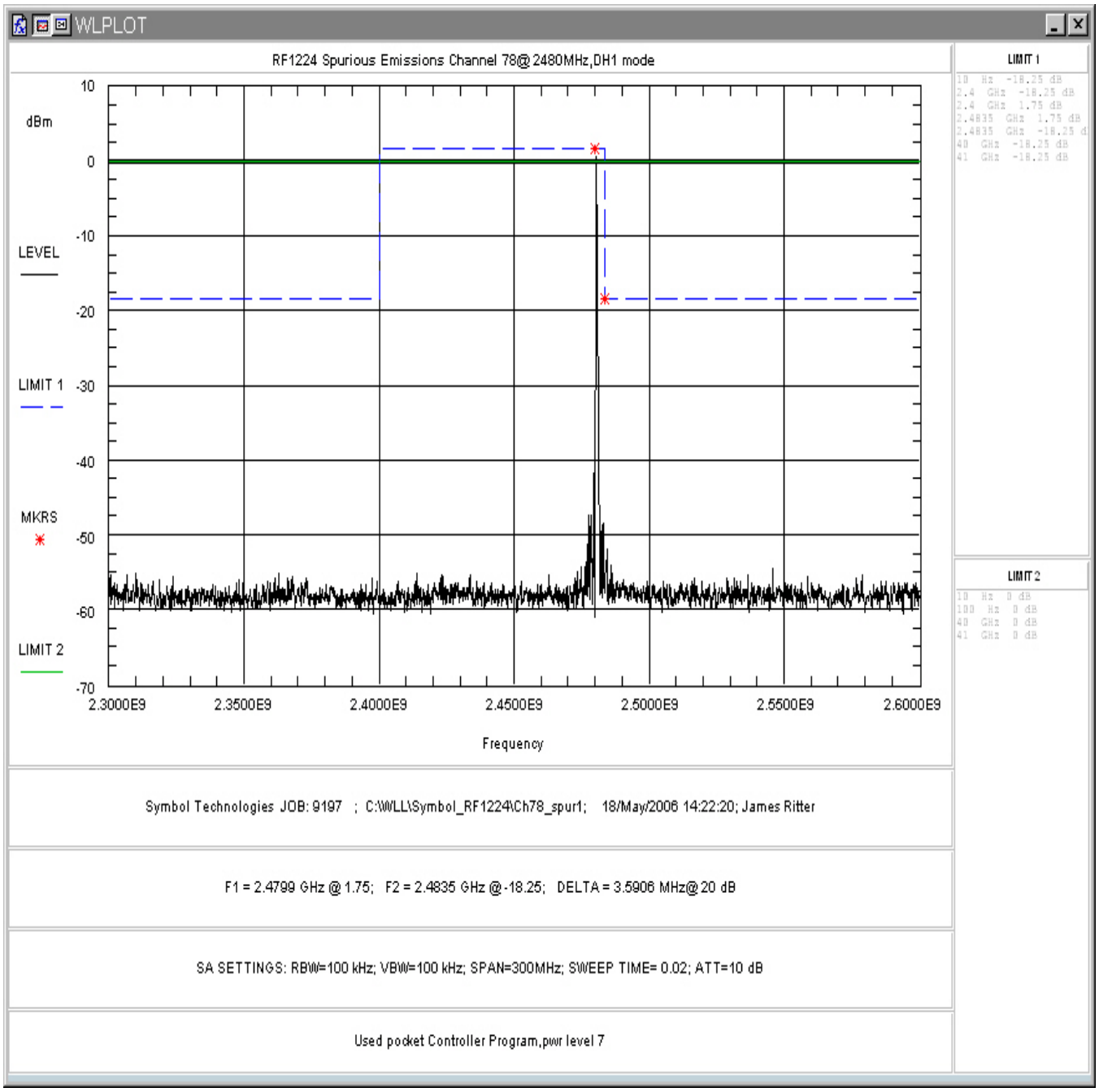

Figure 4-34. Conducted Spurious Emissions, High Channel, DH1 Mode, 2.3 – 2.6GHz

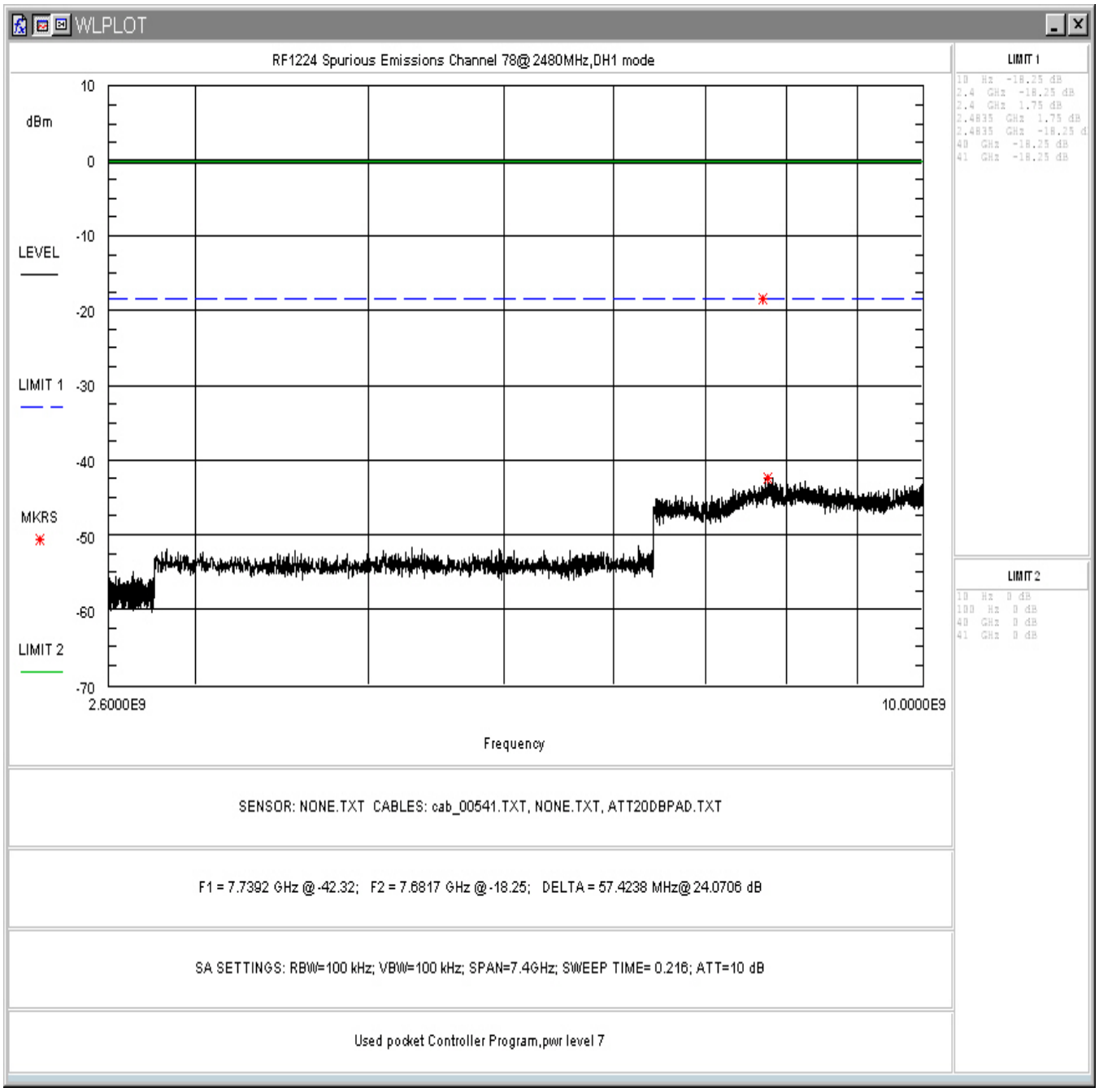

Figure 4-35. Conducted Spurious Emissions, High Channel, DH1 Mode, 2.6 - 10GHz

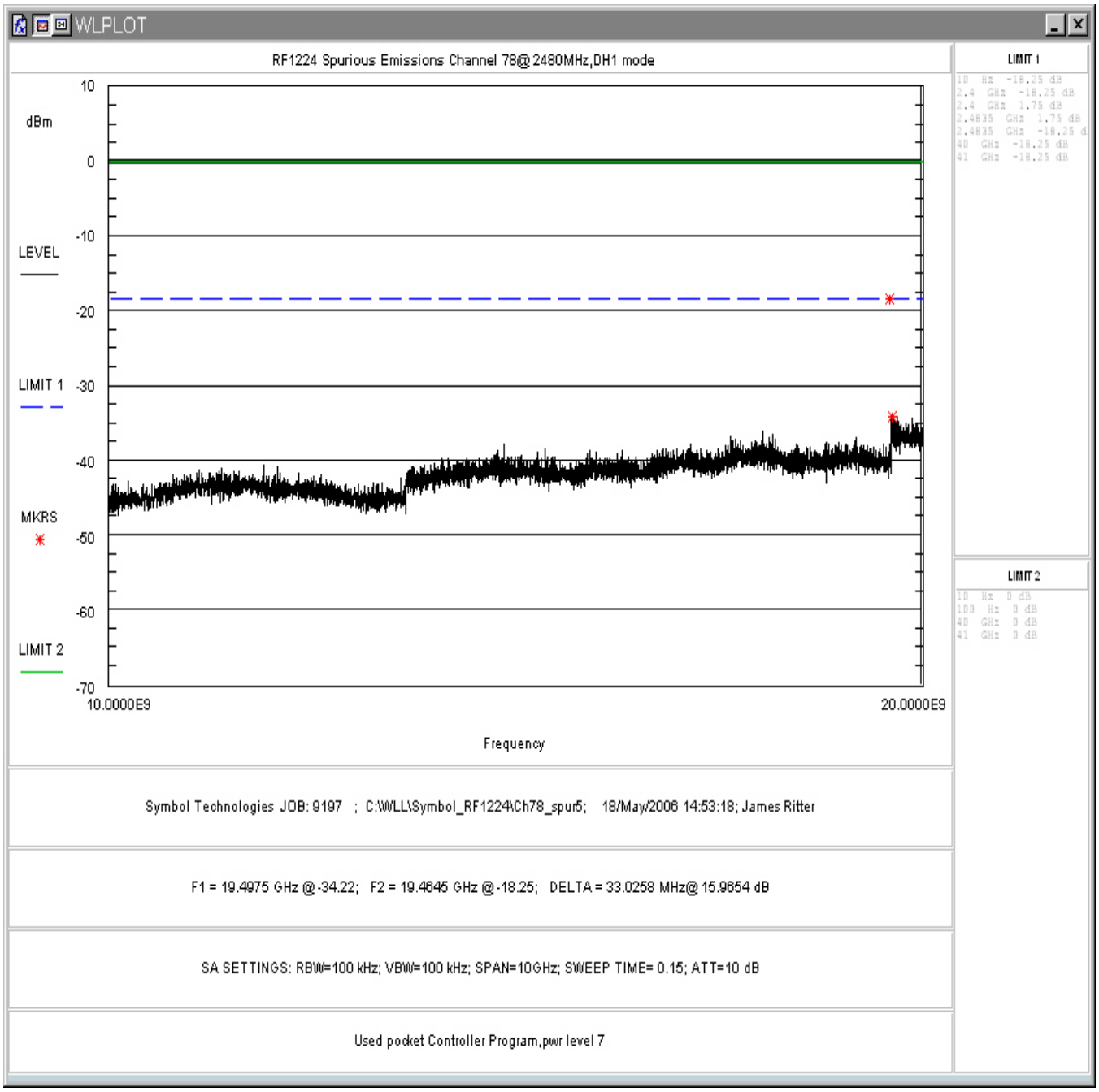

Figure 4-36. Conducted Spurious Emissions, High Channel, DH1 Mode, 10 - 20GHz

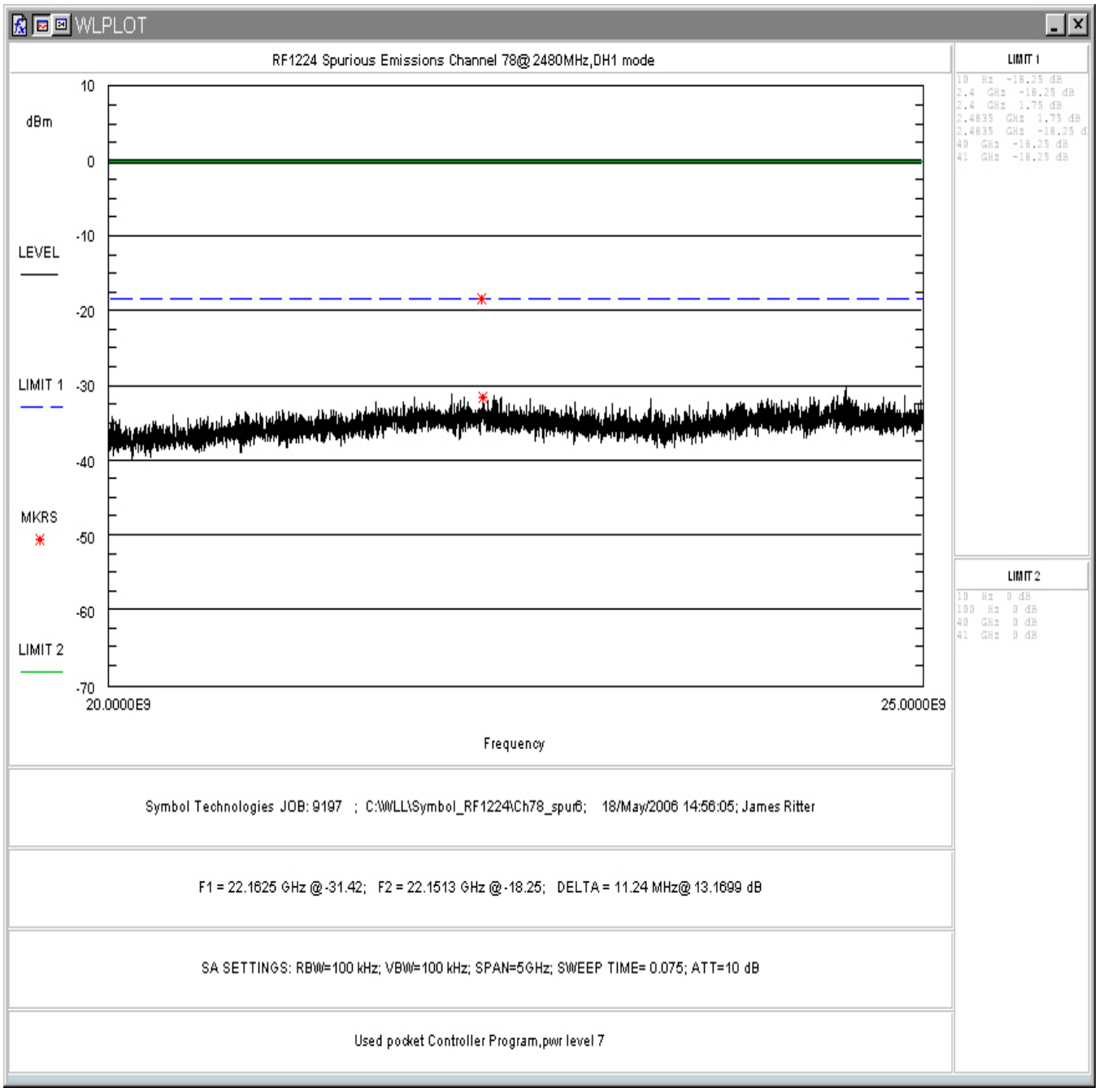

Figure 4-37. Conducted Spurious Emissions, High Channel, DH1 Mode, 20 - 25GHz

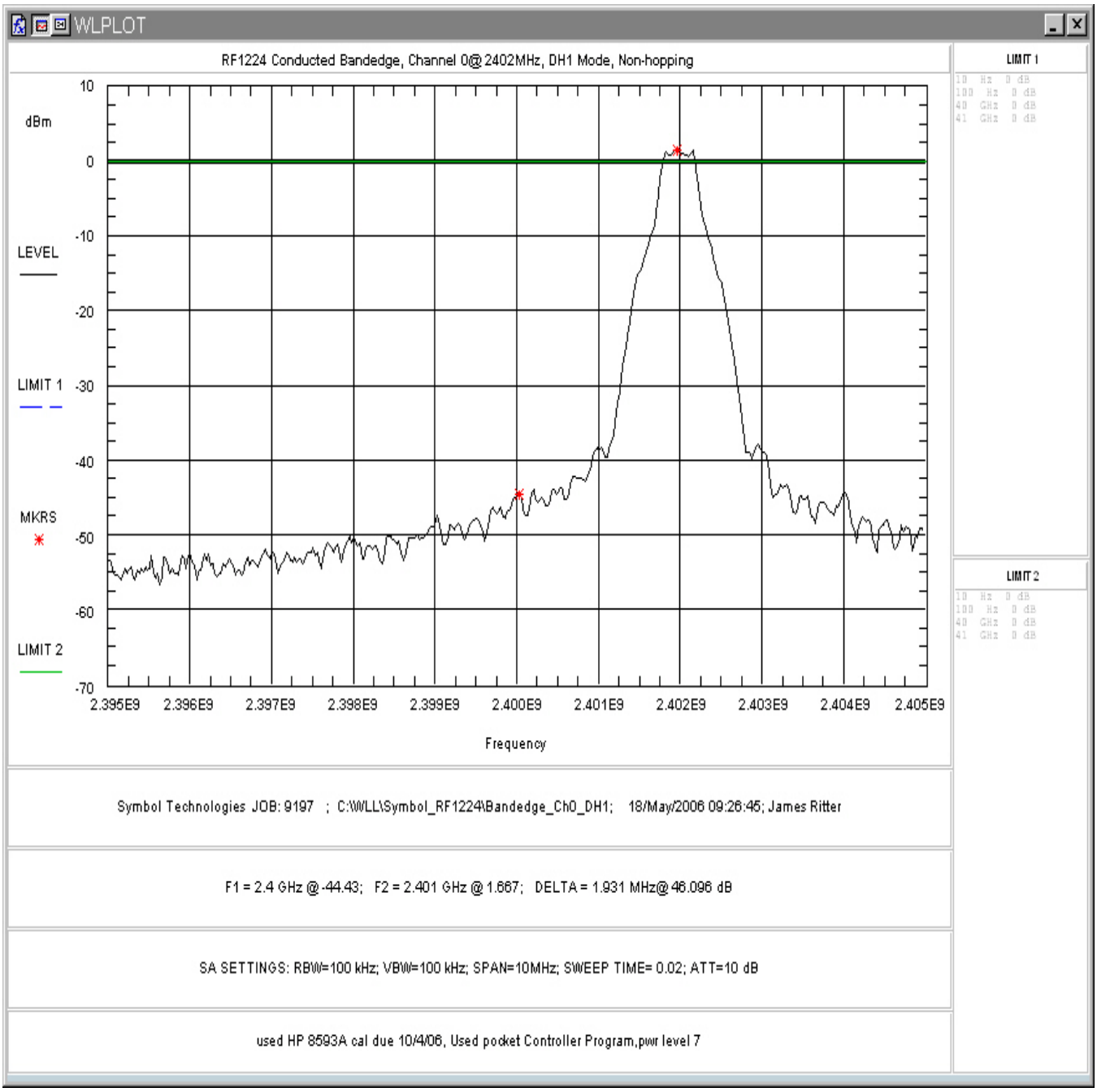

Figure 4-38. Conducted Bandedge, Low Channel, 2402MHz, DH1 Mode

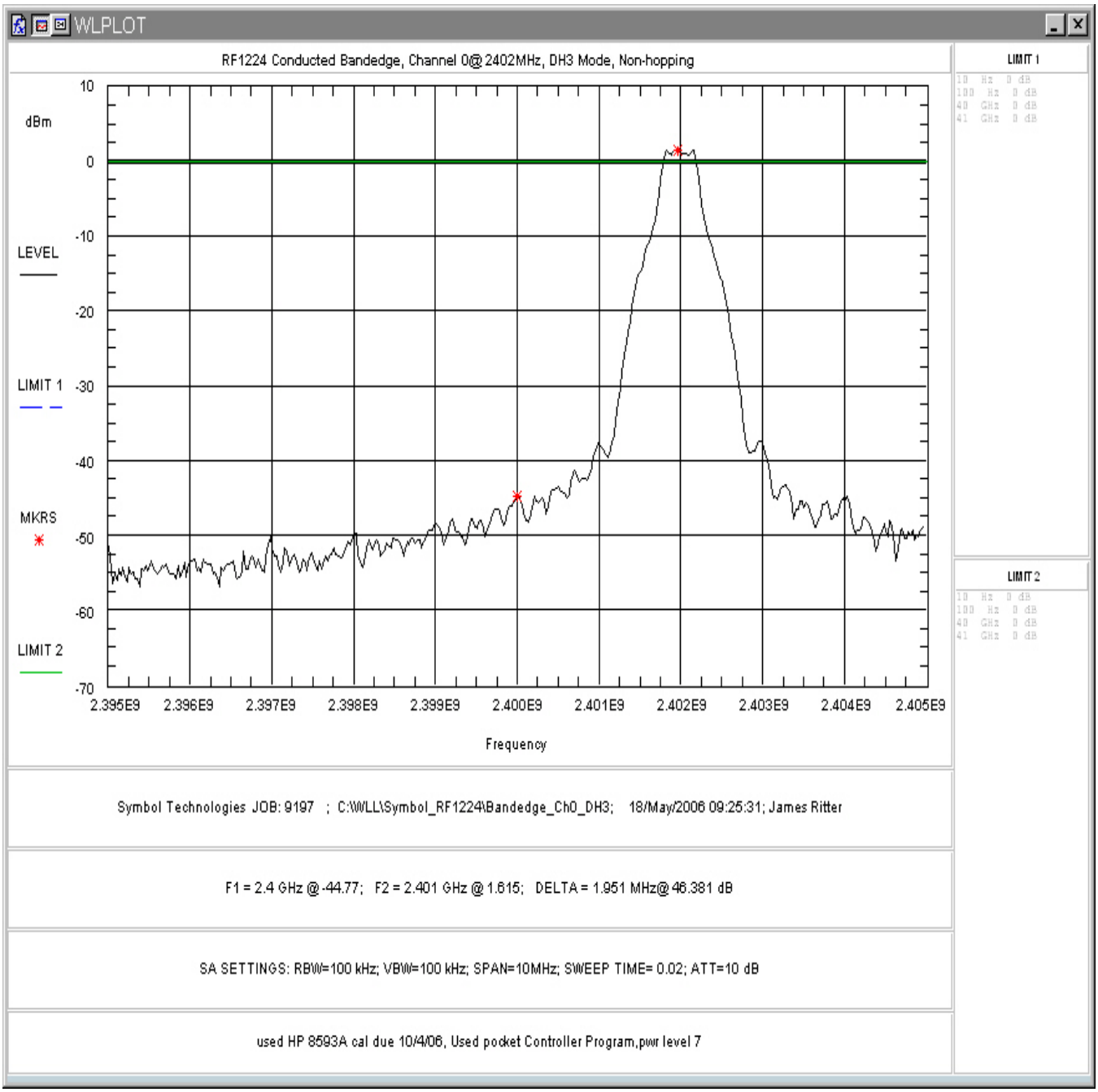

Figure 4-39. Conducted Bandedge, Low Channel, 2402MHz, DH3 Mode

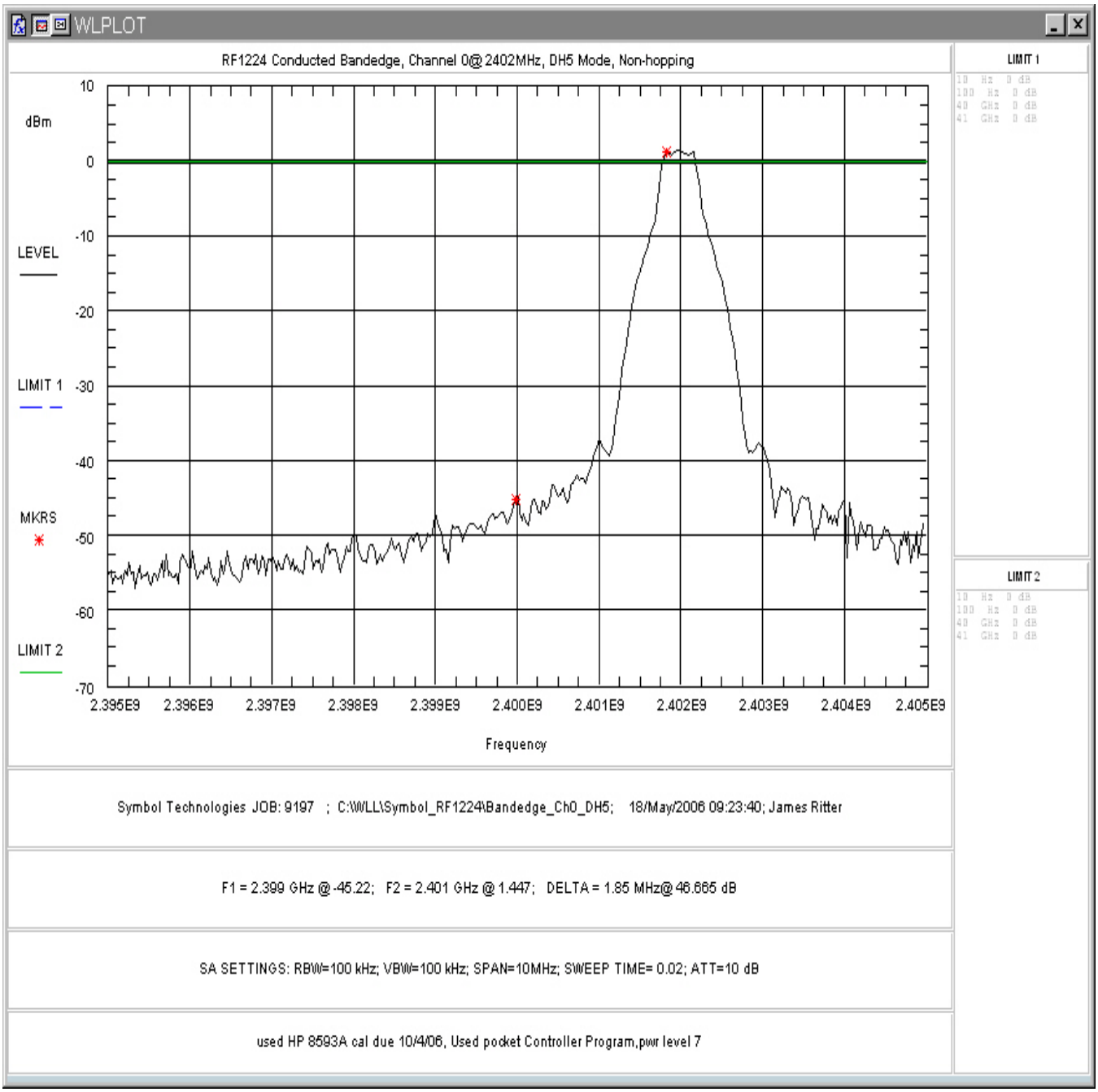

Figure 4-40. Conducted Bandedge, Low Channel, 2402MHz, DH5 Mode

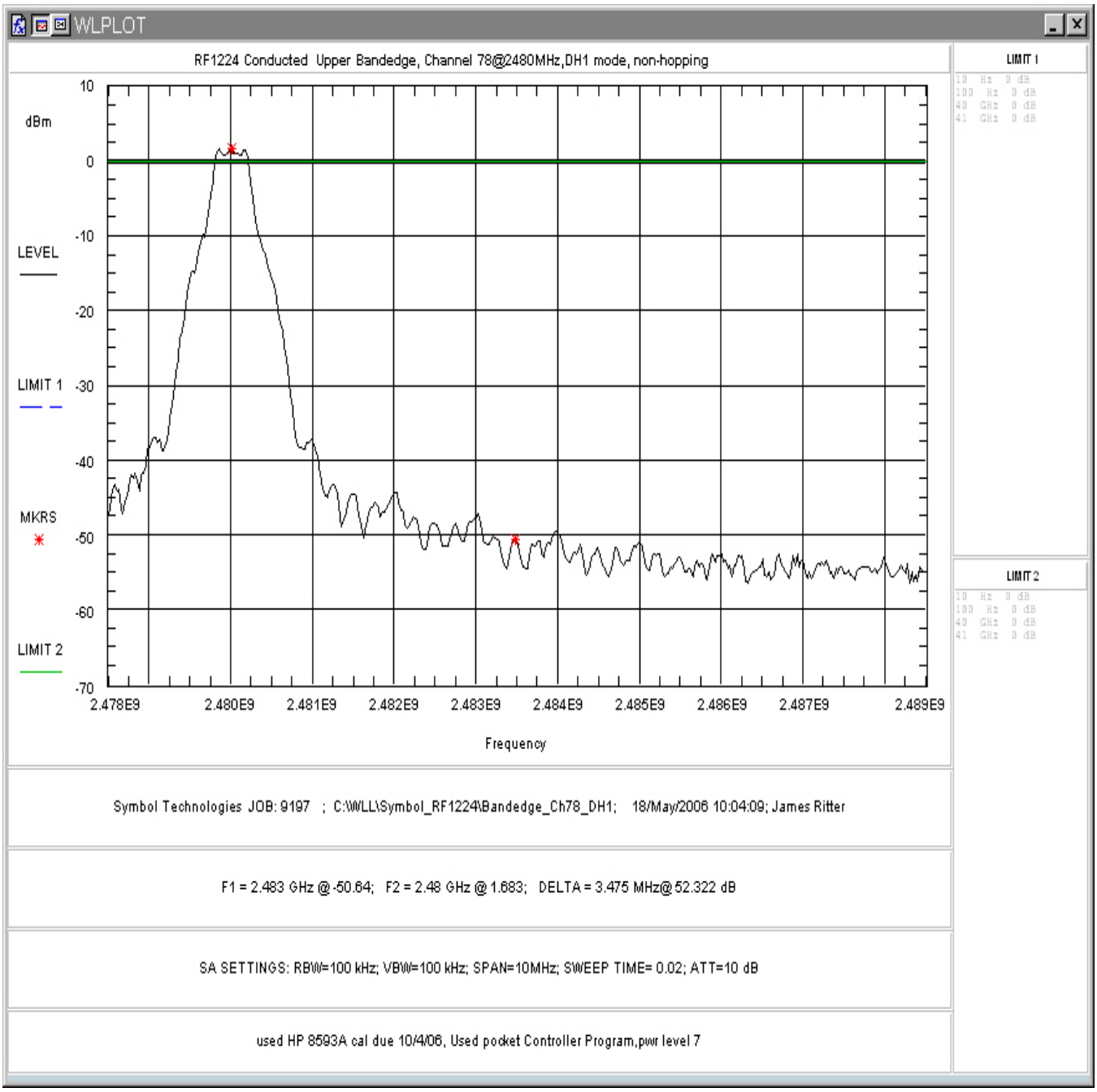

Figure 4-41. Conducted Bandedge, High Channel, 2480MHz, DH1 Mode

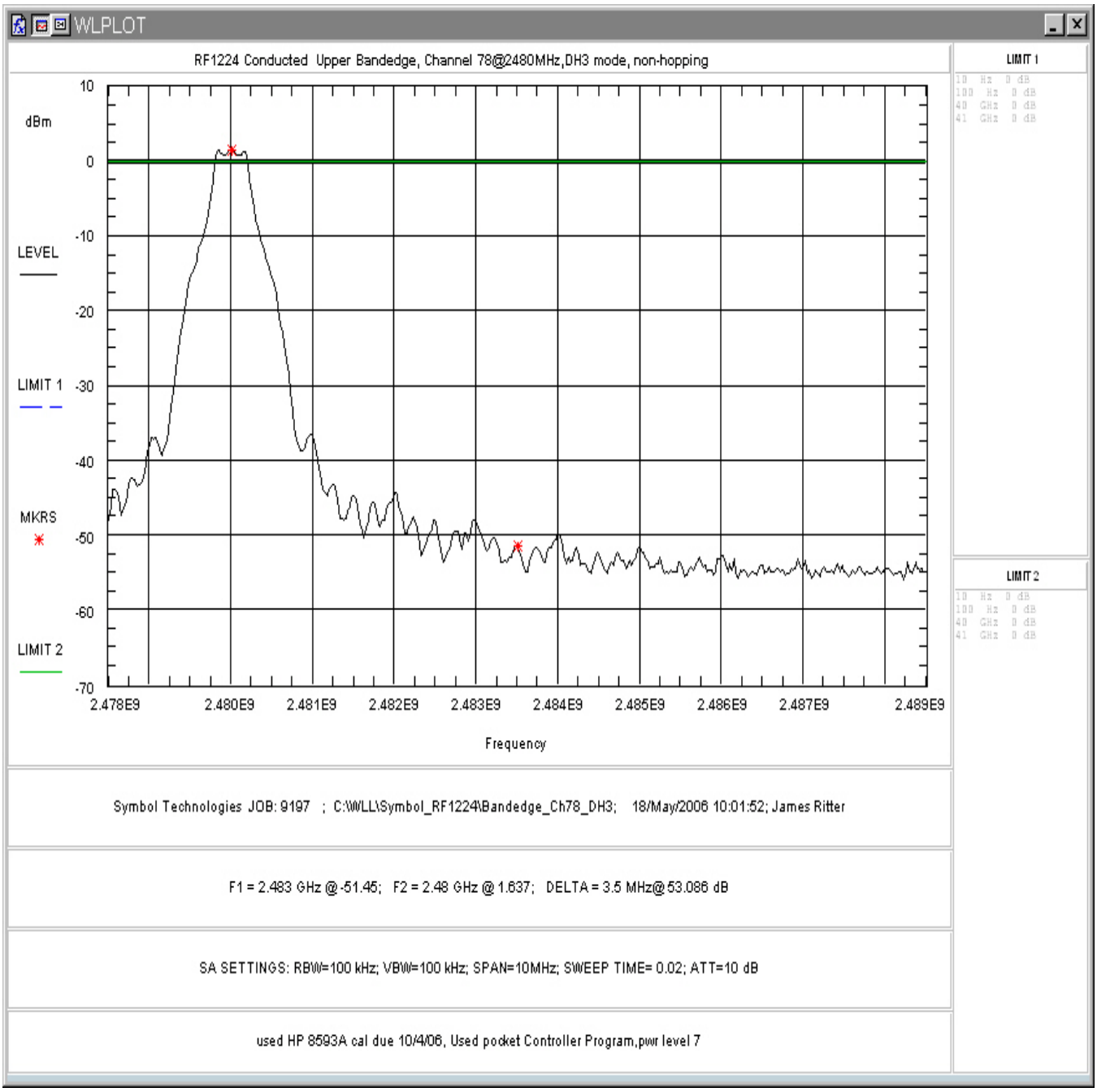

Figure 4-42. Conducted Bandedge, High Channel, 2480MHz, DH3 Mode

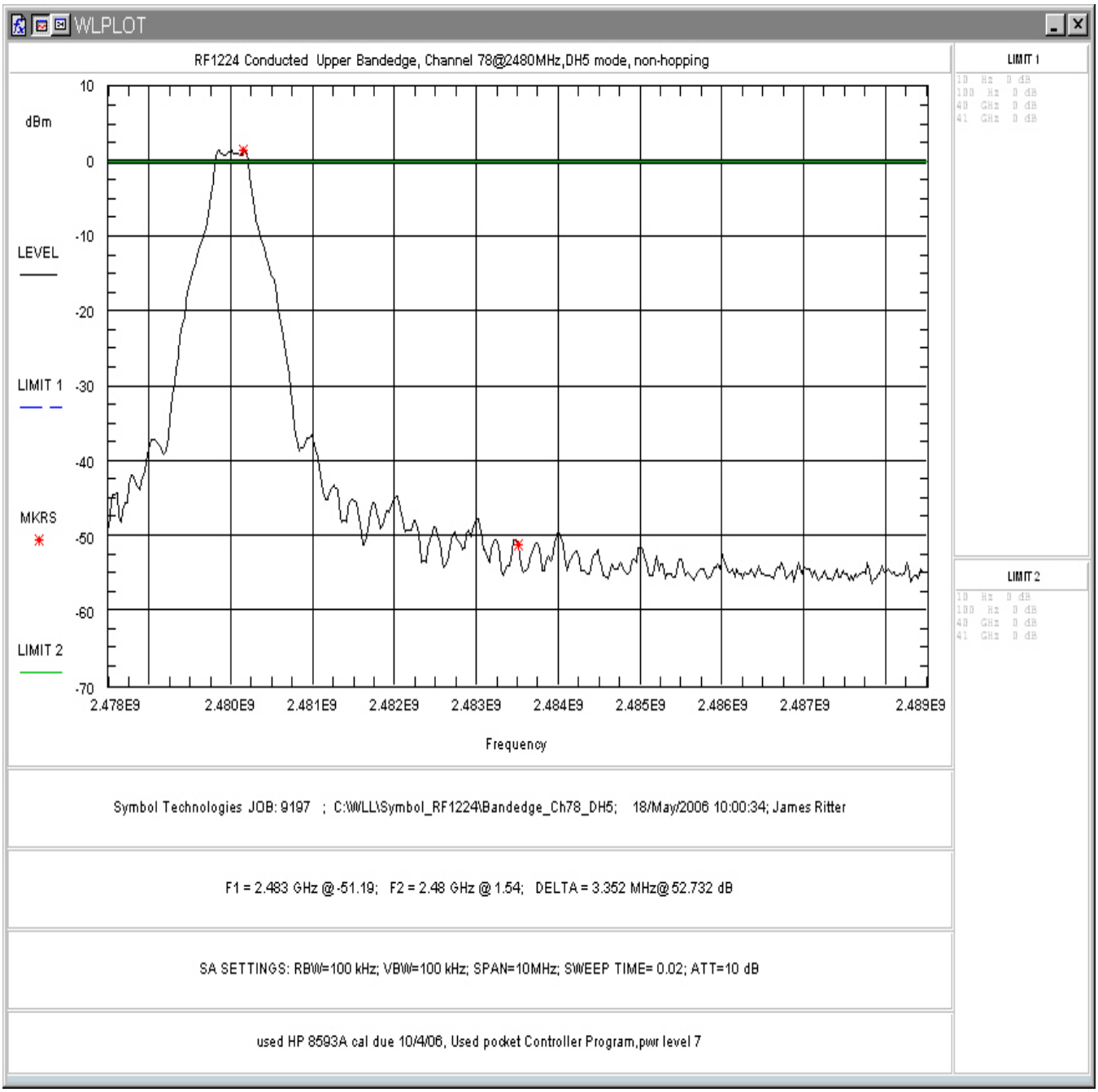

Figure 4-43. Conducted Bandedge, High Channel, 2480MHz, DH5 Mode

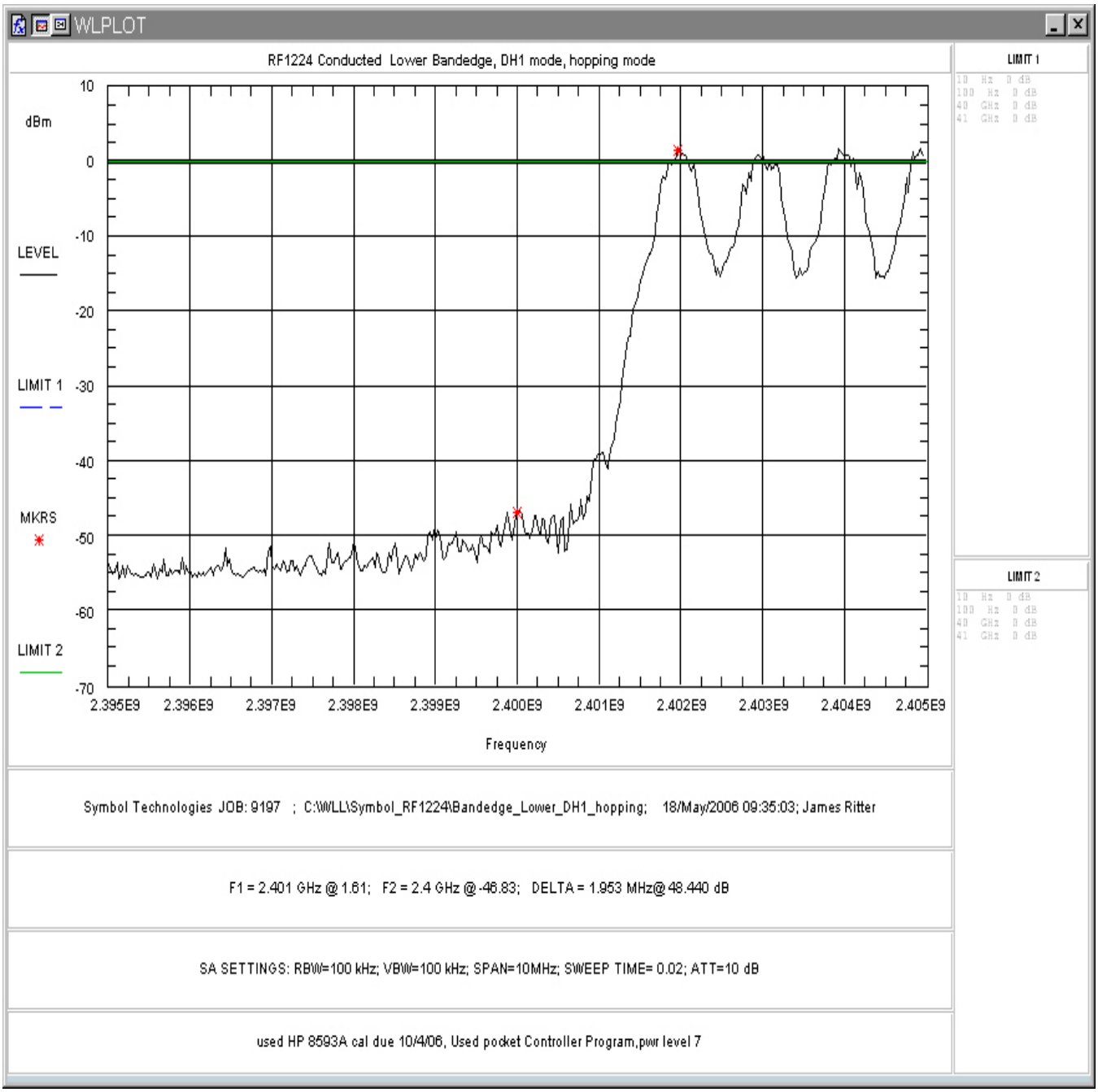

Figure 4-44. Conducted Bandedge, Hopping Mode, Low Channel, 2402MHz, DH1 Mode

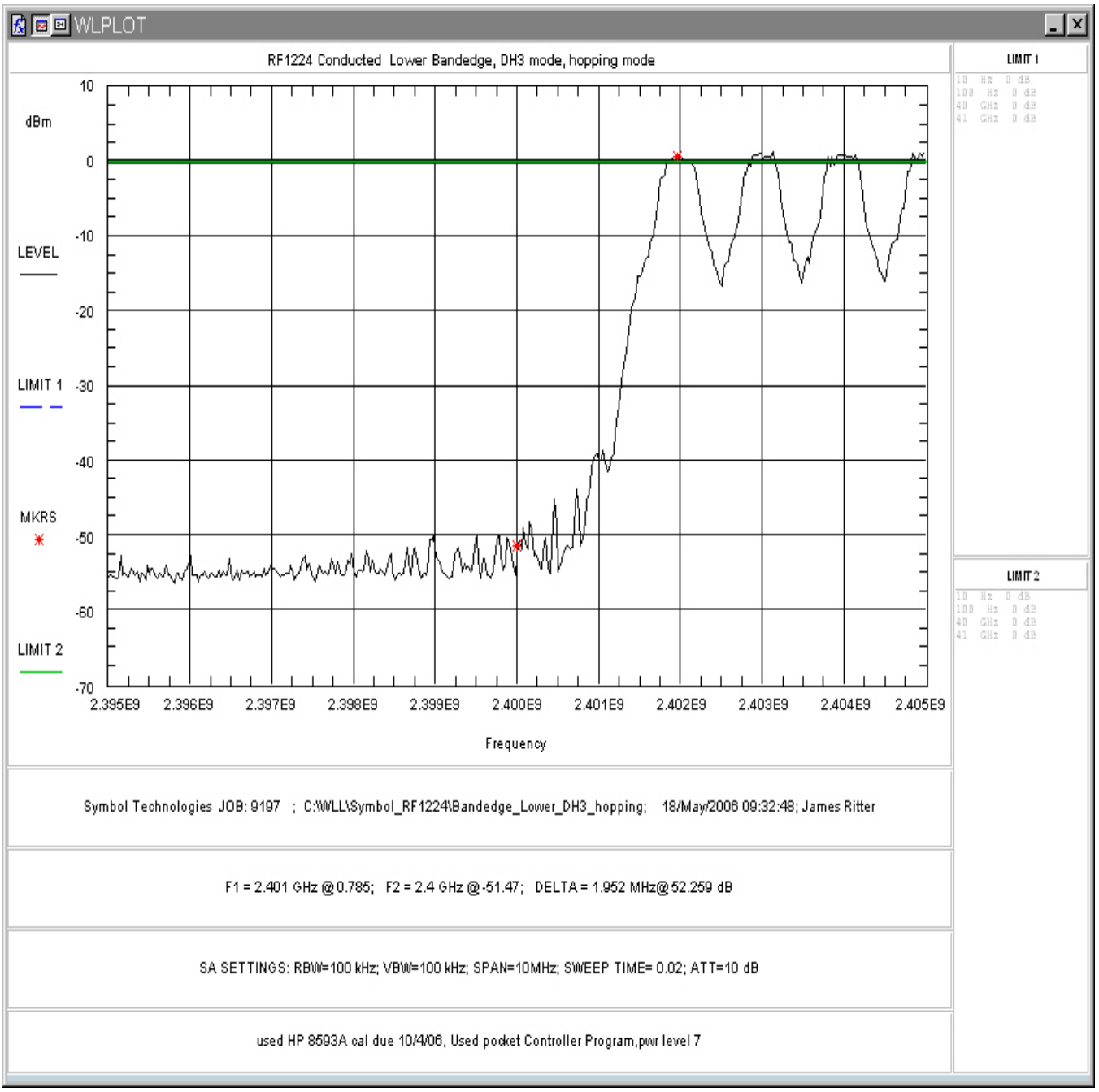

Figure 4-45. Conducted Bandedge, Hopping Mode, Low Channel, 2402MHz, DH3 Mode

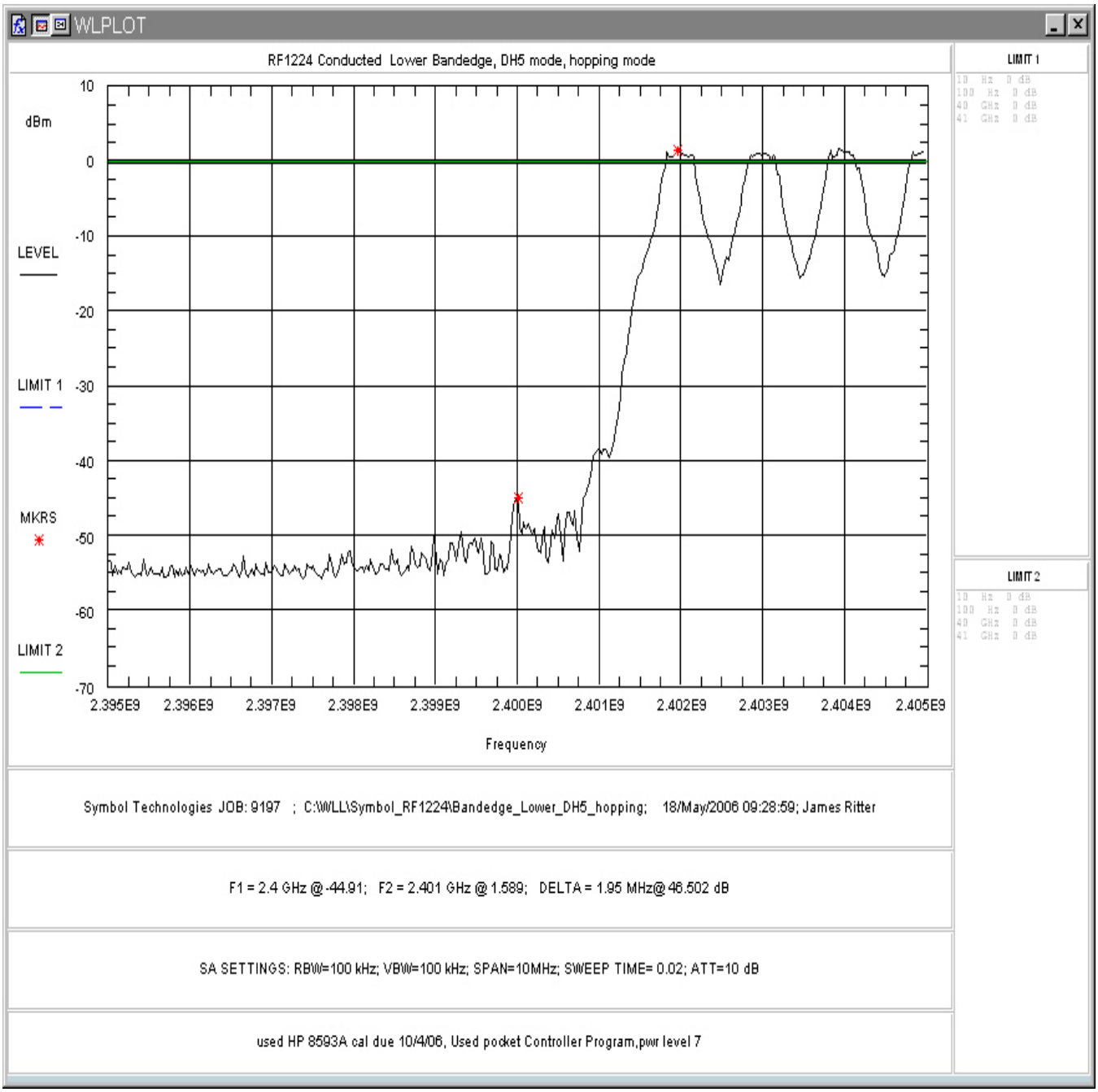

Figure 4-46. Conducted Bandedge, Hopping Mode, Low Channel, 2402MHz, DH5 Mode

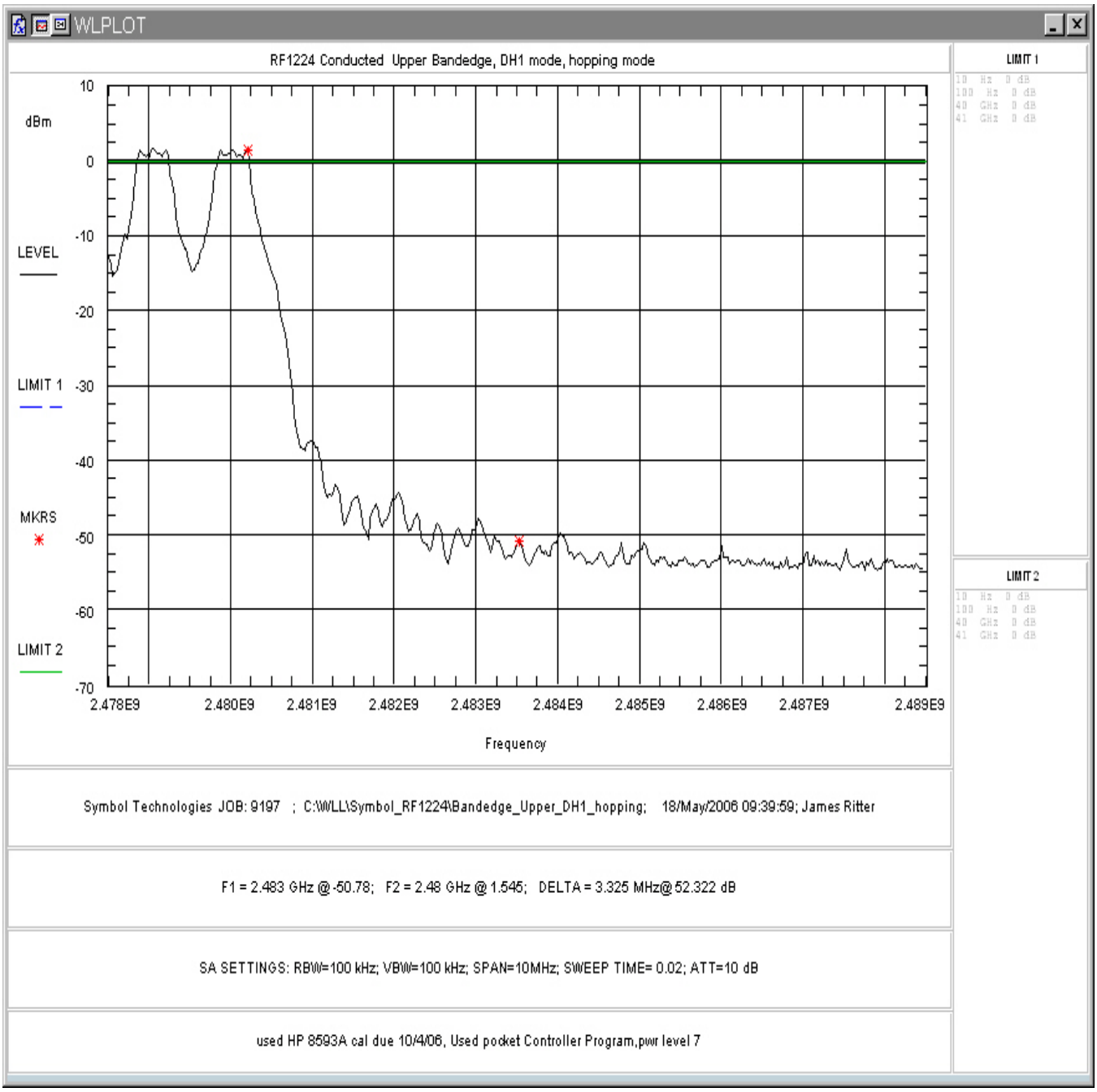

Figure 4-47. Conducted Bandedge, Hopping Mode, High Channel, 2480MHz, DH1 Mode

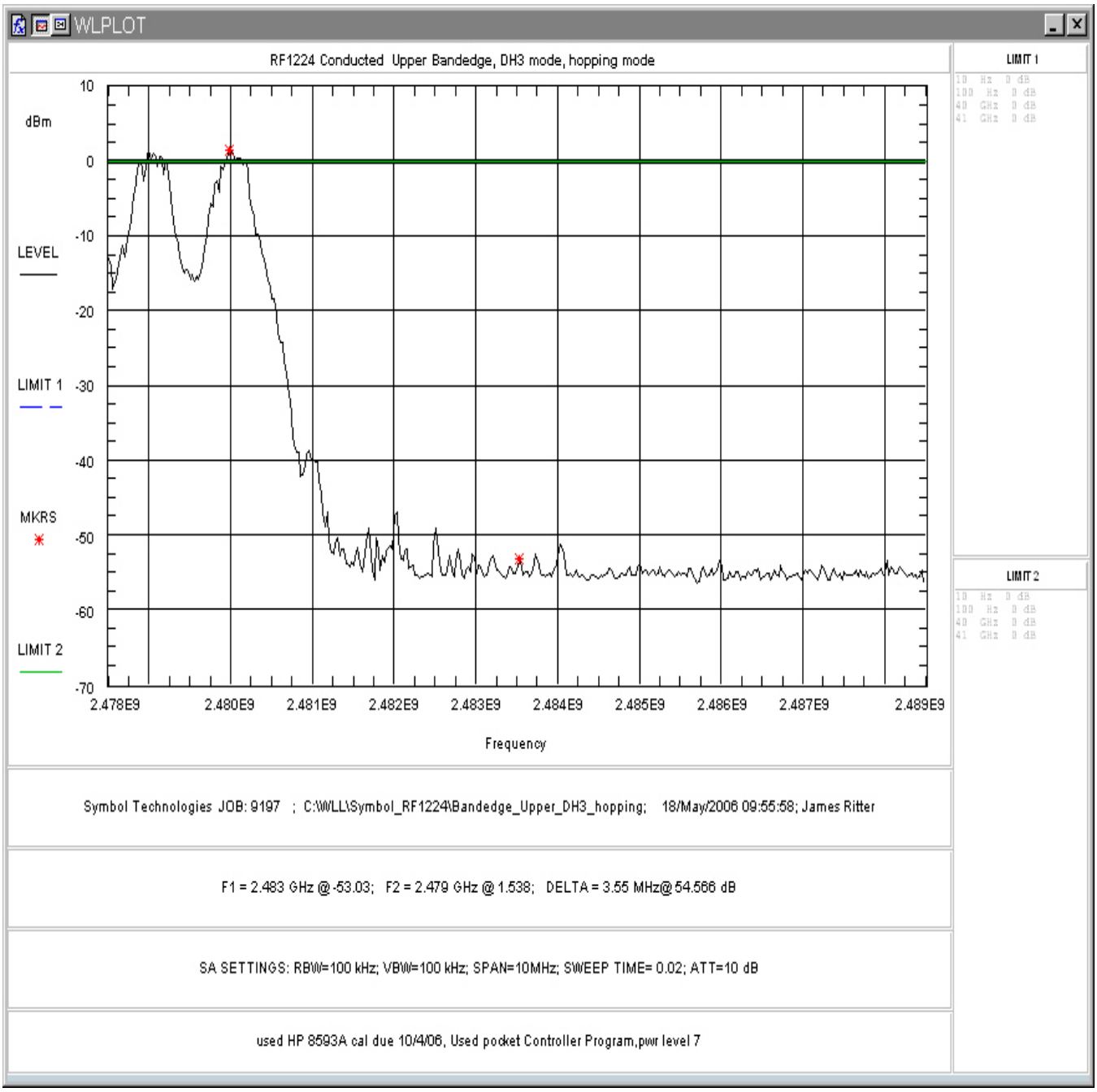

Figure 4-48. Conducted Bandedge, Hopping Mode, High Channel, 2480MHz, DH3 Mode

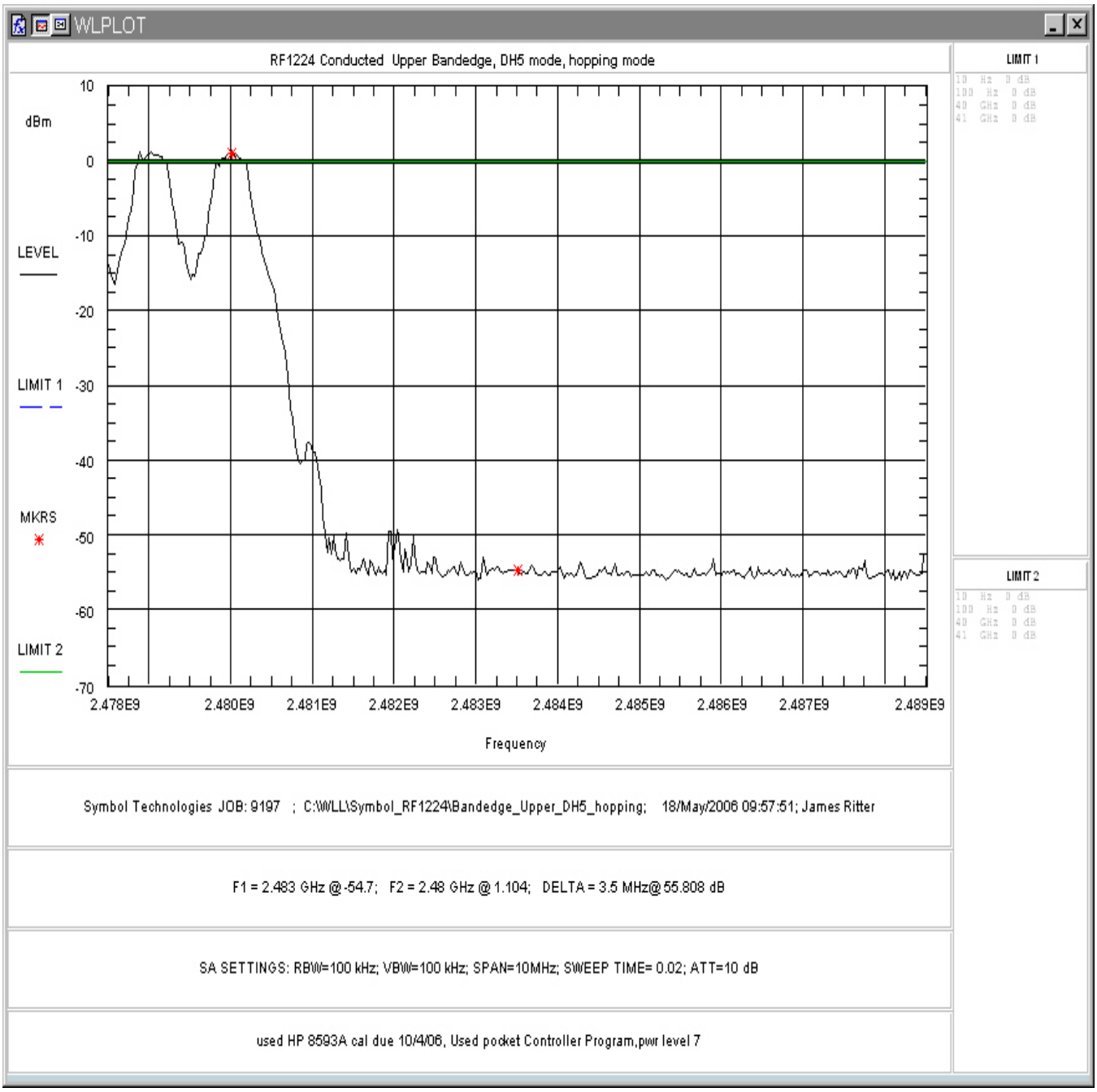

Figure 4-49. Conducted Bandedge, Hopping Mode, High Channel, 2480MHz, DH5 Mode

4.6 RF Peak Power Spectral Density (§15.247(e) and RSS-210, Annex 8.2)

For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer. The analyzer offset was adjusted to compensate for the attenuator and other losses in the system.

The highest peak within the transmission was located and measured. The low, middle, and high channels were measured in the DH1, DH3, and DH5 mode time slots. Table 5 provides a summary of the data.

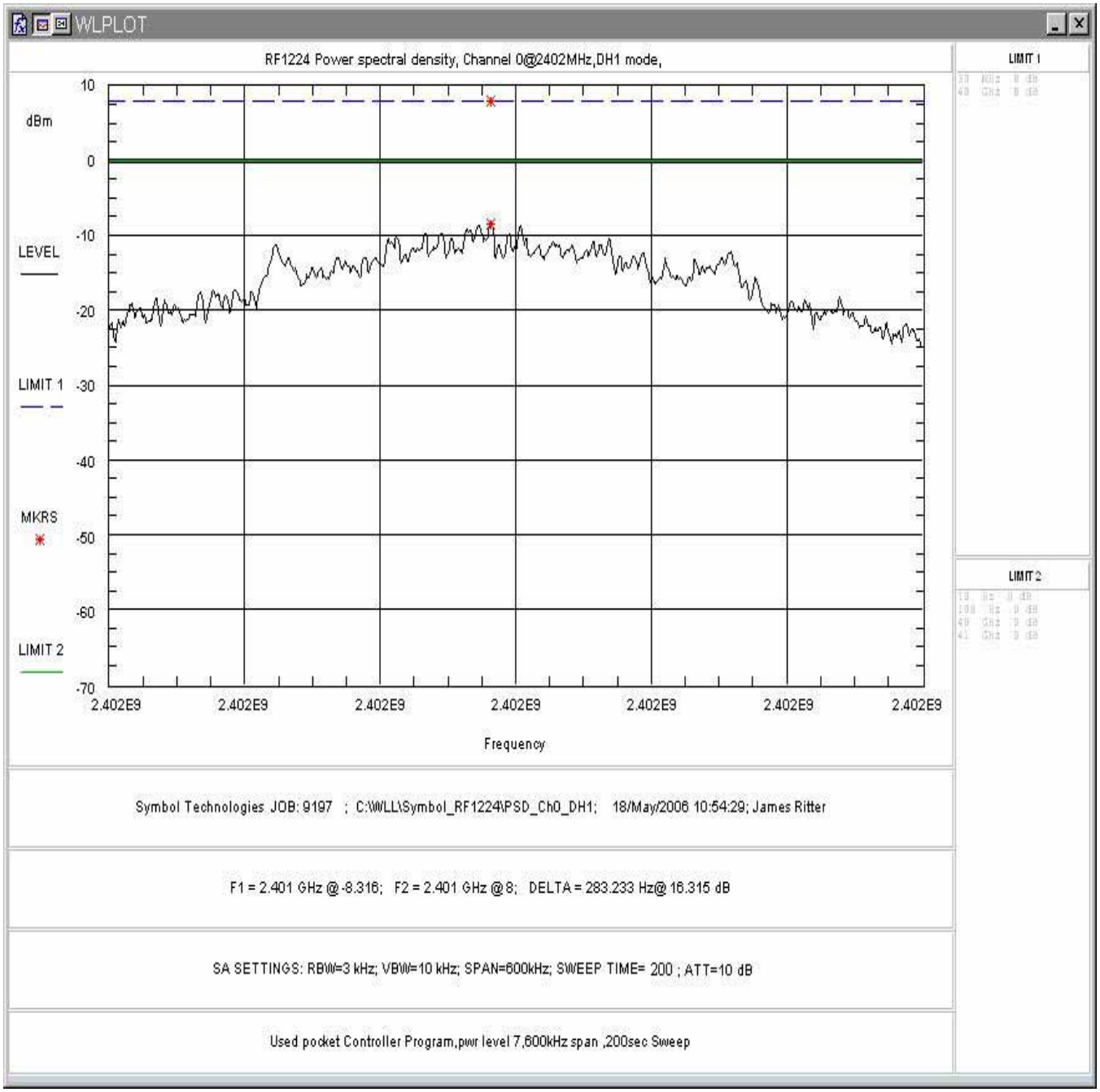

Figure 4-50. Power Spectral Density, Low Channel, DH1 Mode

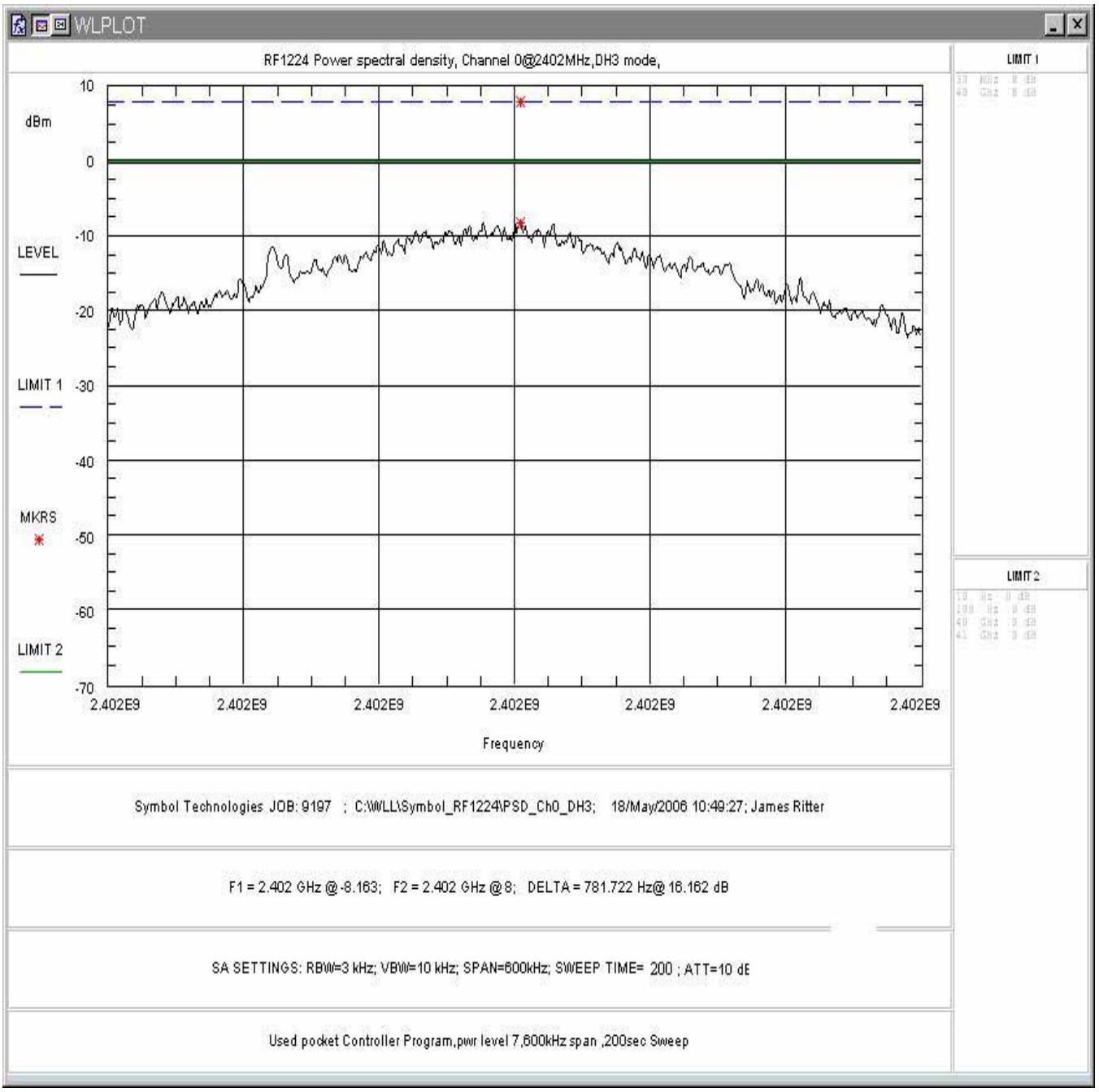

Figure 4-51. Power Spectral Density, Low Channel, DH3 Mode

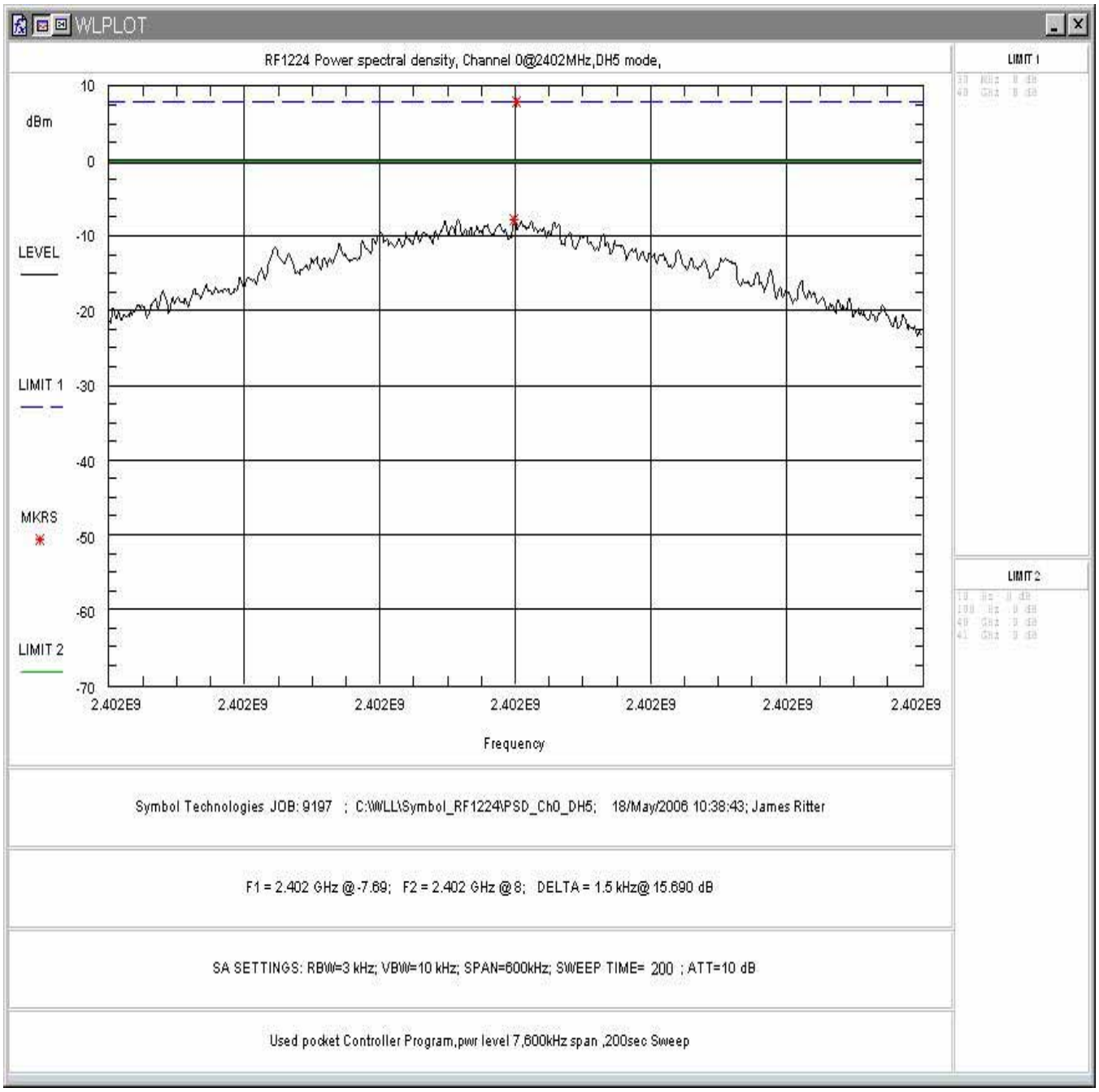

Figure 4-52. Power Spectral Density, Low Channel, DH5 Mode

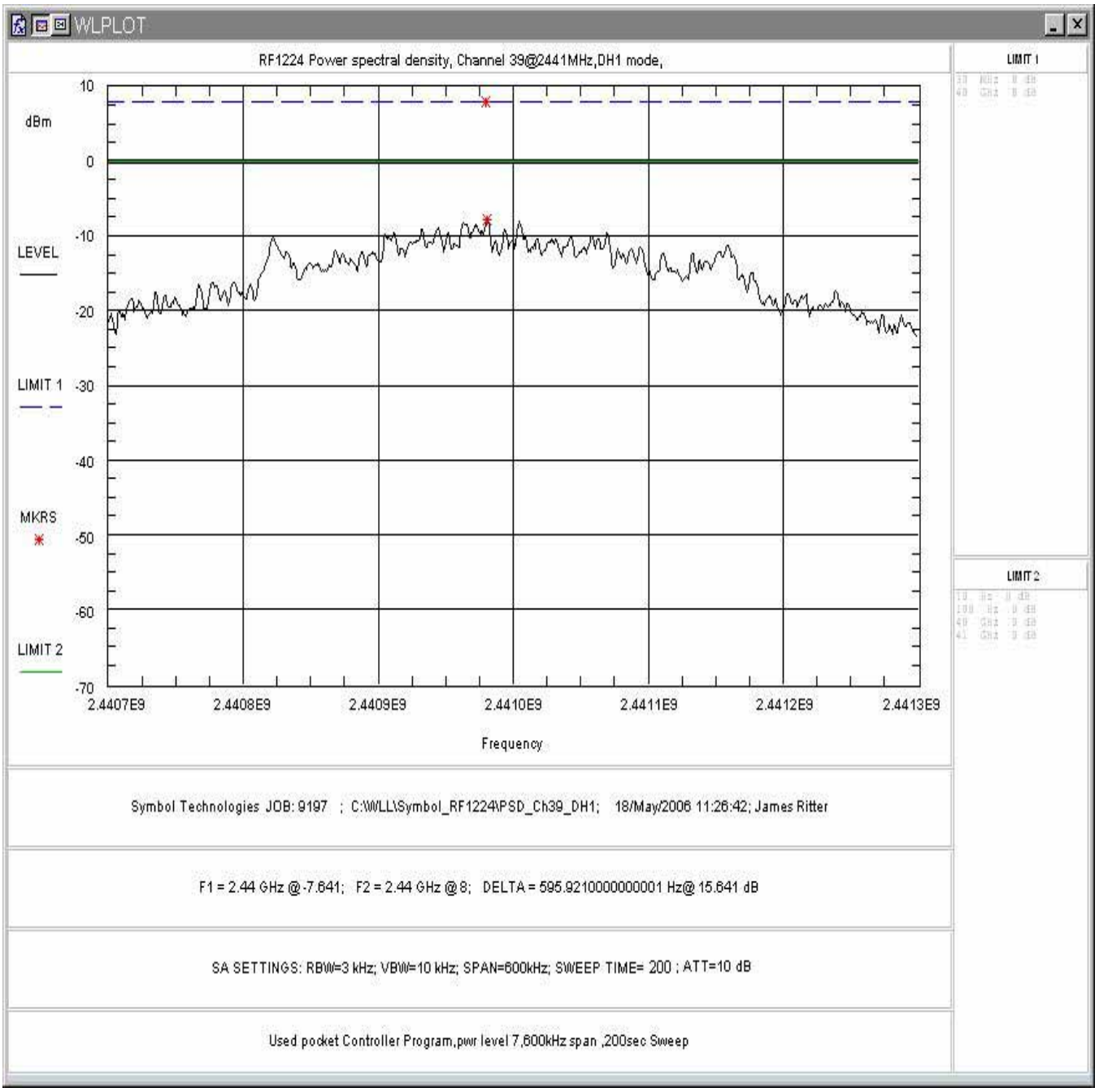

Figure 4-53. Power Spectral Density, Middle Channel, DH1 Mode

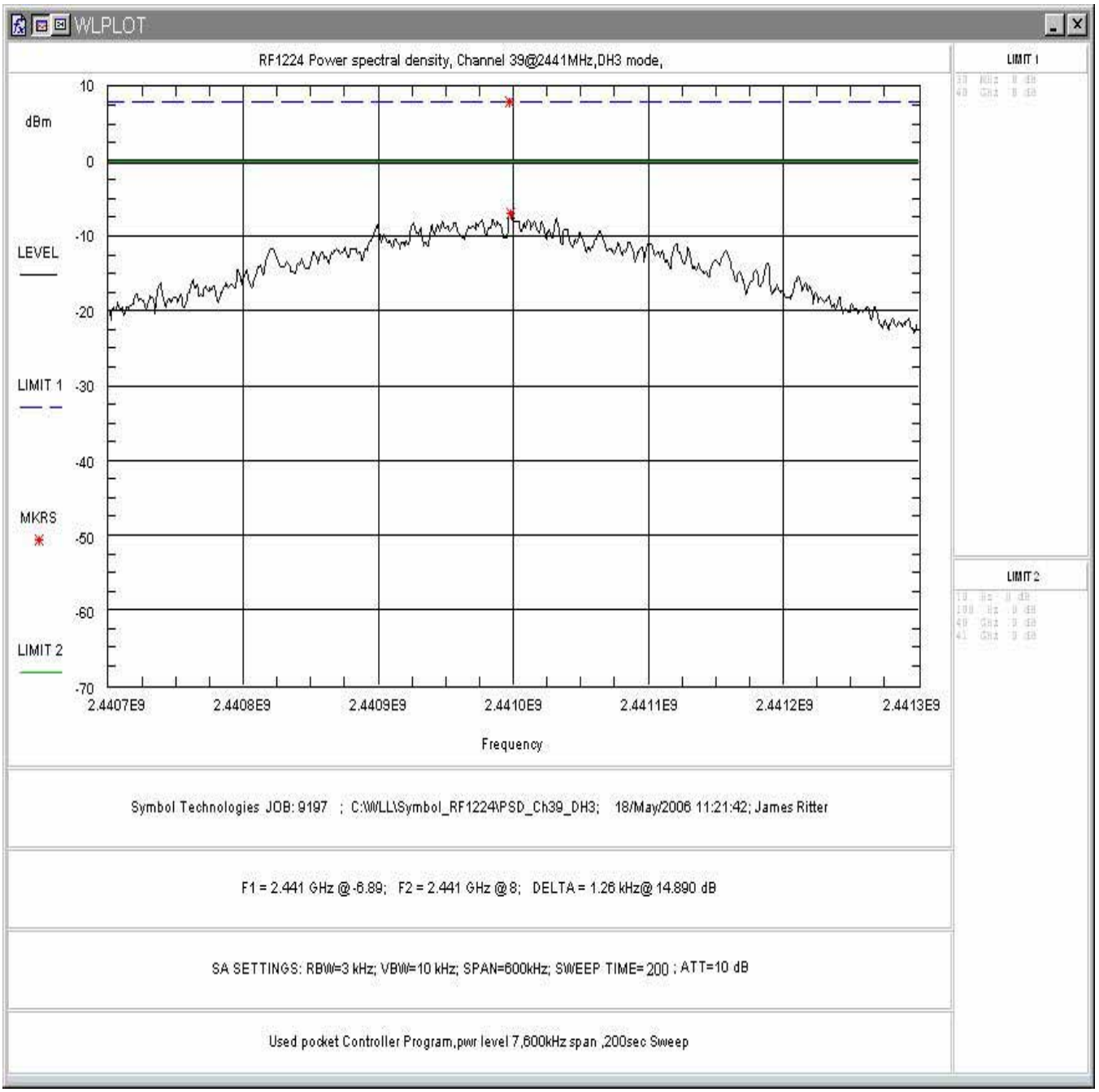

Figure 4-54. Power Spectral Density, Middle Channel, DH3 Mode

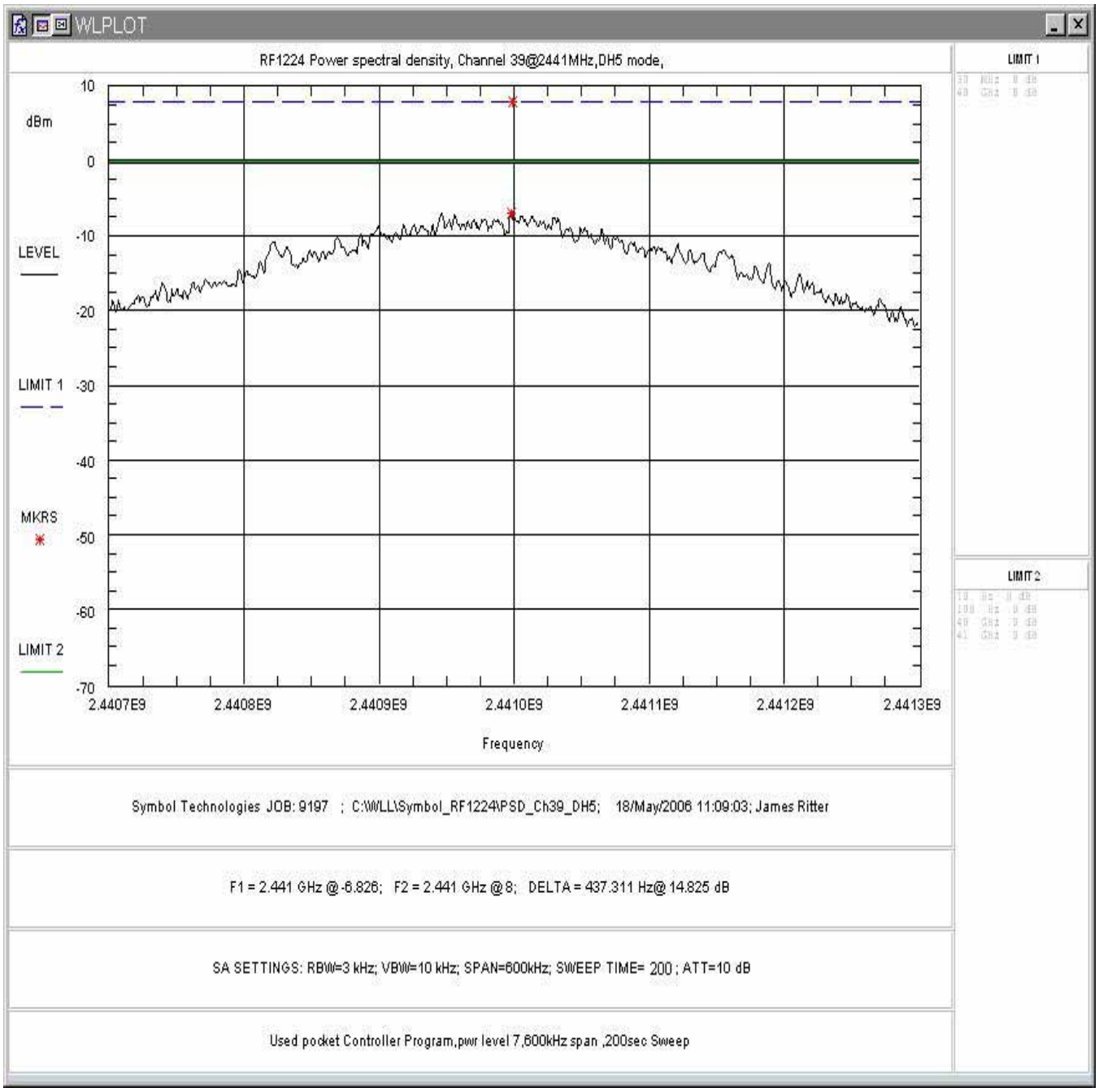

Figure 4-55. Power Spectral Density, Middle Channel, DH5 Mode

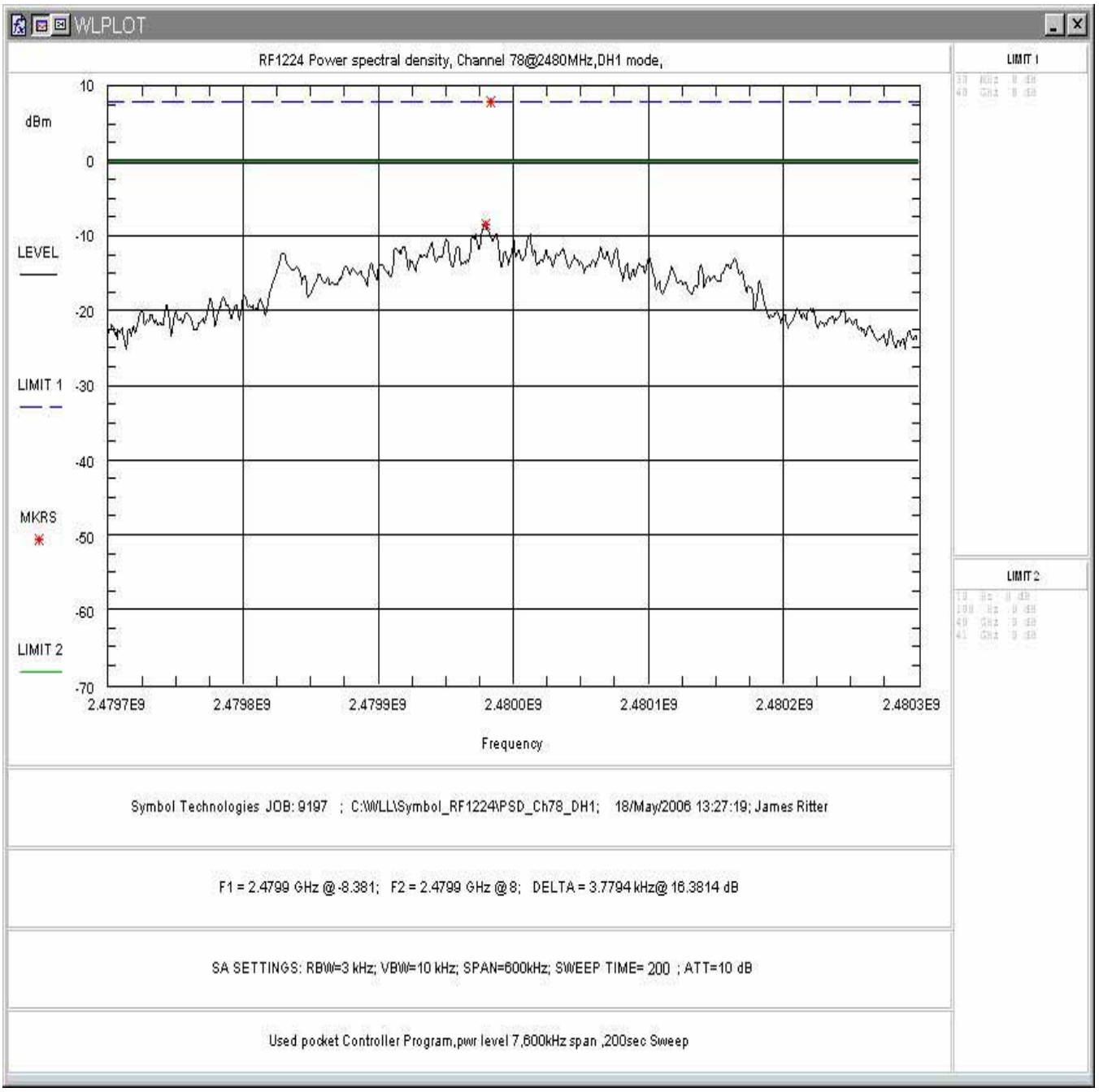

Figure 4-56. Power Spectral Density, High Channel, DH1 Mode

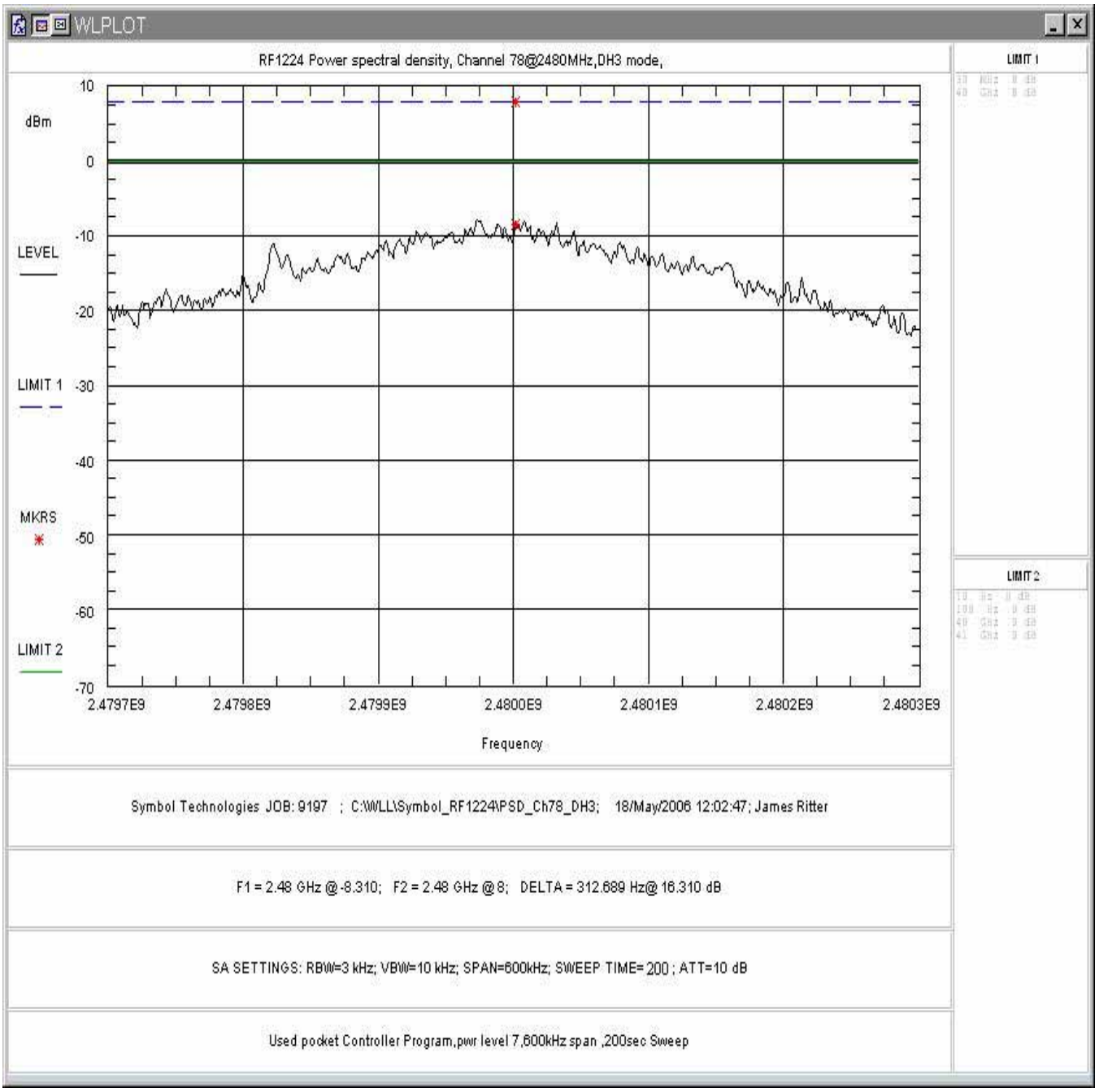

Figure 4-57. Power Spectral Density, High Channel, DH3 Mode

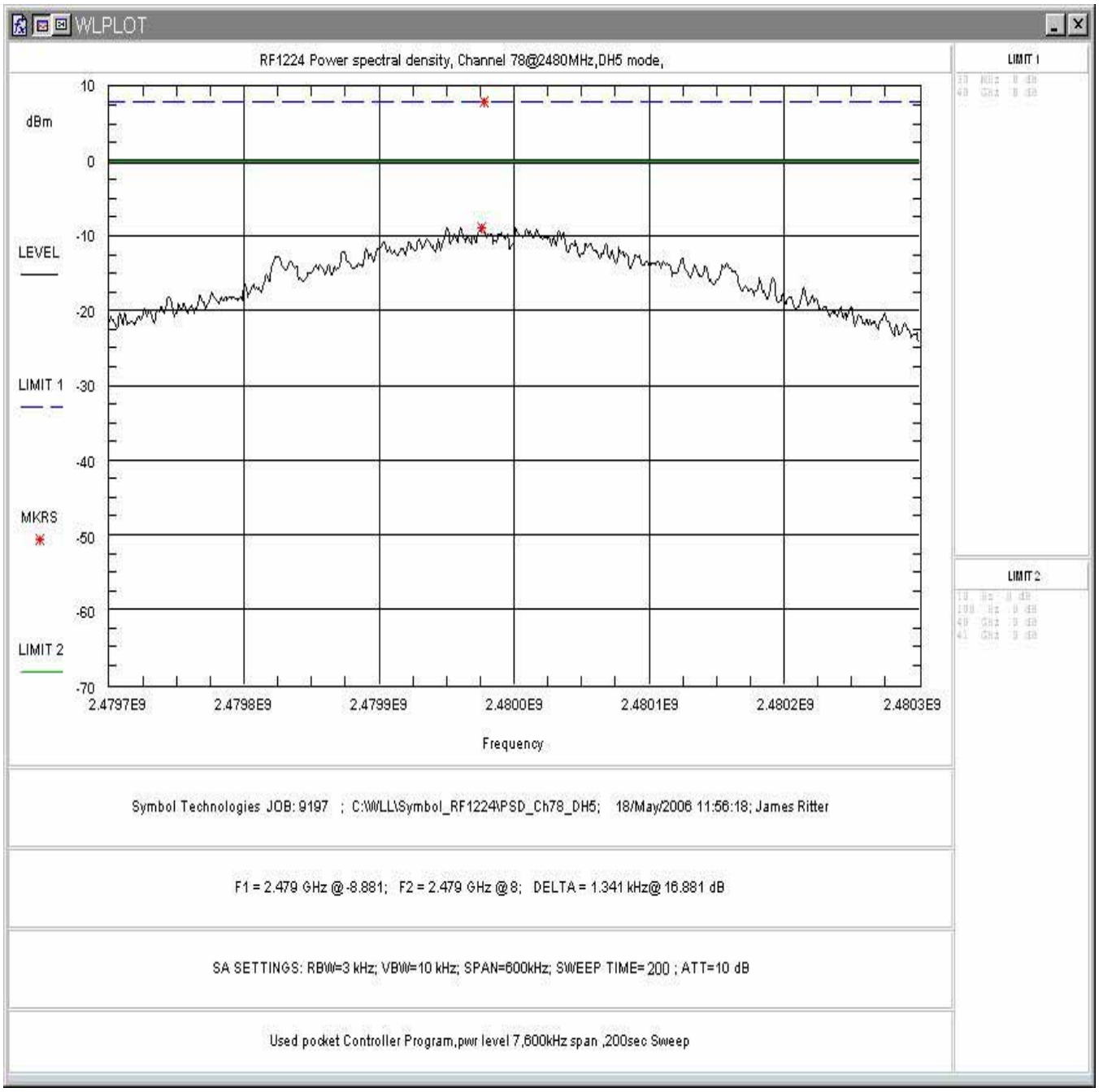

Figure 4-58. Power Spectral Density, High Channel, DH5 Mode

Table 5. RF Power Spectral Density

Frequency	Mode (Time Slot)	Level (dBm)	Limit (dBm)	Pass/Fail
2402	DH1	-8.316	8	Pass
2402	DH3	-8.163	8	Pass
2402	DH5	-7.690	8	Pass
2441	DH1	-7.641	8	Pass
2441	DH3	-6.890	8	Pass
2441	DH5	-6.826	8	Pass
2480	DH1	-8.381	8	Pass
2480	DH3	-8.310	8	Pass
2480	DH5	-8.881	8	Pass

4.7 Radiated Spurious Emissions: (FCC Part §15.247(c) and RSS-210 A8.5)

Radiated emissions that fall in the restricted bands must comply with the general emissions limits in 15.209(a) and RSS-210 Table 2.

The emissions were measured using the following resolution bandwidths:

Frequency Range	Resolution Bandwidth	Video Bandwidth
30MHz-1000 MHz	120kHz	>30 kHz
>1000 MHz	1 MHz	<30 Hz (Avg.) 1MHz (Peak)

Harmonic and Spurious emissions that were identified as coming from the EUT were checked in Peak and in Average Mode. It was verified that the peak-to-average ratio did not exceed 20dB.

Peak measurements and average measurements are made. All emissions were determined to have a peak-to-average ratio of less than 20 dB. Also, as described in FCC DA 00-705 if the dwell time per channel of the hopping signal is less than 100 ms then the average reading may be further adjusted by the duty cycle correction obtained in Section 4.1.

4.7.1 Test Procedure

The EUT was placed on motorized turntable for radiated testing on a 3-meter open field test site. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Receiving antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters. The peripherals were placed on the table in accordance with ANSI C63.4-2003. Cables were varied in position to produce maximum emissions. Both the horizontal and vertical field components were measured.

The EUT was tested in the following configurations and modes:

Channel	Frequency	Mode
1	2402	DH5
39	2441	DH3
78	2480	DH1

The following is a sample calculation used in the data tables for calculating the final field strength of spurious emissions and comparing these levels to the specified limits.

Sample Calculation:

Spectrum Analyzer Voltage (SA Level): V dBµV
Antenna Factor (Ant Corr): AFdB/m
Cable Loss Correction (Cable Corr): CCdB
Amplifier Gain: GdB
Electric Field (Corr Level): EdBµV/m = VdBµV + AFdB/m + CCdB - GdB

To convert to linear units: EμV/m = antilog (EdBμV/m/20)

Data are supplied in the following tables. Testing was performed to 25GHz. No emissions were detected above the 2nd harmonic. All detected emissions are reported in the following tables. Both peak and average measurements are listed.

Table 6. Radiated Emission Test Data, Low Frequency Data (<1GHz)

Client:	Symbol	**Date:**	6/1/2006
Tester:	James Ritter	**Job #:**	9197
EUT Information:		**Test Requirements:**	
EUT:	RF1224	TEST STANDARD:	FCC Part 15
Configuration:	Ext. RFID Ant./AC adaptor	DISTANCE:	3m
LIMIT:	LFCC_3m_Class_B		
Test Equipment (<1GHz):			
ANTENNA:	A_00557		
CABLE:	CSITE2_3m		

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght m)	SA Level (QP) dBμV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBμV/m)	Corr. Level (μV/m)	Limit (μV/m)	Margin (dB)
32.767	V	190.0	1.0	3.1	22.5	1.3	26.9	22.2	100.0	-13.1
35.335	H	90.0	3.7	6.0	21.2	1.4	28.6	26.9	100.0	-11.4
38.882	H	290.0	3.8	9.6	19.6	1.4	30.6	34.0	100.0	-9.4
38.900	V	190.0	1.0	4.8	19.6	1.4	25.8	19.5	100.0	-14.2
47.615	V	180.0	1.2	5.6	15.7	1.6	22.9	13.9	100.0	-17.1
47.615	H	45.0	3.8	6.7	15.7	1.6	24.0	15.8	100.0	-16.0
57.200	V	180.0	1.0	14.6	11.7	1.7	28.0	25.1	100.0	-12.0
57.200	H	180.0	3.6	11.6	11.7	1.7	25.0	17.8	100.0	-15.0
61.233	V	180.0	1.3	15.5	10.2	1.7	27.4	23.5	100.0	-12.6
61.233	H	45.0	3.0	17.3	10.2	1.7	29.2	28.9	100.0	-10.8
85.791	H	180.0	2.6	9.8	8.4	2.0	20.2	10.2	100.0	-19.8
85.797	V	290.0	1.2	14.0	8.4	2.0	24.4	16.5	100.0	-15.6
145.877	V	0.0	1.3	11.7	12.7	2.4	26.8	21.9	150.0	-16.7
145.877	H	270.0	3.0	5.8	12.7	2.4	20.9	11.1	150.0	-22.6
157.028	V	0.0	1.1	8.1	12.3	2.5	22.9	13.9	150.0	-20.7
157.028	H	200.0	2.0	8.3	12.3	2.5	23.1	14.2	150.0	-20.5
210.740	V	90.0	1.5	16.2	12.2	2.8	31.2	36.4	150.0	-12.3
213.900	H	180.0	3.0	12.7	12.5	2.9	28.1	25.3	150.0	-15.5
352.797	V	270.0	1.2	8.4	15.0	3.6	27.0	22.5	200.0	-19.0
352.797	H	180.0	1.4	9.4	15.0	3.6	28.0	25.2	200.0	-18.0
433.000	V	25.0	1.6	8.9	16.8	4.0	29.8	30.8	200.0	-16.3
528.000	V	180.0	3.0	4.9	17.9	4.8	27.6	23.9	200.0	-18.5
528.000	H	200.0	1.7	6.6	17.9	4.8	29.3	29.1	200.0	-16.8

Table 7. Radiated Emission Test Data, High Frequency Data (>1GHz) (Restricted Bands)

Client:	Symbol	**Date:**	5/22/2006
Tester:	John Repella	**Job #:**	9197
EUT Information:		**Test Requirements:**	
EUT:	**APEX RF1224**	TEST STANDARD:	FCC Part 15
Configuration:	Blue-Tooth Module	DISTANCE:	3m
Channel 1 2402MHz		CLASS:	B
DH5 Mode		LIMIT:	LFCC_3m_Class_B
Test Equipment (<1GHz):		**Test Equipment (>1GHz):**	
ANTENNA:	A_00428	ANTENNA:	A_00425
CABLE:	CSITE2_3m	CABLE:	CSITE2_HF
		AMPLIFIER:	A_00522

Channel 1, 2402MHz, DH5

Frequency (MHz)	Pol. H/V	Az. Deg.	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
2390.000	V	270.0	1.0	54.1	29.1	1.6	38.1	46.7	215.3	5000.0	-27.3	Peak
2390.000	V	270.0	1.0	40.9	29.1	1.6	38.1	33.5	47.3	500.0	-20.5	Avg.
2484.660	V	270.0	1.0	59.5	29.3	1.5	38.1	52.2	408.0	5000.0	-21.8	Peak
2484.660	V	270.0	1.0	48.1	29.3	1.5	38.1	40.8	109.9	500.0	-13.2	Avg.
2795.040	V	270.0	1.0	55.4	29.8	1.5	38.0	48.7	271.8	5000.0	-25.3	Amb
2795.040	V	270.0	1.0	43.9	29.8	1.5	38.0	37.2	72.1	500.0	-16.8	Amb
4806.746	V	270.0	1.0	49.5	32.8	3.5	37.2	48.7	270.9	5000.0	-25.3	Amb
4806.746	V	270.0	1.0	40.7	32.8	3.5	37.2	39.8	97.7	500.0	-14.2	Amb
12015.530	V	0.0	1.0	51.7	39.7	5.0	37.9	58.6	846.3	5000.0	-15.4	Peak
12015.530	V	0.0	1.0	42.5	39.7	5.0	37.9	49.4	293.4	500.0	-4.6	Avg.
2338.540	H	0.0	1.0	59.5	29.1	1.6	38.1	52.0	396.9	5000.0	-22.0	Peak
2338.540	H	0.0	1.0	50.3	29.1	1.6	38.1	42.8	138.4	500.0	-11.2	Avg.
2390.000	H	0.0	1.0	47.8	29.1	1.6	38.1	40.4	104.6	5000.0	-33.6	Peak
2390.000	H	0.0	1.0	37.4	29.1	1.6	38.1	30.0	31.6	500.0	-24.0	Avg.
2795.040	H	0.0	1.0	57.6	29.8	1.5	38.0	50.9	351.0	5000.0	-23.1	Amb
2795.400	H	0.0	1.0	44.4	29.8	1.5	38.0	37.7	76.4	500.0	-16.3	Amb
4806.746	H	270.0	1.0	51.5	32.8	3.5	37.2	50.6	338.2	5000.0	-23.4	Amb
4806.746	H	270.0	1.0	41.1	32.8	3.5	37.2	40.2	102.1	500.0	-13.8	Amb
	H											
12015.530	H	0.0	1.0	54.1	39.7	5.0	37.9	60.9	1109.2	5000.0	-13.1	Peak
12015.530	H	0.0	1.0	43.8	39.7	5.0	37.9	50.7	342.0	500.0	-3.3	Avg.

Channel 39, 2441MHz, DH3

Frequency (MHz)	Pol. H/V	Az. Deg.	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
4882.000	V	0.0	1.0	50.95	33.0	3.5	37.2	50.3	327.6	5000.0	-23.7	Peak
4882.000	V	0.0	1.0	40.93	33.0	3.5	37.2	40.3	103.4	500.0	-13.7	Avg.
7323.170	V	0.0	1.0	51.66	36.9	4.5	37.6	55.5	596.2	5000.0	-18.5	Amb
7323.170	V	0.0	1.0	43.12	36.9	4.5	37.6	47.0	223.0	500.0	-7.0	Amb
12205.727	V	0.0	1.0	48.65	39.8	5.2	37.5	56.1	638.9	5000.0	-17.9	Amb
12205.727	V	0.0	1.0	39.98	39.8	5.2	37.5	47.4	235.5	500.0	-6.5	Amb
4882.000	H	270.0	1.0	52.38	33.0	3.5	37.2	51.7	386.3	5000.0	-22.2	Peak
4881.700	H	270.0	1.0	41.99	33.0	3.5	37.2	41.3	116.8	500.0	-12.6	Avg.
7322.377	H	0.0	1.0	48.33	36.9	4.5	37.6	52.2	406.2	5000.0	-21.8	Amb
7322.377	H	0.0	1.0	39.17	36.9	4.5	37.6	43.0	141.4	500.0	-11.0	Amb
12205.727	H	0.0	1.0	47.57	39.8	5.2	37.5	55.0	564.2	5000.0	-19.0	Amb
12205.727	H	0.0	1.0	39.70	39.8	5.2	37.5	47.2	228.0	500.0	-6.8	Amb

Channel 78, 2480MHz, DH1

Frequency (MHz)	Pol. H/V	Az. Deg.	Ant. Height (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
4960.000	V	180.0	1.0	51.60	33.2	3.6	37.2	51.2	362.4	5000.0	-22.8	Peak
4960.050	V	180.0	1.0	45.61	33.2	3.6	37.2	45.2	181.9	500.0	-8.8	Avg.
4963.780	V	180.0	1.0	49.24	33.2	3.6	37.2	48.8	276.6	5000.0	-25.1	Peak
4963.780	V	180.0	1.0	39.31	33.2	3.6	37.2	38.9	88.2	500.0	-15.1	Avg.
7440.000	V	0.0	1.0	50.30	37.0	4.8	37.6	54.5	531.8	5000.0	-19.5	Amb
7440.000	V	0.0	1.0	40.29	37.0	4.8	37.6	44.5	168.0	500.0	-9.5	Amb
12399.980	V	0.0	1.0	51.72	39.8	5.3	37.1	59.8	976.1	5000.0	-14.2	Amb
12399.980	V	0.0	1.0	40.06	39.8	5.3	37.1	48.1	255.0	500.0	-5.8	Amb
4960.000	H	180.0	1.0	47.15	33.2	3.6	37.2	46.7	217.1	5000.0	-27.2	Peak
4960.000	H	180.0	1.0	40.20	33.2	3.6	37.2	39.8	97.6	500.0	-14.2	Avg.
4963.800	H	180.0	1.0	45.22	33.2	3.6	37.2	44.8	174.1	5000.0	-29.2	Peak
4963.800	H	180.0	1.0	38.88	33.2	3.6	37.2	38.5	83.9	500.0	-15.5	Avg.
7440.000	H	0.0	1.0	44.83	37.0	4.8	37.6	49.0	283.3	5000.0	-24.9	Amb
7440.000	H	0.0	1.0	34.16	37.0	4.8	37.6	38.4	82.9	500.0	-15.6	Amb
12399.980	H	0.0	1.0	45.47	39.8	5.3	37.1	53.5	475.3	5000.0	-20.4	Amb
12399.980	H	0.0	1.0	34.39	39.8	5.3	37.1	42.5	132.7	500.0	-11.5	Amb

5 Test Results (RFID Transmitter)

The Symbol Technologies APEX RF1224 contains an already approved RFID device (FCC ID NTTWJMPR7XXX). The antenna, however, has been changed for the APEX configuration and the radiated spurious emissions have been re-done. The APEX RF1224 has available two panel antenna configurations. One panel is located on the device itself while one is external and mounted away from the unit. For radiated emissions testing the external antenna was used as it has the highest gain at 6dBi. For the collocation testing the integral panel antenna was used since it is the one that is mounted within 20cm of the other transmitters.

5.1 Radiated Spurious Emissions: (FCC Part §15.247(c) and RSS-210 A8.5)

Radiated emissions that fall in the restricted bands must comply with the general emissions limits in 15.209(a) and RSS-210 Table 2.

The emissions were measured using the following resolution bandwidths:

Frequency Range	Resolution Bandwidth	Video Bandwidth
30MHz-1000 MHz	120kHz	>30 kHz
>1000 MHz	1 MHz	<30 Hz (Avg.) 1MHz (Peak)

Harmonic and Spurious emissions that were identified as coming from the EUT were checked in Peak and in Average Mode. It was verified that the peak-to-average ratio did not exceed 20dB.

5.1.1 Test Procedure

The EUT was placed on motorized turntable for radiated testing on a 3-meter open field test site. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Receiving antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters. The peripherals were placed on the table in accordance with ANSI C63.4-2003. Cables were varied in position to produce maximum emissions. Both the horizontal and vertical field components were measured.

The following is a sample calculation used in the data tables for calculating the final field strength of spurious emissions and comparing these levels to the specified limits.

Sample Calculation:

Spectrum Analyzer Voltage (SA Level):	V dBµV
Antenna Factor (Ant Corr):	AFdB/m
Cable Loss Correction (Cable Corr):	CCdB
Amplifier Gain:	GdB
Electric Field (Corr Level):	EdBµV/m = VdBµV + AFdB/m + CCdB - GdB
To convert to linear units:	EµV/m = antilog (EdBµV/m/20)

Data are supplied in the following tables. Testing was performed to 9.3 GHz. No emissions were detected above the approximately 3.7GHz. All detected emissions are reported in the following tables. Both peak and average measurements are listed.

Table 8. Radiated Spurious Emissions, RFID Device, Restricted Bands

Client:	Symbol	**Date:**	5/24/2006
Tester:	John Repella	**Job #:**	9197
EUT Information:		**Test Requirements:**	
EUT:	APEX RF1224	TEST STANDARD:	FCC Part 15
Configuration:	RFID Module, external ant	DISTANCE:	3m
		CLASS:	B
Test Equipment (<1GHz):		**Test Equipment (>1GHz):**	
ANTENNA:	A_00428	ANTENNA:	A_00425
CABLE:	CSITE2_3m	CABLE:	CSITE2_HF
AMPLIFIER:	A_00522		

C0 Modulation, Low Channel

Frequency (MHz)	Pol H/V	Az Degree	Ant. Height (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
2250.000	V	135.0	1.0	40.73	28.9	1.6	38.1	33.1	44.9	500.0	-20.9	
2708.278	V	180.0	1.0	42.32	29.7	1.5	38.1	35.5	59.3	500.0	-18.5	
3611.041	V	0.0	1.0	35.94	30.5	2.5	37.5	31.4	37.2	500.0	-22.6	Amb
4513.804	V	0.0	1.0	34.92	32.1	3.3	37.2	33.2	45.5	500.0	-20.8	Amb
5416.567	V	0.0	1.0	34.97	33.8	3.8	37.2	35.4	58.7	500.0	-18.6	Amb
8124.856	V	0.0	1.0	34.52	37.4	6.1	37.7	40.3	103.5	500.0	-13.7	Amb
9027.619	V	0.0	1.0	35.99	38.0	4.8	37.8	41.0	112.3	500.0	-13.0	Amb
2250.000	H	135.0	1.0	39.52	28.9	1.6	38.1	31.8	39.1	500.0	-22.1	
2708.278	H	180.0	1.0	38.56	29.7	1.5	38.1	31.7	38.5	500.0	-22.3	
3611.041	H	0.0	1.0	33.91	30.5	2.5	37.5	29.4	29.4	500.0	-24.6	Amb
4513.804	H	0.0	1.0	35.70	32.1	3.3	37.2	33.9	49.7	500.0	-20.0	Amb
5416.567	H	0.0	1.0	35.73	33.8	3.8	37.2	36.1	64.1	500.0	-17.8	Amb
8124.856	H	0.0	1.0	35.12	37.4	6.1	37.7	40.9	110.9	500.0	-13.1	Amb
9027.619	H	0.0	1.0	34.70	38.0	4.8	37.8	39.7	96.8	500.0	-14.3	Amb
				PEAK								
2250.000	V	135.0	1.0	48.21	28.9	1.6	38.1	40.5	106.3	5000.0	-33.4	
2708.278	V	180.0	1.0	48.73	29.7	1.5	38.1	41.9	124.1	5000.0	-32.1	
3611.041	V	0.0	1.0	46.87	30.5	2.5	37.5	42.3	130.9	5000.0	-31.6	Amb
4513.804	V	0.0	1.0	46.00	32.1	3.3	37.2	44.2	162.8	5000.0	-29.7	Amb
5416.567	V	0.0	1.0	44.44	33.8	3.8	37.2	44.8	174.6	5000.0	-29.1	Amb
8124.856	V	0.0	1.0	45.85	37.4	6.1	37.7	51.6	381.6	5000.0	-22.3	Amb
9027.619	V	0.0	1.0	45.99	38.0	4.8	37.8	51.0	355.2	5000.0	-23.0	Amb
2250.000	H	135.0	1.0	47.86	28.9	1.6	38.1	40.2	102.1	5000.0	-33.8	
2708.278	H	180.0	1.0	46.54	29.7	1.5	38.1	39.7	96.4	5000.0	-34.3	
3611.041	H	0.0	1.0	46.67	30.5	2.5	37.5	42.1	127.9	5000.0	-31.8	Amb
4513.804	H	0.0	1.0	45.01	32.1	3.3	37.2	43.2	145.3	5000.0	-30.7	Amb
5416.567	H	0.0	1.0	45.92	33.8	3.8	37.2	46.3	207.1	5000.0	-27.7	Amb
8124.856	H	0.0	1.0	46.27	37.4	6.1	37.7	52.1	400.5	5000.0	-21.9	Amb
9027.619	H	0.0	1.0	46.23	38.0	4.8	37.8	51.3	365.2	5000.0	-22.7	Amb

C0 Modulation, Mid Channel

Frequency (MHz)	Pol H/V	Az Degree	Ant. Height (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
2250.000	V	135.0	1.0	41.51	28.9	1.6	38.1	33.8	49.2	500.0	-20.1	
2744.261	V	180.0	1.0	40.41	29.7	1.5	38.0	33.6	47.9	500.0	-20.4	
3659.011	V	0.0	1.0	35.94	30.5	2.5	37.4	31.5	37.8	500.0	-22.4	Amb
4573.761	V	0.0	1.0	34.54	32.3	3.4	37.2	33.0	44.5	500.0	-21.0	Amb
5490.000	V	0.0	1.0	34.97	33.8	3.8	37.2	35.4	58.7	500.0	-18.6	Amb
8235.000	V	0.0	1.0	34.52	37.4	6.1	37.7	40.3	103.5	500.0	-13.7	Amb
9150.000	V	0.0	1.0	35.99	38.0	4.8	37.8	41.0	112.3	500.0	-13.0	Amb
2250.000	H	135.0	1.0	40.56	28.9	1.6	38.1	32.9	44.1	500.0	-21.1	
2744.261	H	180.0	1.0	43.78	29.7	1.5	38.0	37.0	70.7	500.0	-17.0	
3659.011	H	0.0	1.0	36.64	30.5	2.5	37.4	32.2	40.9	500.0	-21.7	Amb
4573.761	H	0.0	1.0	34.91	32.3	3.4	37.2	33.3	46.4	500.0	-20.6	Amb
5490.000	H	0.0	1.0	35.73	33.8	3.8	37.2	36.1	64.1	500.0	-17.8	Amb
8235.000	H	0.0	1.0	35.12	37.4	6.1	37.7	40.9	110.9	500.0	-13.1	Amb
9150.000	H	0.0	1.0	34.70	38.0	4.8	37.8	39.7	96.8	500.0	-14.3	Amb
				PEAK								
2250.000	V	135.0	1.0	48.02	28.9	1.6	38.1	40.3	104.0	5000.0	-33.6	
2744.261	V	180.0	1.0	50.06	29.7	1.5	38.0	43.3	145.6	5000.0	-30.7	
3659.011	V	0.0	1.0	46.87	30.5	2.5	37.4	42.5	132.9	5000.0	-31.5	Amb
4573.761	V	0.0	1.0	46.01	32.3	3.4	37.2	44.4	166.6	5000.0	-29.5	Amb
5490.000	V	0.0	1.0	44.44	33.8	3.8	37.2	44.8	174.6	5000.0	-29.1	Amb
8235.000	V	0.0	1.0	45.85	37.4	6.1	37.7	51.6	381.6	5000.0	-22.3	Amb
9150.000	V	0.0	1.0	45.99	38.0	4.8	37.8	51.0	355.2	5000.0	-23.0	Amb
2250.000	H	135.0	1.0	47.80	28.9	1.6	38.1	40.1	101.4	5000.0	-33.9	
2744.261	H	180.0	1.0	51.87	29.7	1.5	38.0	45.1	179.4	5000.0	-28.9	
3659.011	H	0.0	1.0	45.89	30.5	2.5	37.4	41.5	118.7	5000.0	-32.5	Amb
4573.761	H	0.0	1.0	45.76	32.3	3.4	37.2	44.2	161.8	5000.0	-29.8	Amb
5490.000	H	0.0	1.0	45.92	33.8	3.8	37.2	46.3	207.1	5000.0	-27.7	Amb
8235.000	H	0.0	1.0	46.27	37.4	6.1	37.7	52.1	400.5	5000.0	-21.9	Amb
9150.000	H	0.0	1.0	46.23	38.0	4.8	37.8	51.3	365.2	5000.0	-22.7	Amb

C0 Modulation, High Channel

Frequency (MHz)	Pol H/V	Az Degree	Ant. Height (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
2250.000	V	135.0	1.0	41.51	28.9	1.6	38.1	33.8	49.2	500.0	-20.1	
2781.873	V	180.0	1.0	42.96	29.8	1.5	38.0	36.2	64.8	500.0	-17.8	
3709.000	V	0.0	1.0	34.11	30.5	2.6	37.4	29.8	31.1	500.0	-24.1	
4636.450	V	0.0	1.0	33.67	32.4	3.4	37.2	32.3	41.2	500.0	-21.7	Amb
2250.000	H	135.0	1.0	36.05	28.9	1.6	38.1	28.4	26.2	500.0	-25.6	
2781.873	H	180.0	1.0	42.61	29.8	1.5	38.0	35.9	62.2	500.0	-18.1	
3709.000	H	0.0	1.0	34.15	30.5	2.6	37.4	29.9	31.2	500.0	-24.1	
4636.450	H	0.0	1.0	33.52	32.4	3.4	37.2	32.1	40.4	500.0	-21.8	Amb
				PEAK								
2250.000	V	135.0	1.0	48.02	28.9	1.6	38.1	40.3	104.0	5000.0	-33.6	
2781.873	V	180.0	1.0	50.17	29.8	1.5	38.0	43.4	148.5	5000.0	-30.5	
3709.000	V	0.0	1.0	45.97	30.5	2.6	37.4	41.7	121.7	5000.0	-32.3	
4636.450	V	0.0	1.0	44.69	32.4	3.4	37.2	43.3	146.3	5000.0	-30.7	Amb
2250.000	H	135.0	1.0	47.61	28.9	1.6	38.1	39.9	99.2	5000.0	-34.0	
2781.873	H	180.0	1.0	50.60	29.8	1.5	38.0	43.9	156.0	5000.0	-30.1	
3709.000	H	0.0	1.0	46.04	30.5	2.6	37.4	41.8	122.7	5000.0	-32.2	
4636.450	H	0.0	1.0	45.39	32.4	3.4	37.2	44.0	158.6	5000.0	-30.0	Amb

C1 Modulation, Low Channel

Frequency (MHz)	Pol H/V	Az Degree	Ant. Height (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
2250.000	V	90.0	1.0	40.56	28.9	1.6	38.1	32.9	44.1	500.0	-21.1	
2708.278	V	180.0	1.0	41.57	29.7	1.5	38.1	34.7	54.4	500.0	-19.3	
3611.041	V	0.0	1.0	34.72	30.5	2.5	37.5	30.2	32.3	500.0	-23.8	Amb
4513.804	V	0.0	1.0	35.76	32.1	3.3	37.2	34.0	50.1	500.0	-20.0	Amb
5416.567	V	0.0	1.0	33.89	33.8	3.8	37.2	34.3	51.8	500.0	-19.7	Amb
8124.856	V	0.0	1.0	34.56	37.4	6.1	37.7	40.3	104.0	500.0	-13.6	Amb
9027.619	V	0.0	1.0	35.65	38.0	4.8	37.8	40.7	108.0	500.0	-13.3	Amb
2250.000	H	135.0	1.0	39.52	28.9	1.6	38.1	31.8	39.1	500.0	-22.1	
2708.278	H	180.0	1.0	43.42	29.7	1.5	38.1	36.6	67.3	500.0	-17.4	
3611.041	H	0.0	1.0	33.89	30.5	2.5	37.5	29.4	29.4	500.0	-24.6	Amb
4513.804	H	0.0	1.0	35.53	32.1	3.3	37.2	33.8	48.8	500.0	-20.2	Amb
5416.567	H	0.0	1.0	35.47	33.8	3.8	37.2	35.9	62.2	500.0	-18.1	Amb
8124.856	H	0.0	1.0	35.41	37.4	6.1	37.7	41.2	114.7	500.0	-12.8	Amb
9027.619	H	0.0	1.0	34.25	38.0	4.8	37.8	39.3	91.9	500.0	-14.7	Amb
				PEAK								
2250.000	V	90.0	1.0	47.34	28.9	1.6	38.1	39.7	96.2	5000.0	-34.3	
2708.278	V	180.0	1.0	47.75	29.7	1.5	38.1	40.9	110.9	5000.0	-33.1	
3611.041	V	0.0	1.0	45.01	30.5	2.5	37.5	40.5	105.7	5000.0	-33.5	Amb
4513.804	V	0.0	1.0	45.68	32.1	3.3	37.2	43.9	156.9	5000.0	-30.1	Amb
5416.567	V	0.0	1.0	44.52	33.8	3.8	37.2	44.9	176.2	5000.0	-29.1	Amb
8124.856	V	0.0	1.0	45.68	37.4	6.1	37.7	51.5	374.2	5000.0	-22.5	Amb
9027.619	V	0.0	1.0	45.53	38.0	4.8	37.8	50.6	336.9	5000.0	-23.4	Amb
2250.000	H	135.0	1.0	47.86	28.9	1.6	38.1	40.2	102.1	5000.0	-33.8	
2708.278	H	180.0	1.0	50.42	29.7	1.5	38.1	43.6	150.8	5000.0	-30.4	
3611.041	H	0.0	1.0	45.85	30.5	2.5	37.5	41.3	116.4	5000.0	-32.7	Amb
4513.804	H	0.0	1.0	44.89	32.1	3.3	37.2	43.1	143.3	5000.0	-30.9	Amb
5416.567	H	0.0	1.0	45.89	33.8	3.8	37.2	46.3	206.4	5000.0	-27.7	Amb
8124.856	H	0.0	1.0	46.72	37.4	6.1	37.7	52.5	421.8	5000.0	-21.5	Amb
9027.619	H	0.0	1.0	45.63	38.0	4.8	37.8	50.7	340.8	5000.0	-23.3	Amb

C1 Modulation, Mid Channel

Frequency (MHz)	Pol H/V	Az Degree	Ant. Height (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
2250.000	V	135.0	1.0	41.51	28.9	1.6	38.1	33.8	49.2	500.0	-20.1	
2744.261	V	180.0	1.0	42.96	29.7	1.5	38.0	36.2	64.3	500.0	-17.8	
3659.011	V	0.0	1.0	34.11	30.5	2.5	37.4	29.7	30.6	500.0	-24.3	Amb
4573.761	V	0.0	1.0	33.87	32.3	3.4	37.2	32.3	41.2	500.0	-21.7	Amb
5490.000	V	0.0	1.0	35.47	33.8	3.8	37.2	35.9	62.2	500.0	-18.1	Amb
8235.000	V	0.0	1.0	35.41	37.4	6.1	37.7	41.2	114.7	500.0	-12.8	Amb
9150.000	V	0.0	1.0	34.25	38.0	4.8	37.8	39.3	91.9	500.0	-14.7	Amb
2250.000	H	135.0	1.0	35.91	28.9	1.6	38.1	28.2	25.8	500.0	-25.7	
2744.261	H	180.0	1.0	46.19	29.7	1.5	38.0	39.4	93.3	500.0	-14.6	
3659.011	H	0.0	1.0	34.10	30.5	2.5	37.4	29.7	30.6	500.0	-24.3	Amb
4573.761	H	0.0	1.0	33.14	32.3	3.4	37.2	31.6	37.9	500.0	-22.4	Amb
5490.000	H	0.0	1.0	35.47	33.8	3.8	37.2	35.9	62.2	500.0	-18.1	Amb
8235.000	H	0.0	1.0	35.41	37.4	6.1	37.7	41.2	114.7	500.0	-12.8	Amb
9150.000	H	0.0	1.0	34.25	38.0	4.8	37.8	39.3	91.9	500.0	-14.7	Amb
				PEAK								
2250.000	V	135.0	1.0	48.02	28.9	1.6	38.1	40.3	104.0	5000.0	-33.6	
2744.261	V	180.0	1.0	50.17	29.7	1.5	38.0	43.4	147.5	5000.0	-30.6	
3659.011	V	0.0	1.0	45.97	30.5	2.5	37.4	41.6	119.8	5000.0	-32.4	Amb
4573.761	V	0.0	1.0	44.83	32.3	3.4	37.2	43.3	145.4	5000.0	-30.7	Amb
5490.000	V	0.0	1.0	45.89	33.8	3.8	37.2	46.3	206.4	5000.0	-27.7	Amb
8235.000	V	0.0	1.0	46.72	37.4	6.1	37.7	52.5	421.8	5000.0	-21.5	Amb
9150.000	V	0.0	1.0	45.63	38.0	4.8	37.8	50.7	340.8	5000.0	-23.3	Amb
2250.000	H	135.0	1.0	48.83	28.9	1.6	38.1	41.2	114.2	5000.0	-32.8	
2744.261	H	180.0	1.0	52.66	29.7	1.5	38.0	45.9	196.4	5000.0	-28.1	
3659.011	H	0.0	1.0	46.04	30.5	2.5	37.4	41.6	120.8	5000.0	-32.3	Amb
4573.761	H	0.0	1.0	45.45	32.3	3.4	37.2	43.9	156.2	5000.0	-30.1	Amb
5490.000	H	0.0	1.0	45.89	33.8	3.8	37.2	46.3	206.4	5000.0	-27.7	Amb
8235.000	H	0.0	1.0	46.72	37.4	6.1	37.7	52.5	421.8	5000.0	-21.5	Amb
9150.000	H	0.0	1.0	45.63	38.0	4.8	37.8	50.7	340.8	5000.0	-23.3	Amb

C1 Modulation, High Channel

Frequency (MHz)	Pol H/V	Az Degree	Ant. Height (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
2250.000	V	135.0	1.0	35.39	28.9	1.6	38.1	27.7	24.3	500.0	-26.3	
2781.806	V	180.0	1.0	41.19	29.8	1.5	38.0	34.5	52.8	500.0	-19.5	
3709.096	V	0.0	1.0	34.15	30.5	2.6	37.4	29.9	31.2	500.0	-24.1	
4636.386	V	0.0	1.0	33.39	32.4	3.4	37.2	32.0	39.8	500.0	-22.0	Amb
2250.000	H	135.0	1.0	36.06	28.9	1.6	38.1	28.4	26.3	500.0	-25.6	
2781.748	H	180.0	1.0	44.16	29.8	1.5	38.0	37.4	74.3	500.0	-16.6	
3709.038	H	0.0	1.0	34.34	30.5	2.6	37.4	30.1	31.9	500.0	-23.9	
4636.353	H	0.0	1.0	33.41	32.4	3.4	37.2	32.0	39.9	500.0	-22.0	Amb
				PEAK								
2250.000	V	135.0	1.0	46.77	28.9	1.6	38.1	39.1	90.1	5000.0	-34.9	
2781.806	V	180.0	1.0	48.75	29.8	1.5	38.0	42.0	126.1	5000.0	-32.0	
3709.096	V	0.0	1.0	45.74	30.5	2.6	37.4	41.5	118.6	5000.0	-32.5	
4636.386	V	0.0	1.0	46.11	32.4	3.4	37.2	44.7	172.3	5000.0	-29.3	Amb
2250.000	H	135.0	1.0	48.04	28.9	1.6	38.1	40.4	104.3	5000.0	-33.6	
2781.748	H	180.0	1.0	50.17	29.8	1.5	38.0	43.4	148.5	5000.0	-30.5	
3709.038	H	0.0	1.0	46.36	30.5	2.6	37.4	42.1	127.3	5000.0	-31.9	
4636.353	H	0.0	1.0	45.33	32.4	3.4	37.2	43.9	157.5	5000.0	-30.0	Amb

6 Test Results (WLAN 802.11 Transmitter)

The Symbol Technologies APEX RF1224 contains an already approved 802.11 WLAN device (FCC ID H9P2121160). The antenna, however, has been changed for the APEX configuration and the radiated spurious emissions have been re-done.

6.1 Radiated Spurious Emissions: (FCC Part §15.247(c) and RSS-210 A8.5)

Radiated emissions that fall in the restricted bands must comply with the general emissions limits in 15.209(a) and RSS-210 Table 2.

The emissions were measured using the following resolution bandwidths:

Frequency Range	Resolution Bandwidth	Video Bandwidth
30MHz-1000 MHz	120kHz	>30 kHz
>1000 MHz	1 MHz	<30 Hz (Avg.) 1MHz (Peak)

Harmonic and Spurious emissions that were identified as coming from the EUT were checked in Peak and in Average Mode. It was verified that the peak-to-average ratio did not exceed 20dB.

6.1.1 Test Procedure

The EUT was placed on motorized turntable for radiated testing on a 3-meter open field test site. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Receiving antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters. Both the horizontal and vertical field components were measured. The following chart lists the modes in which the radiated emissions testing was performed.

Mode	Channel (MHz)	Data Rate (Mbps)
802.11g	2412	6
	2437	6
	2462	6
802.11b	2412	11
	2437	11
	2462	11
802.11a	5180	6
	5240	6
	5260	6
	5320	6
	5745	6
	5785	6
	5805	6
	5825	6

The following is a sample calculation used in the data tables for calculating the final field strength of spurious emissions and comparing these levels to the specified limits.

Sample Calculation:

Spectrum Analyzer Voltage (SA Level):	V dBμV
Antenna Factor (Ant Corr):	AFdB/m
Cable Loss Correction (Cable Corr):	CCdB
Amplifier Gain:	GdB
Electric Field (Corr Level):	EdBμV/m = VdBμV + AFdB/m + CCdB - GdB
To convert to linear units:	EμV/m = antilog (EdBμV/m/20)

Data are supplied in the following tables. Testing was performed to 40GHz. No emissions were detected above the approximately 5GHz. All detected emissions are reported in the following tables. Both peak and average measurements are listed.

Table 9. Radiated Spurious Emissions, WLAN Device

Client:	Symbol	**Date:**	5/23/06 – 5/25/06
Tester:	John Repella	**Job #:**	9197
EUT Information:		**Test Requirements:**	
EUT:	APEX RF1224	TEST STANDARD:	FCC Part 15
Configuration:	802.11g	DISTANCE:	3m
CLASS:	B		
Test Equipment (<1GHz):		**Test Equipment (>1GHz):**	
ANTENNA:	A_00428	ANTENNA:	A_00425
CABLE:	CSITE2_3m	CABLE:	CSITE2_HF
AMPLIFIER:	A_00522		

802.11g, Channel 1, 2412M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
4824.000	V	0.0	1.0	33.09	32.9	3.5	37.2	32.3	41.1	500.0	-21.7	Amb
12060.080	V	0.0	1.0	33.20	39.7	5.0	37.8	40.2	102.3	500.0	-13.8	
14472.080	V	0.0	1.0	30.71	41.1	6.2	36.9	41.0	112.8	500.0	-12.9	Amb
4824.000	H	0.0	1.0	33.27	32.9	3.5	37.2	32.5	42.0	500.0	-21.5	Amb
12060.080	H	0.0	1.0	32.21	39.7	5.0	37.8	39.2	91.2	500.0	-14.8	
14472.080	H	0.0	1.0	32.16	41.1	6.2	36.9	42.5	133.3	500.0	-11.5	Amb
				PEAK								
4824.000	V	0.0	1.0	44.03	32.9	3.5	37.2	43.2	144.8	5000.0	-30.8	Amb
12060.080	V	0.0	1.0	43.59	39.7	5.0	37.8	50.6	338.2	5000.0	-23.4	
14472.080	V	0.0	1.0	43.90	41.1	6.2	36.9	54.2	514.9	5000.0	-19.7	Amb
4824.000	H	0.0	1.0	43.41	32.9	3.5	37.2	42.6	134.8	5000.0	-31.4	Amb
12060.080	H	0.0	1.0	43.73	39.7	5.0	37.8	50.7	343.7	5000.0	-23.3	
14472.080	H	0.0	1.0	42.72	41.1	6.2	36.9	53.1	449.5	5000.0	-20.9	Amb

802.11g, Channel 6, 2437M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
4874.000	V	0.0	1.0	34.45	33.0	3.5	37.2	33.8	48.9	500.0	-20.2	Amb
7311.000	V	0.0	1.0	33.24	36.9	4.5	37.6	37.0	71.2	500.0	-16.9	Amb
12185.000	V	0.0	1.0	32.88	39.8	5.2	37.5	40.3	103.2	500.0	-13.7	Amb
4874.000	H	0.0	1.0	34.19	33.0	3.5	37.2	33.5	47.4	500.0	-20.5	Amb
7311.000	H	0.0	1.0	33.38	36.9	4.5	37.6	37.2	72.4	500.0	-16.8	Amb
12185.000	H	0.0	1.0	33.02	39.8	5.2	37.5	40.4	104.9	500.0	-13.6	Amb
4874.000	V	0.0	1.0	34.45	33.0	3.5	37.2	33.8	48.9	500.0	-20.2	Amb
				PEAK								
4874.000	V	0.0	1.0	43.47	33.0	3.5	37.2	42.8	138.1	5000.0	-31.2	Amb
7311.000	V	0.0	1.0	43.74	36.9	4.5	37.6	47.5	238.5	5000.0	-26.4	Amb
12185.000	V	0.0	1.0	43.59	39.8	5.2	37.5	51.0	354.1	5000.0	-23.0	Amb
4874.000	H	0.0	1.0	43.65	33.0	3.5	37.2	43.0	141.0	5000.0	-31.0	Amb
7311.000	H	0.0	1.0	43.68	36.9	4.5	37.6	47.5	236.8	5000.0	-26.5	Amb
12185.000	H	0.0	1.0	43.79	39.8	5.2	37.5	51.2	362.3	5000.0	-22.8	Amb

802.11g, Channel 11, 2462M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
4923.928	V	0.0	1.0	32.74	33.1	3.6	37.2	32.2	40.8	500.0	-21.8	Amb
7386.000	V	0.0	1.0	33.20	36.9	4.7	37.6	37.2	72.8	500.0	-16.7	Amb
12310.000	V	0.0	1.0	32.45	39.8	5.3	37.3	40.2	102.8	500.0	-13.7	Amb
4923.928	H	0.0	1.0	33.90	33.1	3.6	37.2	33.4	46.7	500.0	-20.6	Amb
7386.000	H	0.0	1.0	33.83	36.9	4.7	37.6	37.9	78.3	500.0	-16.1	Amb
12310.000	H	0.0	1.0	33.33	39.8	5.3	37.3	41.1	113.7	500.0	-12.9	Amb
4923.928	V	0.0	1.0	32.74	33.1	3.6	37.2	32.2	40.8	500.0	-21.8	Amb
				PEAK								
4923.928	V	0.0	1.0	42.93	33.1	3.6	37.2	42.4	132.0	5000.0	-31.6	Amb
7386.000	V	0.0	1.0	43.97	36.9	4.7	37.6	48.0	251.7	5000.0	-26.0	Amb
12310.000	V	0.0	1.0	44.01	39.8	5.3	37.3	51.8	388.9	5000.0	-22.2	Amb
4923.928	H	0.0	1.0	43.96	33.1	3.6	37.2	43.4	148.6	5000.0	-30.5	Amb
7386.000	H	0.0	1.0	43.86	36.9	4.7	37.6	47.9	248.5	5000.0	-26.1	Amb
12310.000	H	0.0	1.0	44.77	39.8	5.3	37.3	52.6	424.5	5000.0	-21.4	Amb

802.11b, Channel 1, 2412M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
4824.000	V	0.0	1.0	34.26	32.9	3.5	37.2	33.4	47.0	500.0	-20.5	
12060.080	V	0.0	1.0	35.06	39.7	5.0	37.8	42.1	126.7	500.0	-11.9	Amb
14472.080	V	0.0	1.0	34.76	41.1	6.2	36.9	45.1	179.8	500.0	-8.9	Amb
4824.000	H	0.0	1.0	34.58	32.9	3.5	37.2	33.8	48.8	500.0	-20.2	
12060.080	H	0.0	1.0	35.89	39.7	5.0	37.8	42.9	139.4	500.0	-11.1	Amb
14472.080	H	0.0	1.0	34.56	41.1	6.2	36.9	44.9	175.7	500.0	-9.1	Amb
4824.000	V	0.0	1.0	34.26	32.9	3.5	37.2	33.4	47.0	500.0	-20.5	
				PEAK								
4824.000	V	0.0	1.0	43.27	32.9	3.5	37.2	42.5	132.7	5000.0	-31.5	
12060.080	V	0.0	1.0	44.65	39.7	5.0	37.8	51.6	382.1	5000.0	-22.3	Amb
14472.080	V	0.0	1.0	43.83	41.1	6.2	36.9	54.2	510.8	5000.0	-19.8	Amb
4824.000	H	0.0	1.0	44.26	32.9	3.5	37.2	43.4	148.7	5000.0	-30.5	
12060.080	H	0.0	1.0	45.23	39.7	5.0	37.8	52.2	408.5	5000.0	-21.8	Amb
14472.080	H	0.0	1.0	44.07	41.1	6.2	36.9	54.4	525.1	5000.0	-19.6	Amb

802.11b, Channel 6, 2437M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
4874.000	V	180.0	1.0	39.36	33.0	3.5	37.2	38.7	86.0	500.0	-15.3	
7311.000	V	0.0	1.0	32.57	36.9	4.5	37.6	36.4	65.9	500.0	-17.6	Amb
12185.000	V	0.0	1.0	31.81	39.8	5.2	37.5	39.2	91.2	500.0	-14.8	Amb
4874.000	H	180.0	1.0	38.96	33.0	3.5	37.2	38.3	82.2	500.0	-15.7	
7311.000	H	0.0	1.0	33.39	36.9	4.5	37.6	37.2	72.4	500.0	-16.8	Amb
12185.000	H	0.0	1.0	35.55	39.8	5.2	37.5	42.9	140.3	500.0	-11.0	Amb
4874.000	V	180.0	1.0	39.36	33.0	3.5	37.2	38.7	86.0	500.0	-15.3	
				PEAK								
4874.000	V	180.0	1.0	45.26	33.0	3.5	37.2	44.6	169.7	5000.0	-29.4	
7311.000	V	0.0	1.0	42.33	36.9	4.5	37.6	46.1	202.7	5000.0	-27.8	Amb
12185.000	V	0.0	1.0	43.76	39.8	5.2	37.5	51.2	361.1	5000.0	-22.8	Amb
4874.000	H	180.0	1.0	44.72	33.0	3.5	37.2	44.1	159.5	5000.0	-29.9	
7311.000	H	0.0	1.0	43.61	36.9	4.5	37.6	47.4	234.9	5000.0	-26.6	Amb
12185.000	H	0.0	1.0	45.23	39.8	5.2	37.5	52.6	427.7	5000.0	-21.4	Amb

802.11b, Channel 11, 2462M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
4924.000	V	0.0	1.0	32.92	33.1	3.6	37.2	41.7	121.3	500.0	-12.3	
7386.000	V	0.0	1.0	33.02	36.9	4.7	37.6	37.0	70.7	500.0	-17.0	Amb
12310.000	V	0.0	1.0	35.64	39.8	5.3	37.3	43.4	148.4	500.0	-10.6	Amb
4923.928	H	0.0	1.0	32.92	33.1	3.6	37.2	40.1	101.4	500.0	-13.9	
7386.000	H	0.0	1.0	33.02	36.9	4.7	37.6	37.9	78.3	500.0	-16.1	Amb
12310.000	H	0.0	1.0	34.57	39.8	5.3	37.3	42.4	131.2	500.0	-11.6	Amb
4924.000	V	0.0	1.0	32.92	33.1	3.6	37.2	41.7	121.3	500.0	-12.3	
				PEAK								
4924.000	V	0.0	1.0	43.11	33.1	3.6	37.2	45.6	190.8	5000.0	-28.4	
7386.000	V	0.0	1.0	43.63	36.9	4.7	37.6	47.7	241.7	5000.0	-26.3	Amb
12310.000	V	0.0	1.0	45.13	39.8	5.3	37.3	52.9	442.5	5000.0	-21.1	Amb
4923.928	H	0.0	1.0	43.11	33.1	3.6	37.2	46.3	206.5	5000.0	-27.7	
7386.000	H	0.0	1.0	43.63	36.9	4.7	37.6	47.9	248.5	5000.0	-26.1	Amb
12310.000	H	0.0	1.0	43.83	39.8	5.3	37.3	51.6	381.0	5000.0	-22.4	Amb

802.11a, Channel 36, 5180M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
5150.000	V	0.0	1.0	35.74	33.5	3.7	37.2	35.7	60.9	500.0	-18.3	
15540.000	V	0.0	1.0	35.06	39.7	6.5	37.1	44.2	161.5	500.0	-9.8	Amb
20719.750	V	0.0	1.0	23.03	40.0	2.1	21.5	43.6	151.9	500.0	-10.3	Amb
5150.000	H	0.0	1.0	36.11	33.5	3.7	37.2	36.1	63.6	500.0	-17.9	
15540.000	H	0.0	1.0	33.82	39.7	6.5	37.1	42.9	140.0	500.0	-11.1	Amb
20719.750	H	0.0	1.0	22.94	40.0	2.1	21.5	43.5	150.3	500.0	-10.4	Amb
5150.000	V	0.0	1.0	35.74	33.5	3.7	37.2	35.7	60.9	500.0	-18.3	
				PEAK								
5150.000	V	0.0	1.0	46.63	33.5	3.7	37.2	46.6	213.5	5000.0	-27.4	
15540.000	V	0.0	1.0	45.59	39.7	6.5	37.1	54.7	542.8	5000.0	-19.3	Amb
20719.750	V	0.0	1.0	34.98	40.0	2.1	21.5	55.6	601.2	5000.0	-18.4	Amb
5150.000	H	0.0	1.0	47.70	33.5	3.7	37.2	47.7	241.5	5000.0	-26.3	
15540.000	H	0.0	1.0	45.88	39.7	6.5	37.1	55.0	561.2	5000.0	-19.0	Amb
20719.750	H	0.0	1.0	34.78	40.0	2.1	21.5	55.4	587.5	5000.0	-18.6	Amb

802.11a, Channel 48, 5240M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
5350.000	V	0.0	1.0	37.05	33.7	3.8	37.2	37.3	73.7	500.0	-16.6	
15720.000	V	0.0	1.0	36.55	39.5	6.6	37.1	45.5	187.9	500.0	-8.5	Amb
20959.740	V	0.0	1.0	23.45	40.0	2.1	21.2	44.4	165.0	500.0	-9.6	Amb
5350.000	H	0.0	1.0	36.89	33.7	3.8	37.2	37.2	72.3	500.0	-16.8	
15720.000	H	0.0	1.0	37.76	39.5	6.6	37.1	46.7	216.0	500.0	-7.3	Amb
20959.740	H	0.0	1.0	23.29	40.0	2.1	21.2	44.2	162.0	500.0	-9.8	Amb
5350.000	V	0.0	1.0	37.05	33.7	3.8	37.2	37.3	73.7	500.0	-16.6	
				PEAK								
5350.000	V	0.0	1.0	45.54	33.7	3.8	37.2	45.8	195.7	5000.0	-28.1	
15720.000	V	0.0	1.0	47.65	39.5	6.6	37.1	56.6	674.6	5000.0	-17.4	Amb
20959.740	V	0.0	1.0	33.92	40.0	2.1	21.2	54.8	550.8	5000.0	-19.2	Amb
5350.000	H	0.0	1.0	45.23	33.7	3.8	37.2	45.5	188.9	5000.0	-28.5	
15720.000	H	0.0	1.0	48.80	39.5	6.6	37.1	57.7	770.1	5000.0	-16.2	Amb
20959.740	H	0.0	1.0	33.86	40.0	2.1	21.2	54.8	547.0	5000.0	-19.2	Amb

802.11a, Channel 52, 5260M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
5350.000	V	0.0	1.0	35.61	33.7	3.8	37.2	35.9	62.4	500.0	-18.1	
15780.000	V	0.0	1.0	39.52	39.4	6.6	37.1	48.4	262.8	500.0	-5.6	
21039.719	V	0.0	1.0	22.67	40.0	2.1	21.2	43.6	150.8	500.0	-10.4	Amb
5350.000	H	0.0	1.0	35.42	33.7	3.8	37.2	35.7	61.1	500.0	-18.3	Amb
15780.000	H	0.0	1.0	38.19	39.4	6.6	37.1	47.1	225.5	500.0	-6.9	Amb
21039.719	H	0.0	1.0	21.86	40.0	2.1	21.2	42.8	137.4	500.0	-11.2	Amb
5350.000	V	0.0	1.0	35.61	33.7	3.8	37.2	35.9	62.4	500.0	-18.1	
				PEAK								
5350.000	V	0.0	1.0	46.96	33.7	3.8	37.2	47.3	230.5	5000.0	-26.7	
15780.000	V	0.0	1.0	53.12	39.4	6.6	37.1	62.0	1258.0	5000.0	-12.0	
21039.719	V	0.0	1.0	33.68	40.0	2.1	21.2	54.6	535.8	5000.0	-19.4	Amb
5350.000	H	0.0	1.0	46.41	33.7	3.8	37.2	46.7	216.4	5000.0	-27.3	Amb
15780.000	H	0.0	1.0	48.02	39.4	6.6	37.1	56.9	699.3	5000.0	-17.1	Amb
21039.719	H	0.0	1.0	33.55	40.0	2.1	21.2	54.5	527.8	5000.0	-19.5	Amb

802.11a, Channel 64, 5320M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
5350.000	V	180.0	1.0	39.27	33.7	3.8	37.2	39.6	95.1	500.0	-14.4	
15960.000	V	0.0	1.0	37.02	39.2	6.7	37.1	45.7	193.3	500.0	-8.3	Amb
21279.733	V	0.0	1.0	22.06	40.1	2.1	21.2	43.1	142.2	500.0	-10.9	Amb
5350.000	H	180.0	1.0	36.91	33.7	3.8	37.2	37.2	72.5	500.0	-16.8	
15960.000	H	0.0	1.0	38.85	39.2	6.7	37.1	47.6	238.6	500.0	-6.4	Amb
21279.733	H	0.0	1.0	22.50	40.1	2.1	21.2	43.5	149.6	500.0	-10.5	Amb
				PEAK								
5350.000	V	180.0	1.0	51.27	33.7	3.8	37.2	51.6	378.6	5000.0	-22.4	
15960.000	V	0.0	1.0	49.10	39.2	6.7	37.1	57.8	776.6	5000.0	-16.2	Amb
21279.733	V	0.0	1.0	33.67	40.1	2.1	21.2	54.7	541.4	5000.0	-19.3	Amb
5350.000	H	180.0	1.0	48.50	33.7	3.8	37.2	48.8	275.2	5000.0	-25.2	
15960.000	H	0.0	1.0	49.24	39.2	6.7	37.1	57.9	789.2	5000.0	-16.0	Amb
21279.733	H	0.0	1.0	33.58	40.1	2.1	21.2	54.6	535.8	5000.0	-19.4	Amb

802.11a, Channel 149, 5745M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
11490.000	V	0.0	1.0	37.02	39.5	5.6	37.8	44.3	164.4	500.0	-9.7	Amb
17235.000	V	0.0	1.0	35.24	42.7	9.4	37.2	50.2	324.4	500.0	-3.8	Amb
22980.000	V	0.0	1.0	22.89	40.5	2.1	20.0	45.5	188.1	500.0	-8.5	Amb
11490.000	H	0.0	1.0	34.56	39.5	5.6	37.8	41.9	123.9	500.0	-12.1	Amb
17235.000	H	0.0	1.0	34.62	42.7	9.4	37.2	49.6	302.0	500.0	-4.4	Amb
22980.000	H	0.0	1.0	22.67	40.5	2.1	20.0	45.3	183.4	500.0	-8.7	Amb
				PEAK								
11490.000	V	0.0	1.0	47.13	39.5	5.6	37.8	54.4	526.6	5000.0	-19.6	Amb
17235.000	V	0.0	1.0	46.32	42.7	9.4	37.2	61.3	1161.6	5000.0	-12.7	Amb
22980.000	V	0.0	1.0	34.27	40.5	2.1	20.0	56.9	697.4	5000.0	-17.1	Amb
11490.000	H	0.0	1.0	44.54	39.5	5.6	37.8	51.8	390.8	5000.0	-22.1	Amb
17235.000	H	0.0	1.0	46.02	42.7	9.4	37.2	61.0	1122.2	5000.0	-13.0	Amb
22980.000	H	0.0	1.0	33.87	40.5	2.1	20.0	56.5	666.0	5000.0	-17.5	Amb

802.11a, Channel 157, 5785M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
11530.000	V	0.0	1.0	35.89	39.5	5.6	37.8	43.1	143.7	500.0	-10.8	Amb
17355.000	V	0.0	1.0	35.02	43.2	9.8	37.2	50.9	348.8	500.0	-3.1	Amb
11530.000	H	0.0	1.0	35.84	39.5	5.6	37.8	43.1	142.9	500.0	-10.9	Amb
17355.000	H	0.0	1.0	34.53	43.2	9.8	37.2	50.4	329.6	500.0	-3.6	Amb
				PEAK								
11530.000	V	0.0	1.0	46.23	39.5	5.6	37.8	53.5	472.6	5000.0	-20.5	Amb
17355.000	V	0.0	1.0	47.65	43.2	9.8	37.2	63.5	1493.0	5000.0	-10.5	Amb
11530.000	H	0.0	1.0	45.62	39.5	5.6	37.8	52.9	440.5	5000.0	-21.1	Amb
17355.000	H	0.0	1.0	47.38	43.2	9.8	37.2	63.2	1447.3	5000.0	-10.8	Amb

802.11a, Channel 161, 5805M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
2800.000	V	0.0	1.0	54.23	29.8	1.5	38.0	47.5	237.8	500.0	-6.5	Amb
11610.000	V	0.0	1.0	37.14	39.5	5.5	37.8	44.3	164.4	500.0	-9.7	Amb
17415.000	V	0.0	1.0	35.62	43.5	10.0	37.2	51.9	392.4	500.0	-2.1	Amb
2800.000	H		1.0	54.03	29.8	1.5	38.0	47.3	232.4	500.0	-6.7	Amb
11610.000	H	0.0	1.0	36.70	39.5	5.5	37.8	43.9	156.3	500.0	-10.1	Amb
17415.000	H	0.0	1.0	35.48	43.5	10.0	37.2	51.7	386.1	500.0	-2.2	Amb
				PEAK								
2800.000	V	0.0	1.0	64.85	29.8	1.5	38.0	58.1	807.6	5000.0	-15.8	Amb
11610.000	V	0.0	1.0	47.74	39.5	5.5	37.8	54.9	557.2	5000.0	-19.1	Amb
17415.000	V	0.0	1.0	47.86	43.5	10.0	37.2	64.1	1605.8	5000.0	-9.9	Amb
2800.000	H		1.0	64.62	29.8	1.5	38.0	57.9	786.5	5000.0	-16.1	Amb
11610.000	H	0.0	1.0	47.62	39.5	5.5	37.8	54.8	549.5	5000.0	-19.2	Amb
17415.000	H	0.0	1.0	47.87	43.5	10.0	37.2	64.1	1607.6	5000.0	-9.9	Amb

802.11a, Channel 165, 5825M

Frequency (MHz)	Pol H/V	Az Deg	Ant. Hght (m)	SA Level (dBµV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Amp Gain (dB)	Corr. Level (dBµV/m)	Corr. Level (µV/m)	Limit (µV/m)	Margin (dB)	Notes
				AVG								
2800.000	V	0.0	1.0	57.23	29.8	1.5	38.0	50.5	335.9	500.0	-3.5	Amb
11650.000	V	0.0	1.0	36.00	39.5	5.4	37.8	43.1	143.6	500.0	-10.8	Amb
17475.000	V	0.0	1.0	35.86	43.7	10.2	37.2	52.5	423.4	500.0	-1.4	Amb
2800.000	H	0.0	1.0	57.04	29.8	1.5	38.0	50.3	328.6	500.0	-3.6	Amb
11650.000	H	0.0	1.0	35.56	39.5	5.4	37.8	42.7	136.5	500.0	-11.3	Amb
17475.000	H	0.0	1.0	34.52	43.7	10.2	37.2	51.2	362.9	500.0	-2.8	Amb
				PEAK								
2800.000	V	0.0	1.0	68.85	29.8	1.5	38.0	62.1	1279.9	5000.0	-11.8	Amb
11650.000	V	0.0	1.0	47.15	39.5	5.4	37.8	54.3	518.2	5000.0	-19.7	Amb
17475.000	V	0.0	1.0	48.33	43.7	10.2	37.2	65.0	1779.3	5000.0	-9.0	Amb
2800.000	H	0.0	1.0	68.17	29.8	1.5	38.0	61.5	1183.5	5000.0	-12.5	Amb
11650.000	H	0.0	1.0	46.89	39.5	5.4	37.8	54.0	502.9	5000.0	-19.9	Amb
17475.000	H	0.0	1.0	48.18	43.7	10.2	37.2	64.9	1748.8	5000.0	-9.1	Amb

7 Co-Location Measurements

The Symbol Technologies APEX RF1224 unit is a device which has collocated transmitters. There are a total of 3 transmitters that will operate simultaneously within 20cm separation distance. As described in Section 2 of this report the unit contains a 902-928MHz FHSS RFID transmitter, Bluetooth transmitter, and a 802.11a/b/g transmitter. To determine if the mixing of signals from one radio to another produces harmonics above specification limits, the device was set up to operate simultaneously with the following configurations:

Table 10. Co-Location Radio Measurements Test Configuration

Configuration	Radio	Frequency (MHz)	Note
1	Bluetooth	2402	Horz./Vert.
	RFID	927.29	Horz./Vert.
	802.11a	5240	Horz./Vert.
2	Bluetooth	2480	Horz./Vert.
	RFID	915	Horz./Vert.
	802.11b	2412	Horz./Vert.

The equipment was configured for a single channel in each band. The device was set up in an anechoic chamber and all transmitters were set to operate normally at maximum power settings. A scan of the spectrum was performed to identify any intermodulation products that may have been produced by mixing action occurring between the different transmitters. Particular attention was paid to the Restricted Bands of operation and measurements were collected as the equipment turntable was rotated through 360 degress. Measurements were collected up to 18 GHz as it would be expected that any harmonic product would lie at or below the first product.

No additional frequencies or products were detected that exceed the radiated emissions limits of Part 15.209.

7.1 AC Powerline Conducted Emissions: (FCC Part §15.207 and RSS-GEN)

The EUT was placed on an 80 cm high 1 x 1.5 m non-conductive table above a ground plane. Power to the EUT was provided through a Solar Corporation 50 Ω/50 μH Line Impedance Stabilization Network bonded to a 3 x 2 meter ground plane. The LISN has its AC input supplied from a filtered AC power source. Power and data cables were moved about to obtain maximum emissions.

The 50Ω output of the LISN was connected to the input of the spectrum analyzer and the emissions in the frequency range of 150 kHz to 30 MHz were measured. The detector function was set to quasi-peak,

peak, or average as appropriate, and the resolution bandwidth during testing was at least 9 kHz, with all post-detector filtering no less than 10 times the resolution bandwidth for peak measurements.

Data is recorded in the following table.

Table 11. Conducted Emissions Test Data; §15.207

Client: Symbol **Date:** **6/2/2006**
Model: RF1224 **Job #:** **9197**
Tester: James Ritter
TEST STANDARD: FCC Part 15 CLASS: *FCC_B*
TEST SITE: *CSITE2_CE* TEST VOLTAGE: 120 VAC
LISN 1: A_00125 LISN 2: A_00126

LINE 1 - NEUTRAL

Frequency (MHz)	Level QP (dBµV)	Cable Loss (dB)	LISN Corr (dB)	Limit QP (dBµV)	Level Corr (dBµV)	Margin QP (dB)	Level AVG (dBµV)	Cable Loss (dB)	Level Corr (dBµV)	Limit AVG (dBµV)	Margin AVG (dB)
0.223	36.3	10.2	0.5	62.7	47.0	-15.7	33.4	10.2	44.1	52.7	-8.6
0.350	23.7	10.2	0.3	59.0	34.3	-24.7	20.7	10.2	31.3	49.0	-17.7
0.798	19.6	10.4	0.2	56.0	30.3	-25.7	18.3	10.4	29.0	46.0	-17.0
14.319	20.9	12.0	2.1	60.0	35.0	-25.0	19.5	12.0	33.6	50.0	-16.4
17.826	26.2	12.2	2.8	60.0	41.2	-18.8	25.2	12.2	40.2	50.0	-9.8
20.053	29.3	12.4	3.1	60.0	44.8	-15.2	27.9	12.4	43.4	50.0	-6.6
21.164	25.0	12.4	3.4	60.0	40.8	-19.2	23.6	12.4	39.4	50.0	-10.6
25.620	21.4	12.6	4.4	60.0	38.5	-21.5	19.2	12.6	36.3	50.0	-13.7

LINE 2 Phase

Frequency (MHz)	Level QP (dBµV)	Cable Loss (dB)	LISN Corr (dB)	Limit QP (dBµV)	Level Corr (dBµV)	Margin QP (dB)	Level AVG (dBµV)	Cable Loss (dB)	Level Corr (dBµV)	Limit AVG (dBµV)	Margin AVG (dB)
0.223	38.1	10.2	0.3	62.7	48.5	-14.2	31.3	10.2	41.7	52.7	-11.0
0.350	24.6	10.2	0.2	59.0	35.0	-23.9	19.4	10.2	29.8	49.0	-19.1
0.798	19.3	10.4	0.2	56.0	29.9	-26.1	16.9	10.4	27.5	46.0	-18.5
14.319	22.2	12.0	2.9	60.0	37.1	-22.9	19.8	12.0	34.7	50.0	-15.3
17.826	26.3	12.2	3.7	60.0	42.2	-17.8	24.9	12.2	40.8	50.0	-9.2
20.053	28.3	12.4	4.1	60.0	44.8	-15.2	27.6	12.4	44.1	50.0	-5.9
21.164	25.8	12.4	4.4	60.0	42.6	-17.4	24.6	12.4	41.4	50.0	-8.6
25.620	20.6	12.6	5.4	60.0	38.7	-21.3	18.5	12.6	36.6	50.0	-13.4