

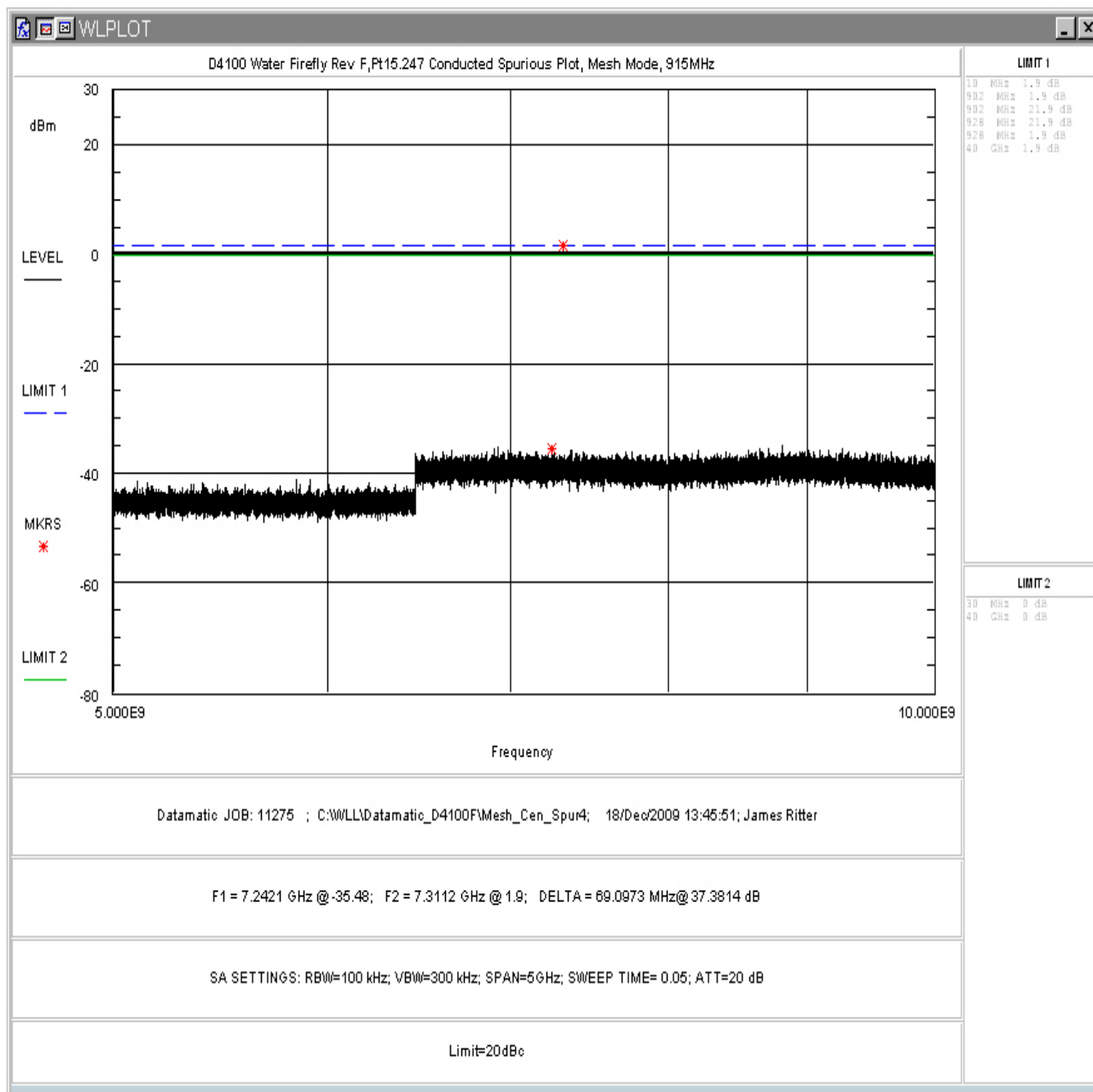


Figure 42: Conducted Spurious Emissions, Mesh Mode, Center Channel 5 – 10GHz

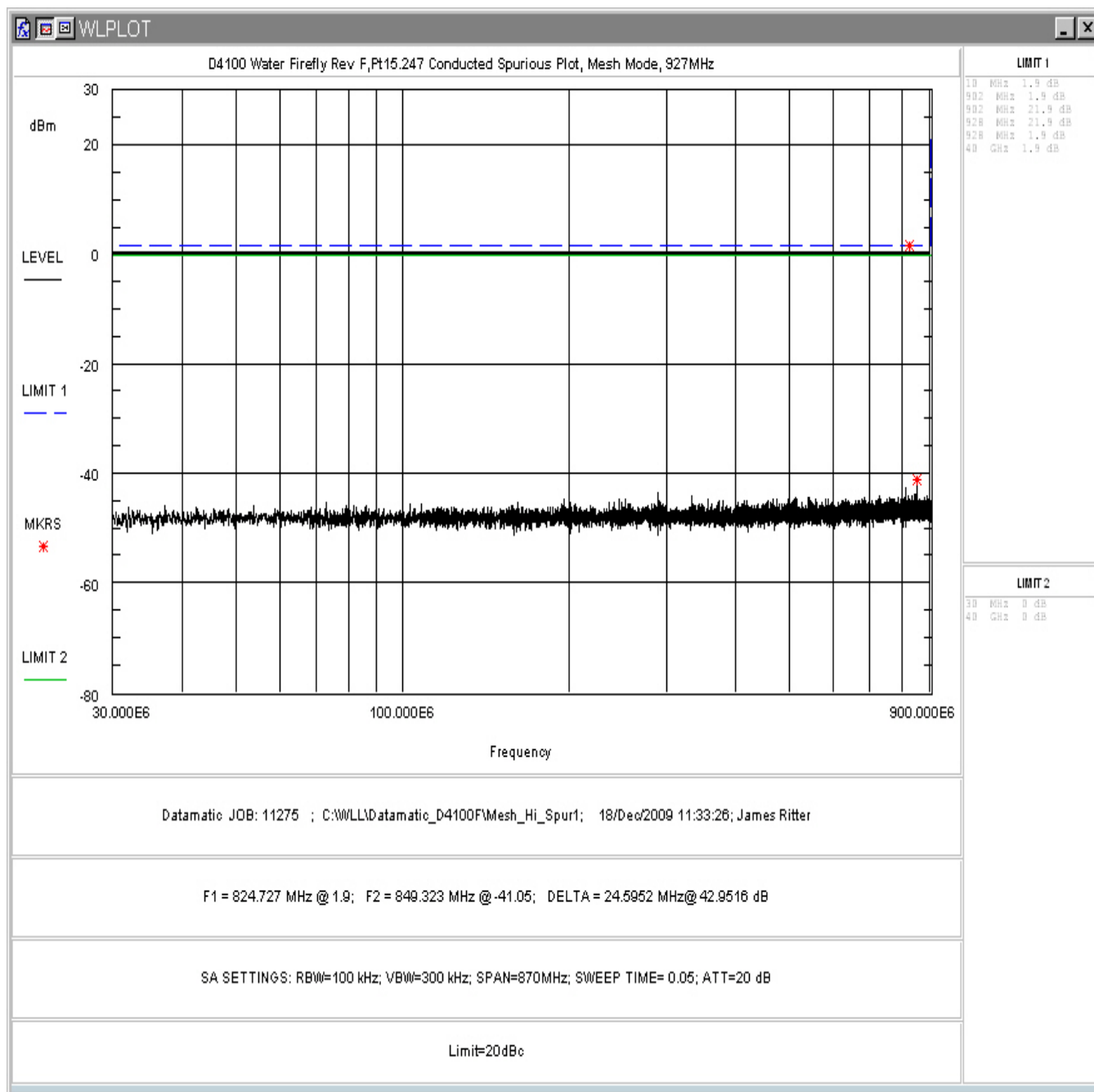


Figure 43: Conducted Spurious Emissions, Mesh Mode, High Channel 30 - 900MHz

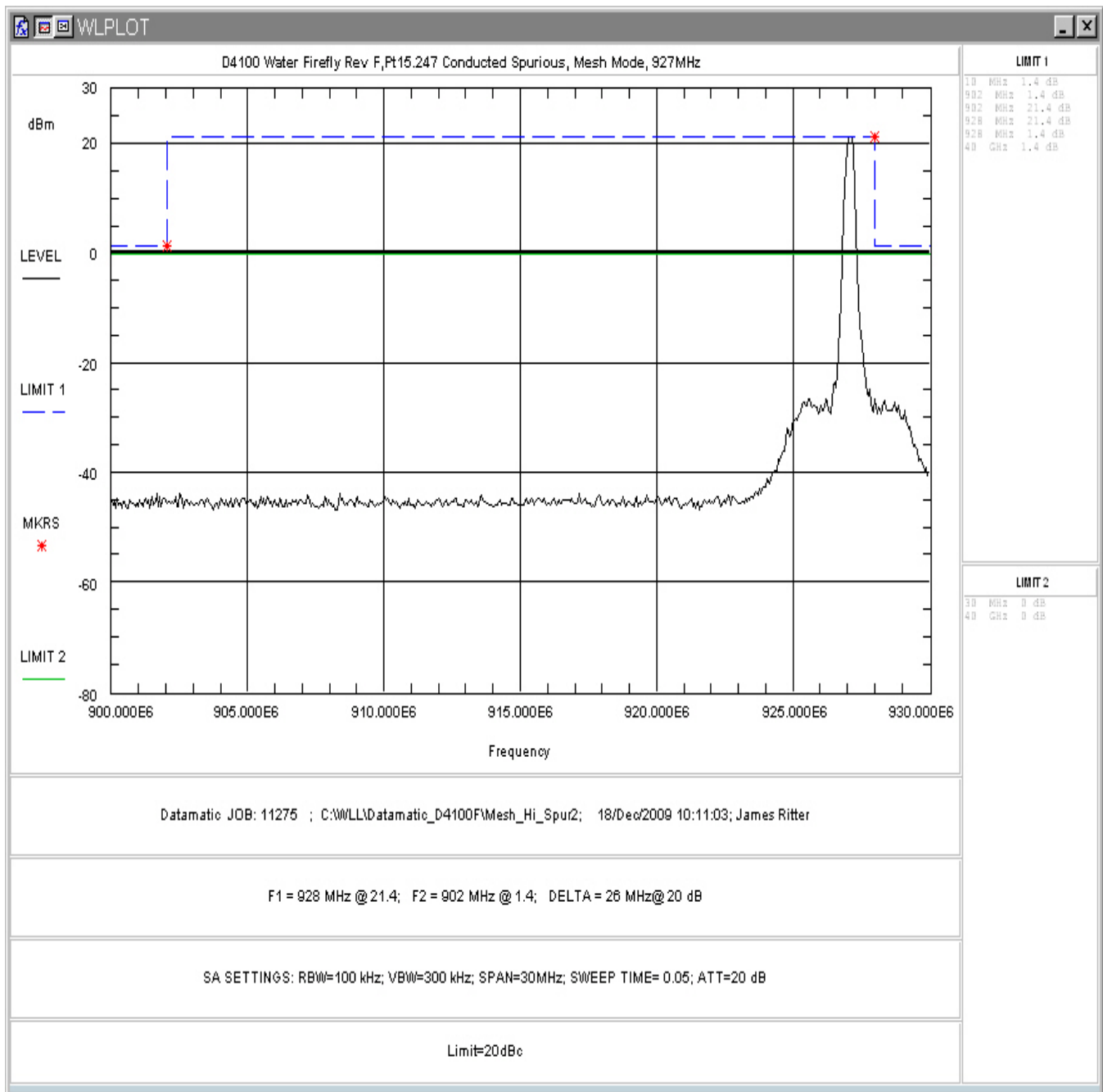


Figure 44: Conducted Spurious Emissions, Mesh Mode, High Channel 900 - 930MHz

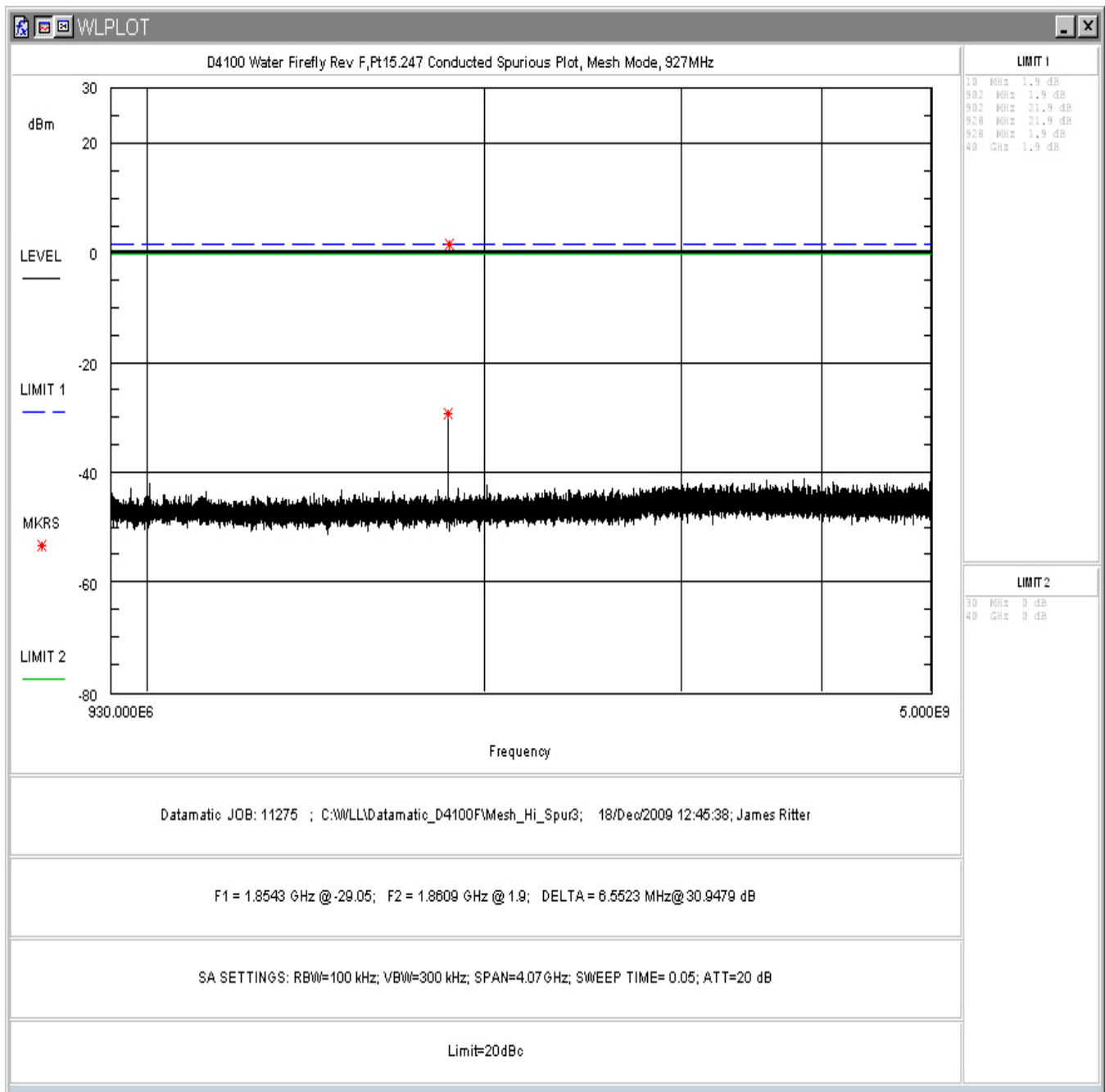


Figure 45: Conducted Spurious Emissions, Mesh Mode, High Channel 930MHz – 5GHz

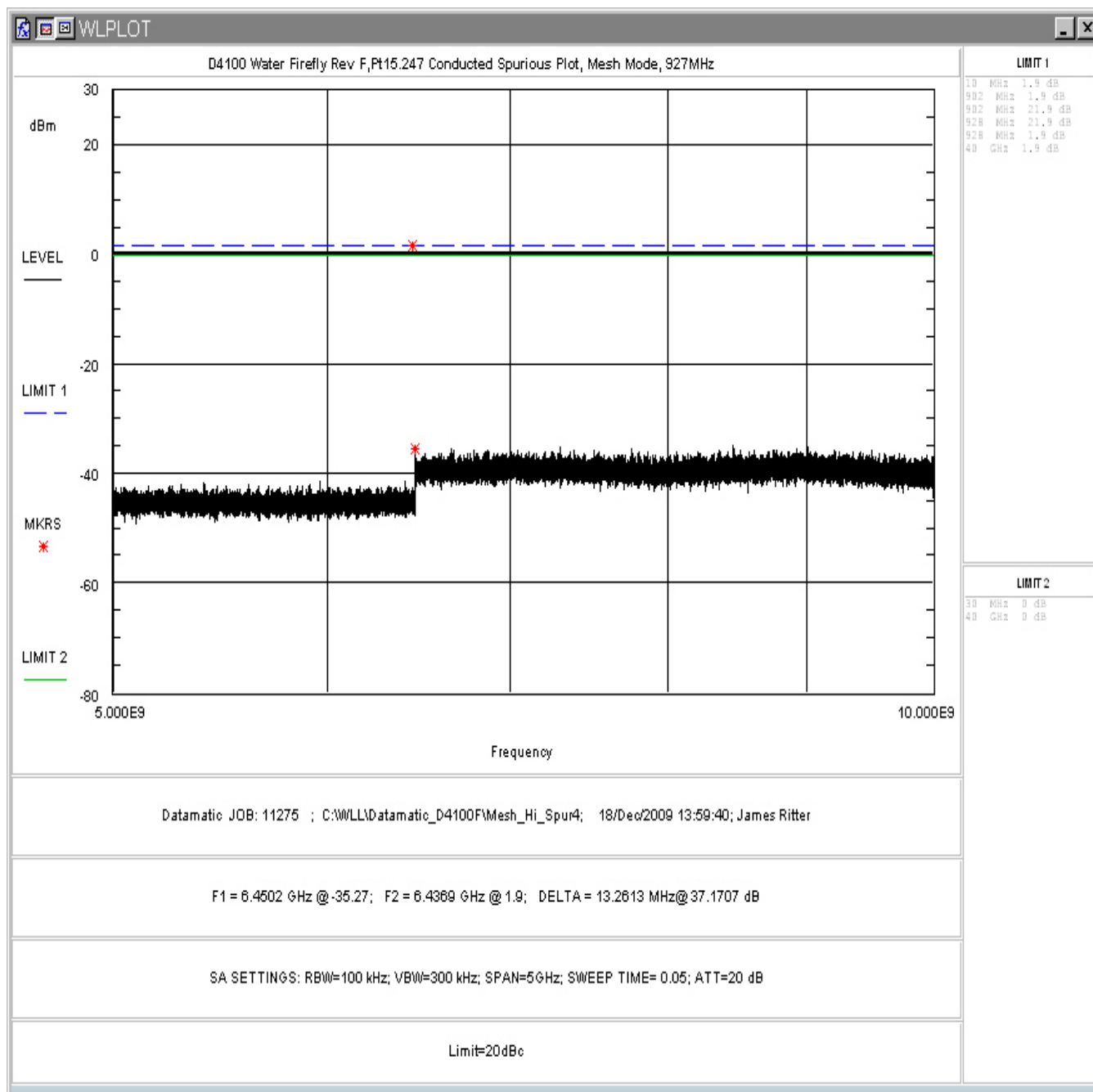


Figure 46: Conducted Spurious Emissions, Mesh Mode, High Channel 5 - 10GHz

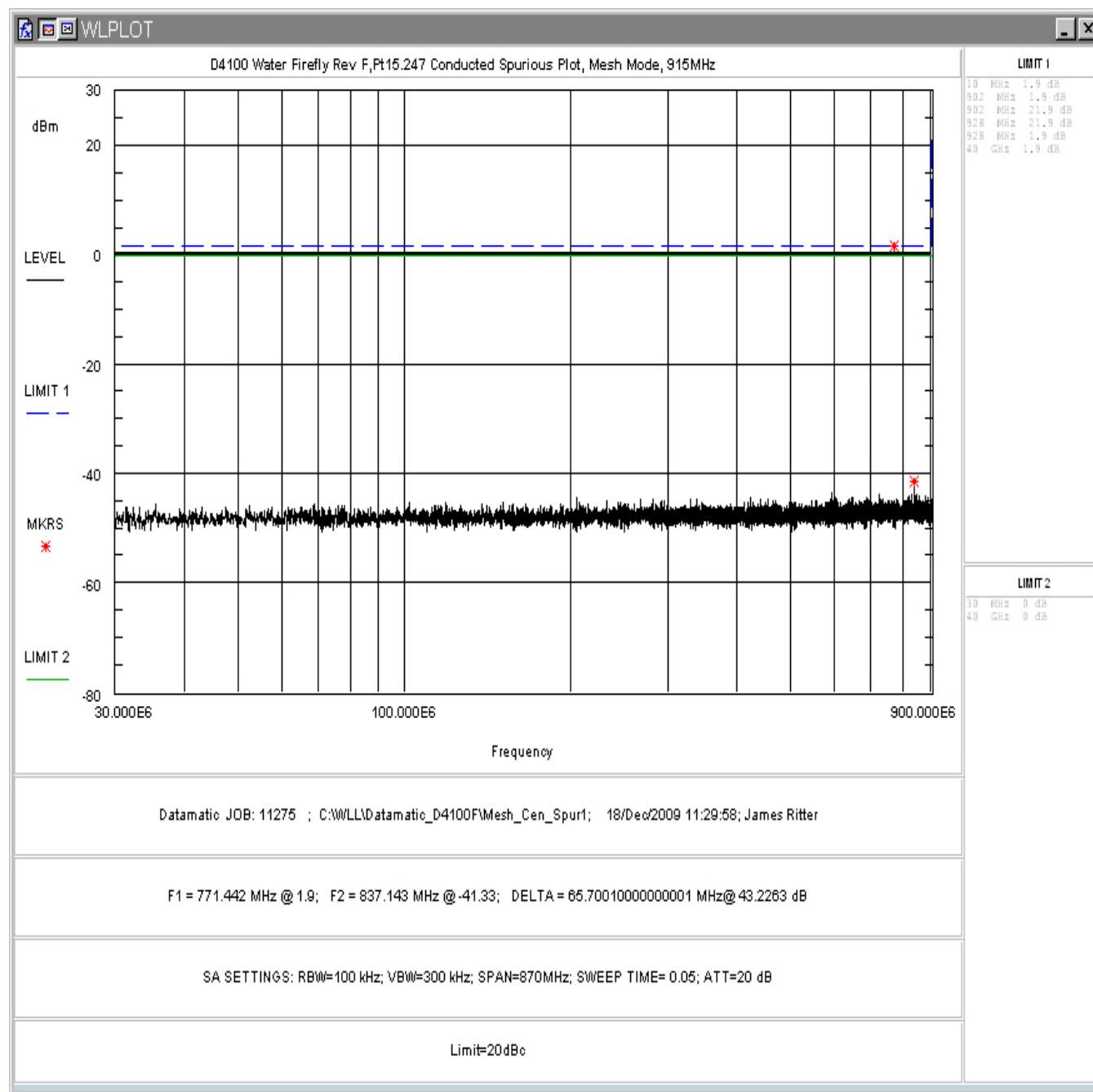


Figure 47: Conducted Spurious Emissions, Driveby Mode, Low Channel 30 - 900MHz

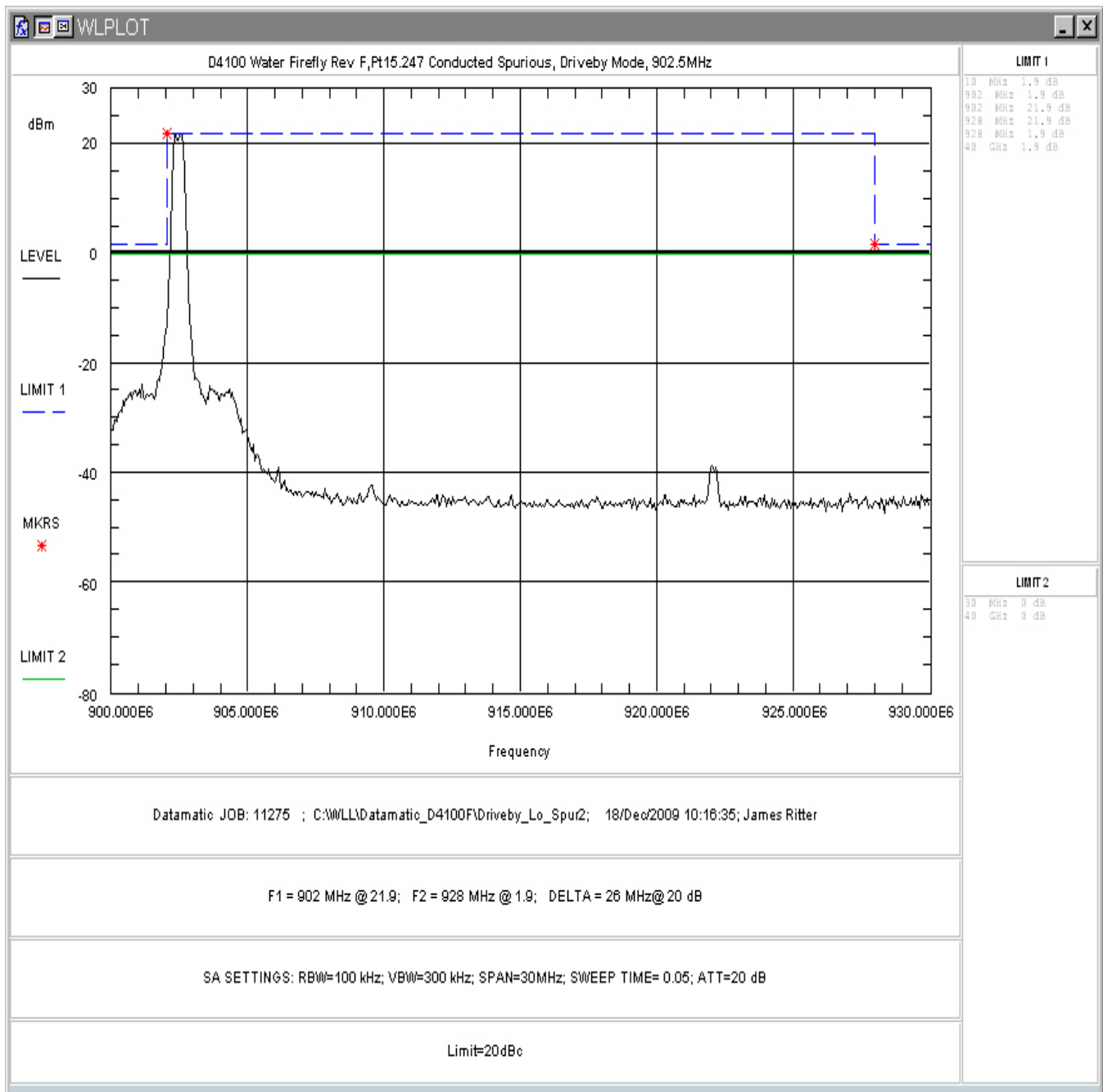


Figure 48: Conducted Spurious Emissions, Driveby Mode, Low Channel 900 - 930MHz

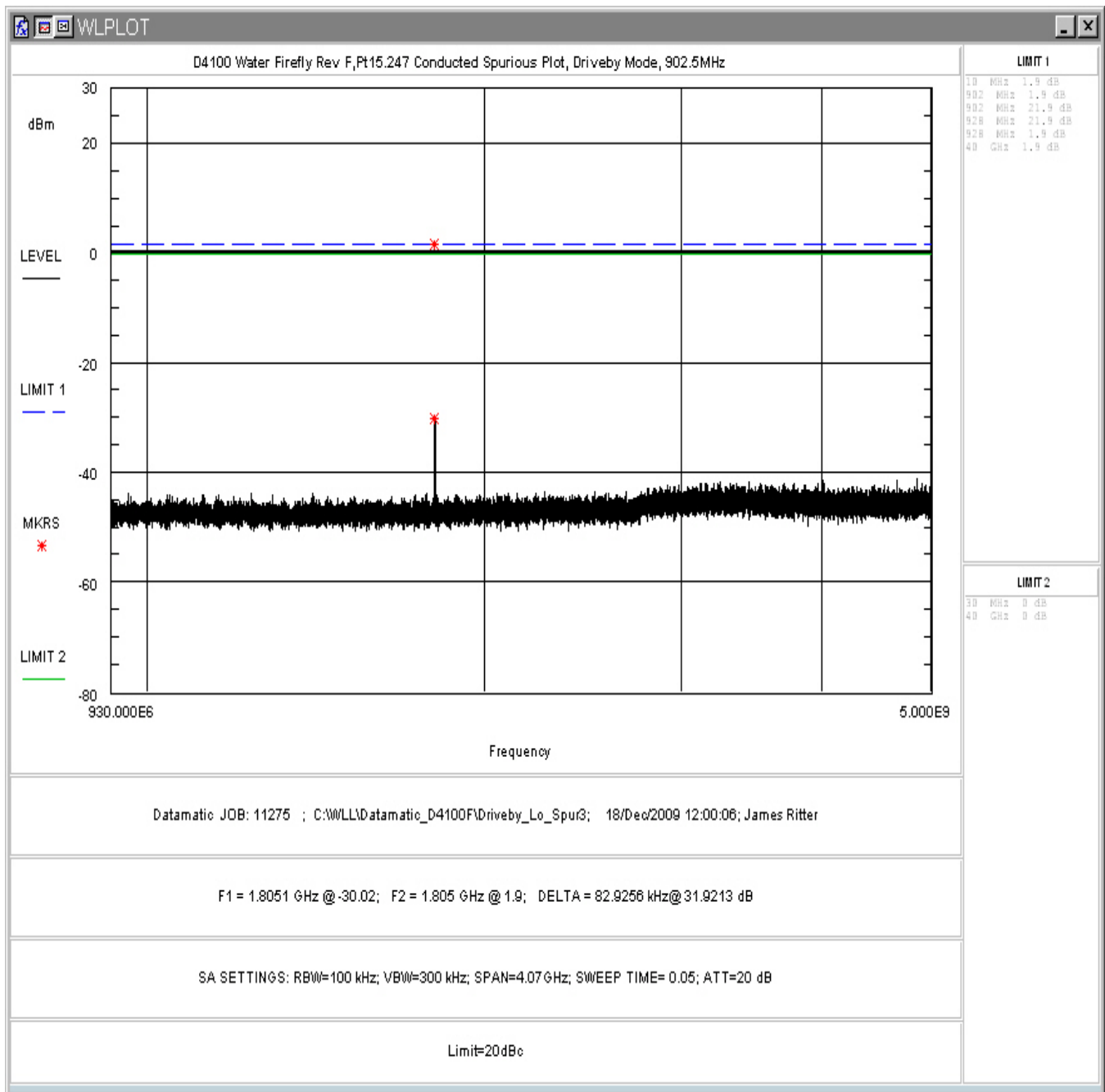


Figure 49: Conducted Spurious Emissions, Driveby Mode, Low Channel 930MHz – 5GHz

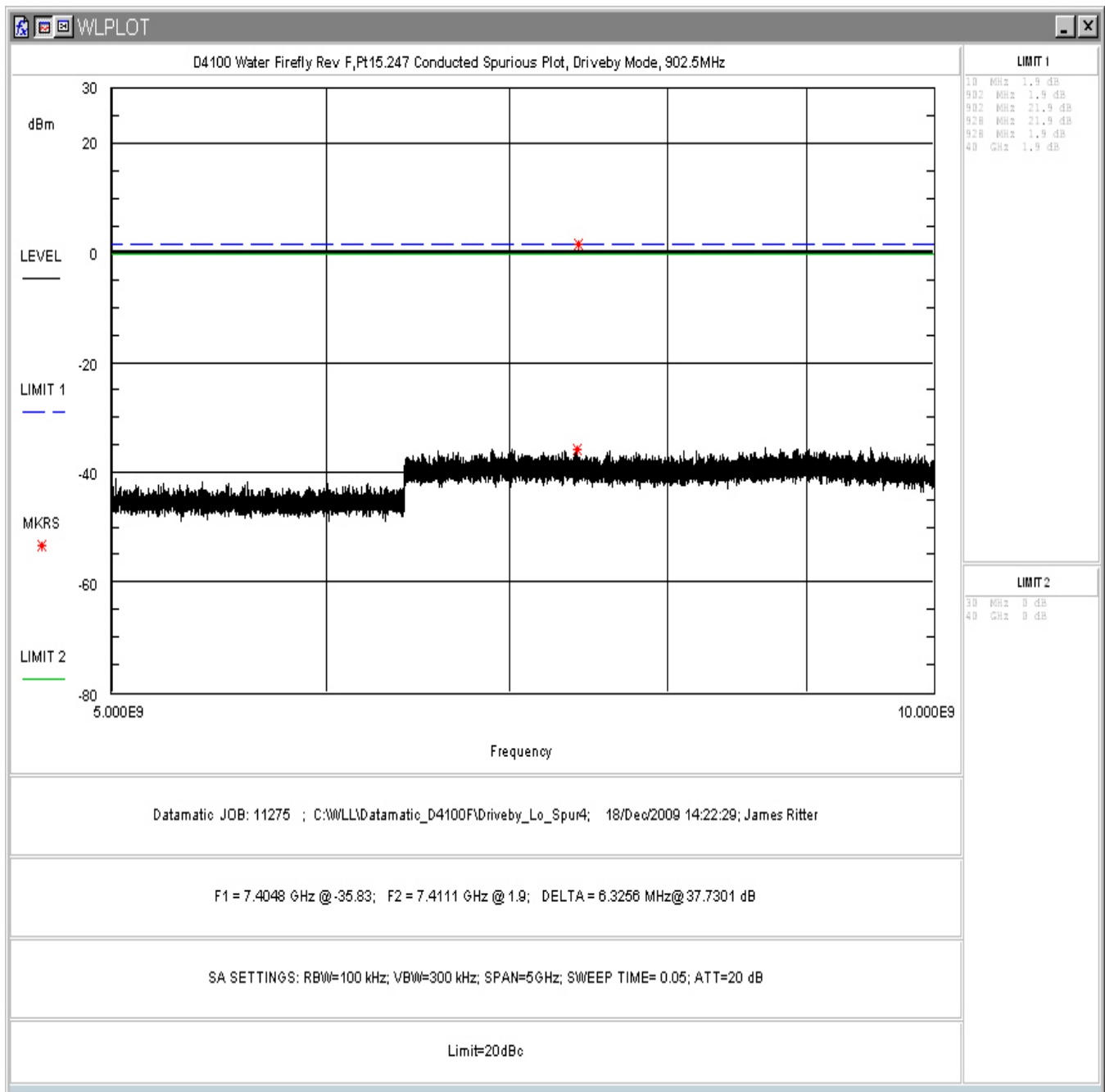


Figure 50: Conducted Spurious Emissions, Driveby Mode, Low Channel 5GHz – 10GHz

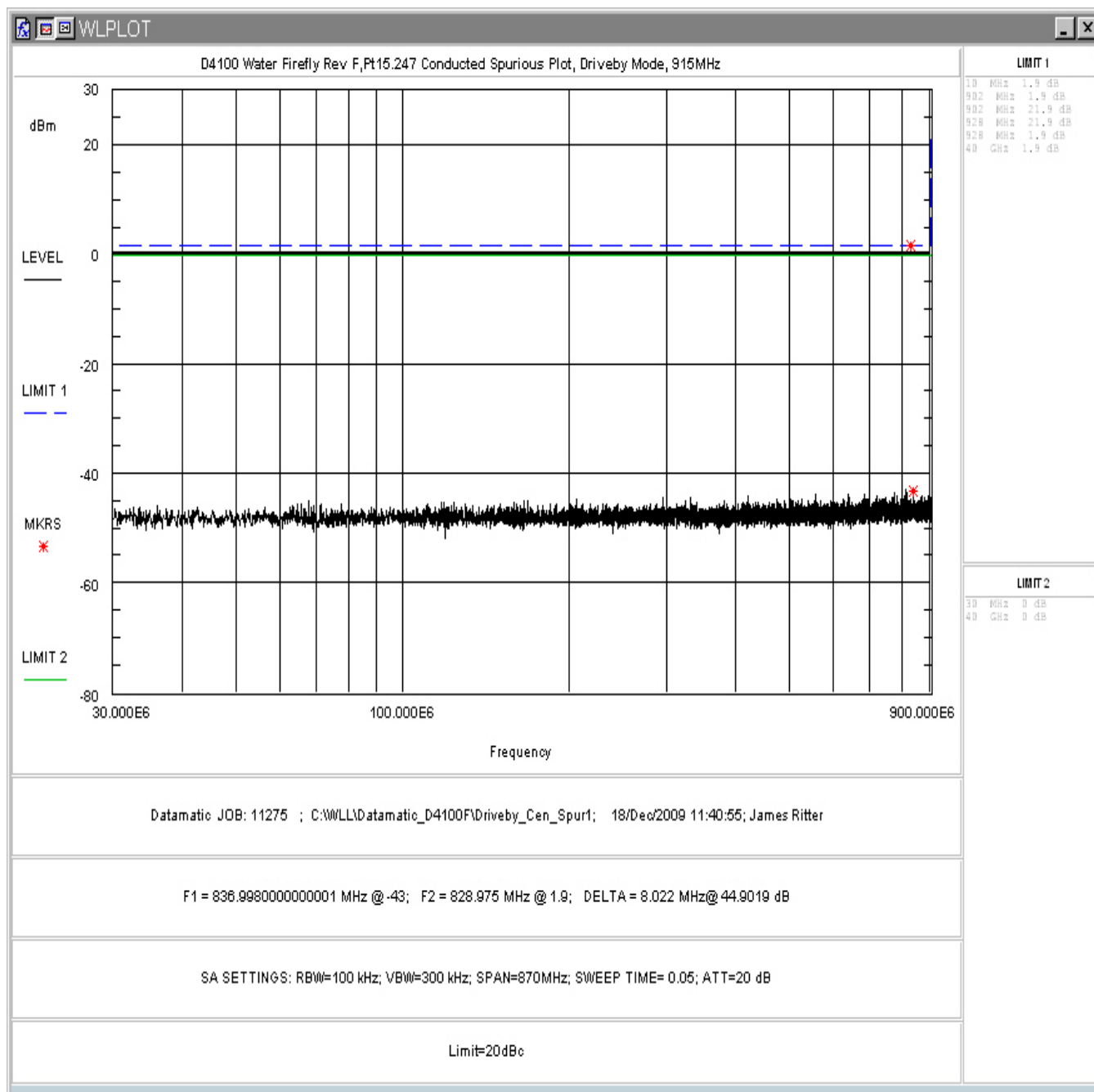


Figure 51: Conducted Spurious Emissions, Driveby Mode, Center Channel 30 - 900MHz

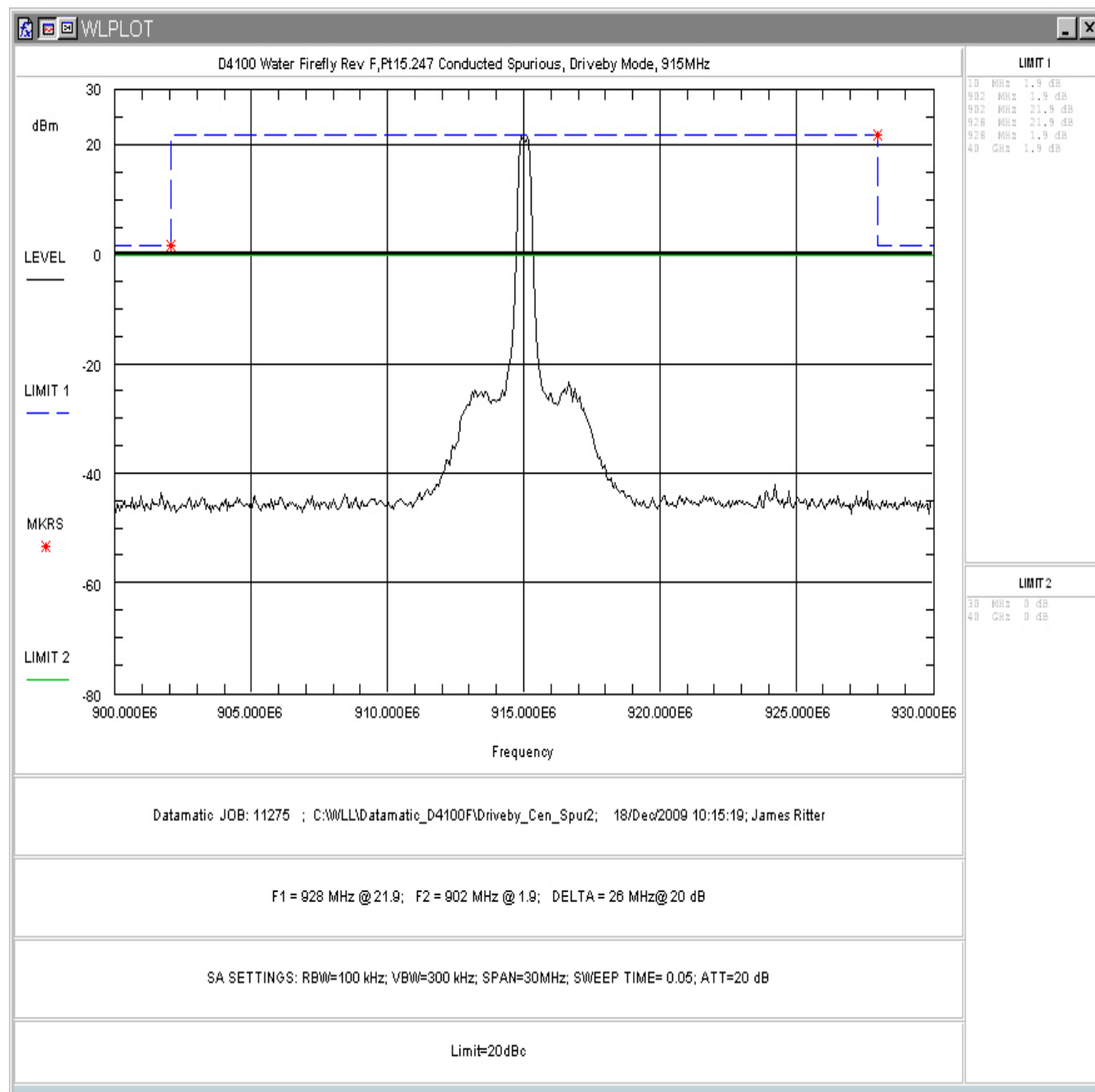


Figure 52: Conducted Spurious Emissions, Driveby Mode, Center Channel 900 - 930MHz

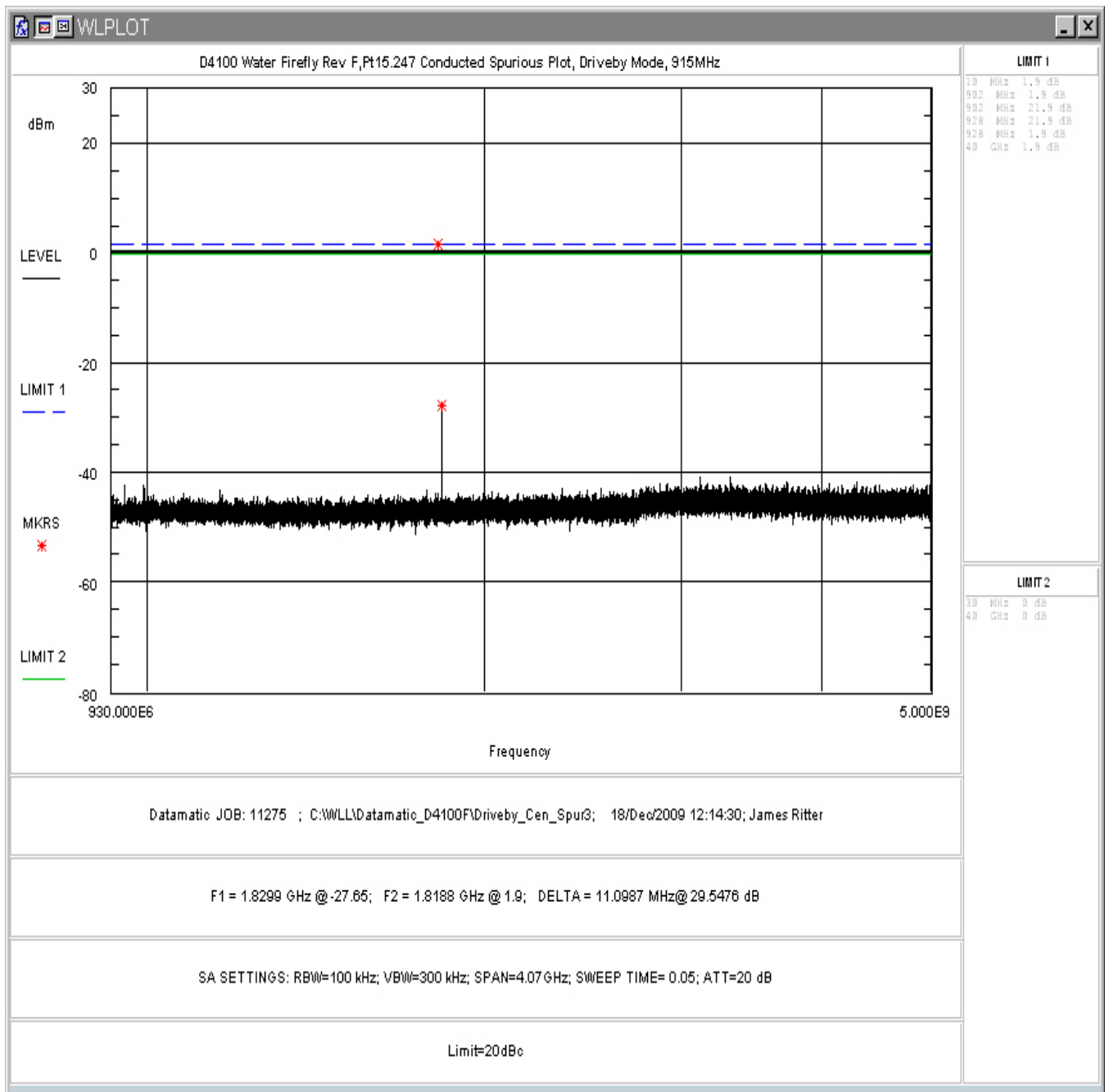


Figure 53: Conducted Spurious Emissions, Driveby Mode, Center Channel 930MHz – 5GHz

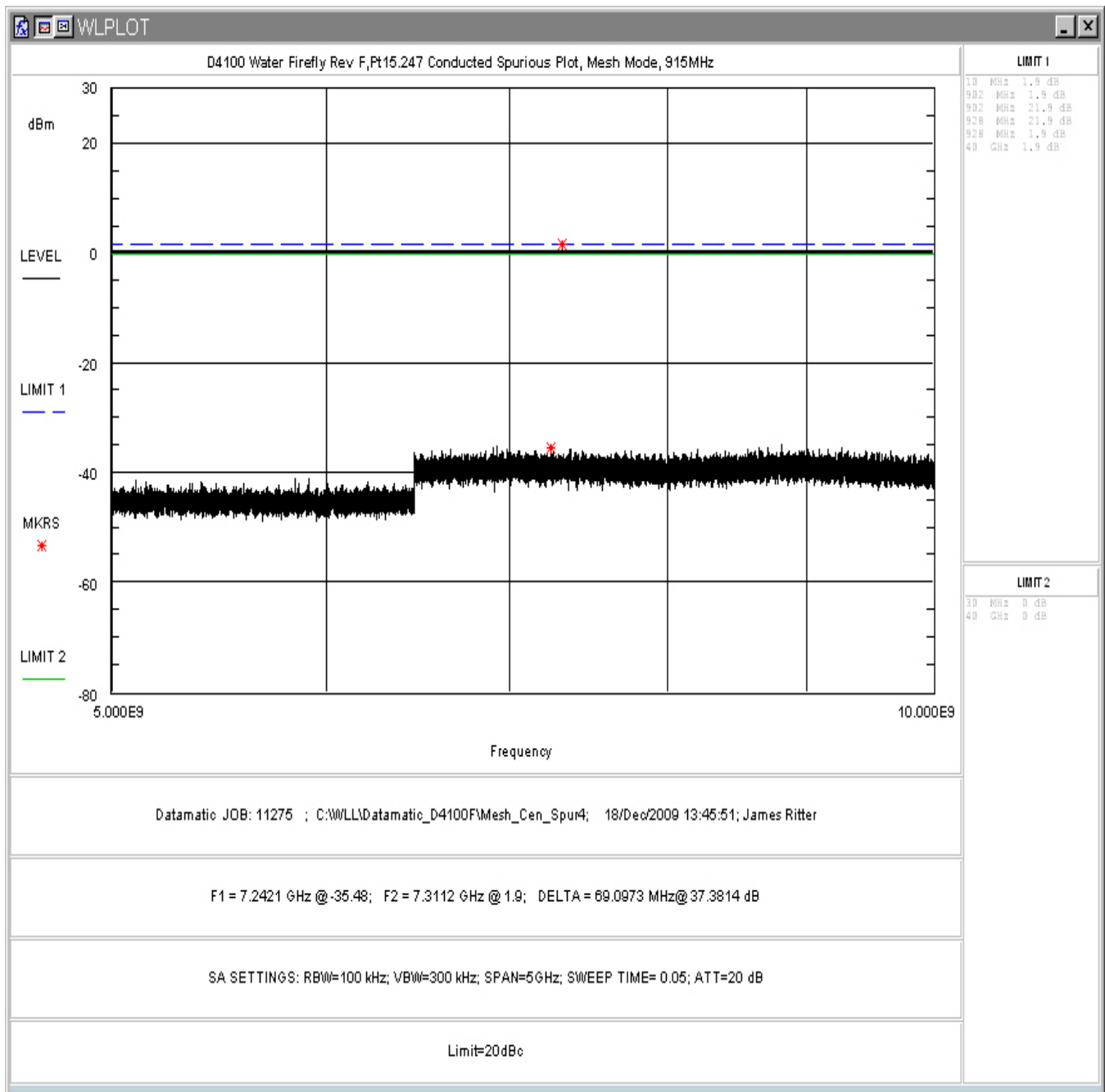


Figure 54: Conducted Spurious Emissions, Driveby Mode, Center Channel 5 – 10GHz

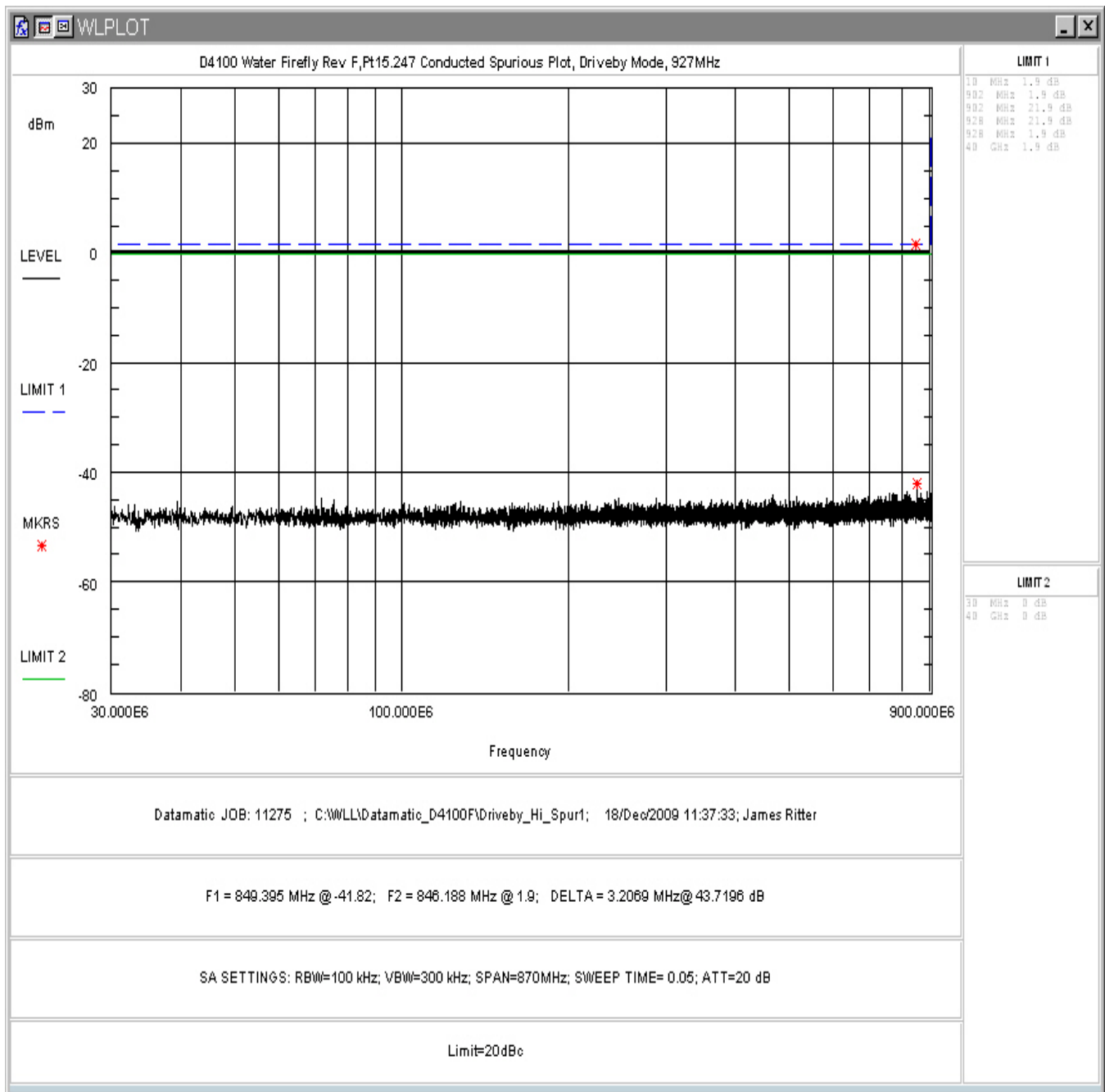


Figure 55: Conducted Spurious Emissions, Driveby Mode, High Channel 30 - 900MHz

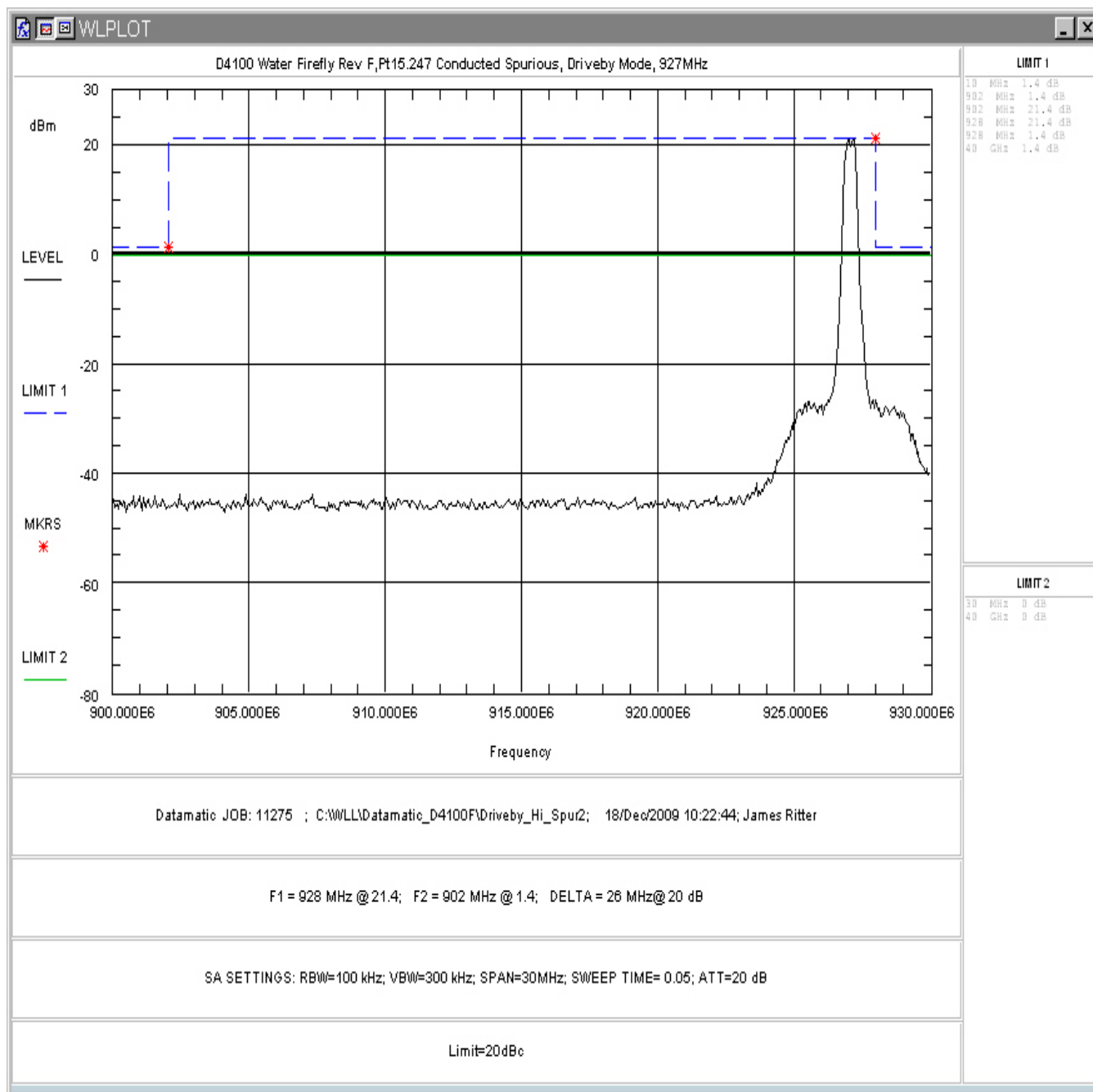


Figure 56: Conducted Spurious Emissions, Driveby Mode, High Channel 900 - 930MHz

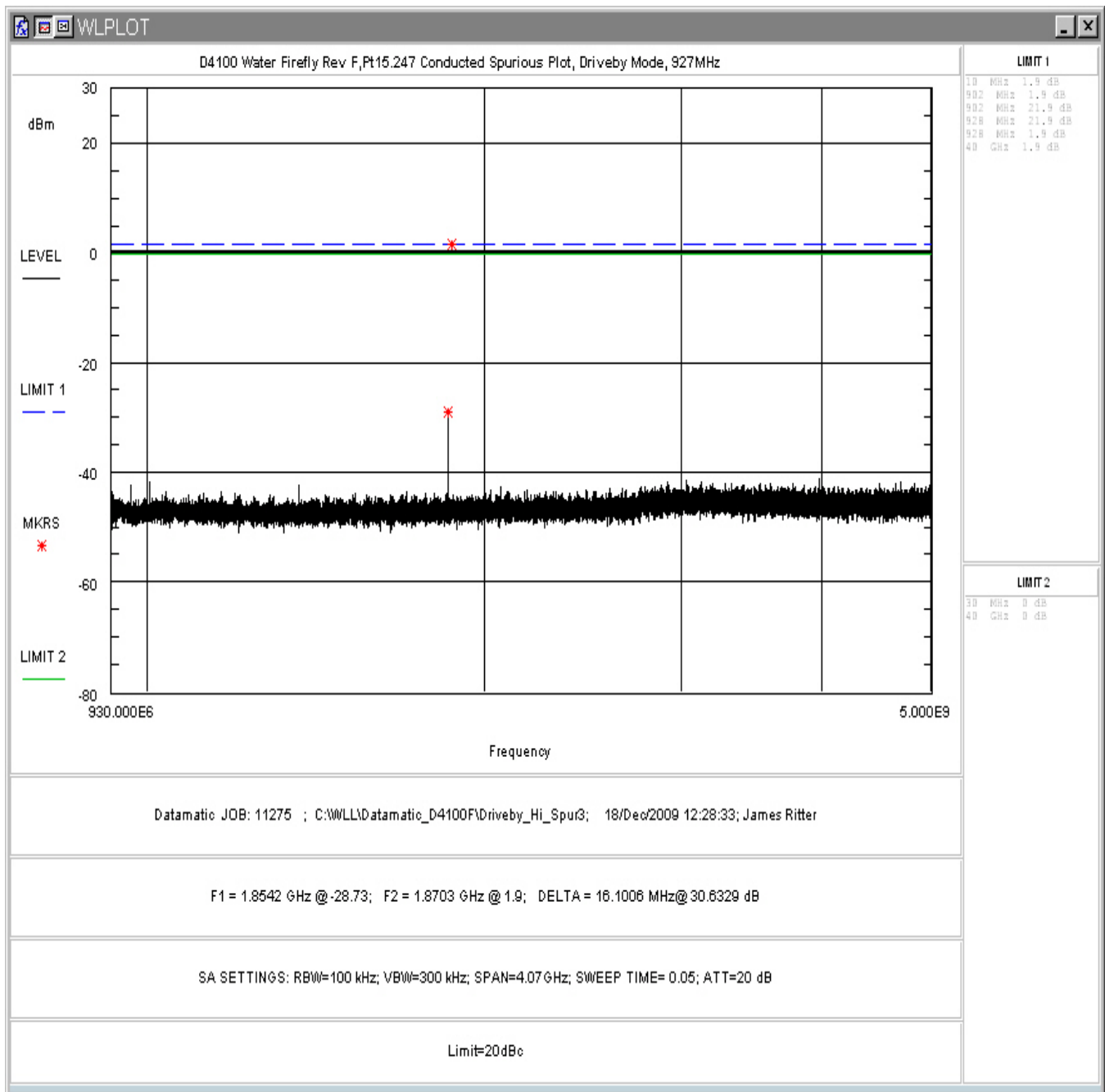


Figure 57: Conducted Spurious Emissions, Driveby Mode, High Channel 930MHz – 5GHz

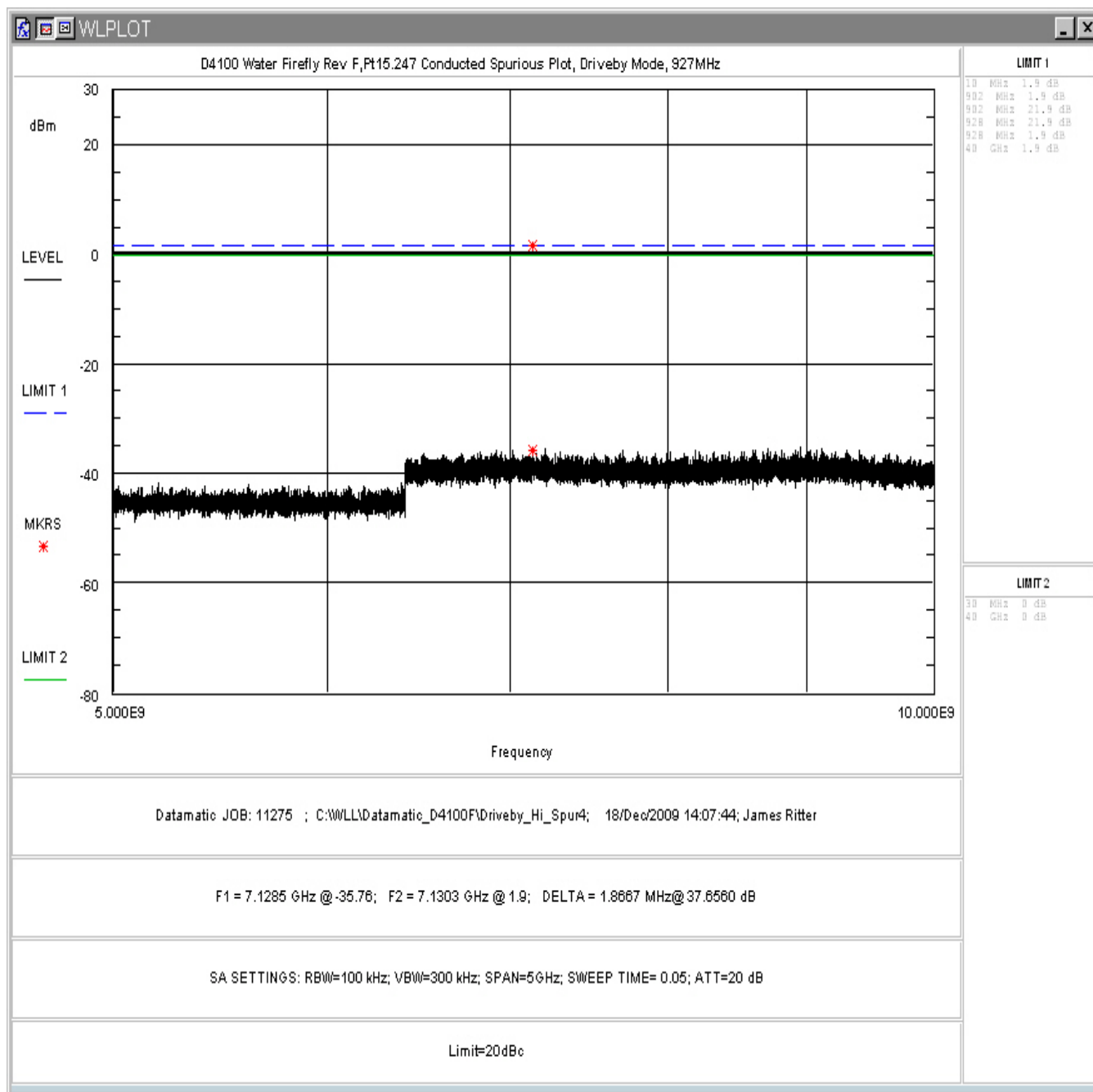


Figure 58: Conducted Spurious Emissions, Driveby Mode, High Channel 5- 10GHz

5.7 Radiated Spurious Emissions: (FCC Part 15.205, 15.209 & RSS-210 [Sect 2.2])

The EUT must comply with the requirements for radiated spurious emissions that fall within the restricted bands. These emissions must meet the limits specified in §15.205, 15.209, §15.35(b) and RSS210 Section 2.2 for peak measurements.

5.7.1 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.

Radiated emissions were tested in Mesh Mode (Driveby mode was evaluated to be the same). Three Orthogonal positions of the unit were tested with the worst case reported.

The emissions were measured using the following resolution bandwidths:

Table 10: Spectrum Analyzer Settings

Frequency Range	Resolution Bandwidth	Video Bandwidth
30MHz-1000 MHz	120kHz	>100 kHz
>1000 MHz	1 MHz	10 Hz (Avg.), 1MHz (Peak)

Table 11: Radiated Emission Test Data, Low Channel

Frequency (MHz)	Polarity H/V	Azimuth (Degree)	Ant. Height (m)	SA Level (dBuV)	Corr Factors (dB)	Corr. Level (uV/m)	Limit (uV/m)	Margin (dB)
Peak								
2707.50	V	90.00	3.20	52.67	-4.3	260.8	5000.0	-25.7
3610.00	V	270.00	2.80	53.67	-3.0	343.3	5000.0	-23.3
4512.50	V	270.00	2.54	53.83	-2.3	377.6	5000.0	-22.4
5415.00	V	180.00	3.00	52.33	0.3	425.7	5000.0	-21.4
8122.50	V	0.00	3.10	50.17	3.0	456.9	5000.0	-20.8
9025.00	V	180.00	3.10	46.17	5.2	369.6	5000.0	-22.6
Average								
2707.50	V	90.00	3.20	50.83	-4.3	211.0	500.0	-7.5
3610.00	V	270.00	2.80	48.67	-3.0	193.1	500.0	-8.3
4512.50	V	270.00	2.54	50.83	-2.3	267.3	500.0	-5.4
5415.00	V	180.00	3.00	45.15	0.3	186.2	500.0	-8.6
8122.50	V	0.00	3.10	40.67	3.0	153.0	500.0	-10.3
9025.00	V	180.00	3.10	34.83	5.2	100.2	500.0	-14.0
Non-Harmonics								
37.87	V	90.00	1.00	8.40	16.1	16.8	100.0	-15.5
168.24	V	90.00	1.30	4.30	13.5	7.7	150.0	-25.8
1097.25	V	0.00	2.60	41.20	-10.8	33.2	500.0	-23.6
Peak								
2707.50	H	270.00	2.90	51.83	-4.3	236.8	5000.0	-26.5
3610.00	H	180.00	2.50	55.33	-3.0	415.6	5000.0	-21.6
4512.50	H	250.00	3.00	56.17	-2.3	494.3	5000.0	-20.1
5415.00	H	100.00	3.20	53.50	0.3	487.0	5000.0	-20.2
8122.50	H	270.00	2.90	50.67	3.0	484.0	5000.0	-20.3
9025.00	H	190.00	2.80	48.20	5.2	466.9	5000.0	-20.6
Average								
2707.50	H	270.00	2.90	45.33	-4.3	112.0	500.0	-13.0
3610.00	H	180.00	2.50	51.33	-3.0	262.3	500.0	-5.6
4512.50	H	250.00	3.00	53.17	-2.3	349.9	500.0	-3.1
5415.00	H	100.00	3.20	48.00	0.3	258.6	500.0	-5.7
8122.50	H	270.00	2.90	41.67	3.0	171.7	500.0	-9.3
9025.00	H	190.00	2.80	34.67	5.2	98.3	500.0	-14.1
Non-Harmonics								
37.50	H	270.00	4.00	3.20	16.4	9.6	100.0	-20.4
1097.37	H	180.00	2.80	44.70	-10.8	49.7	500.0	-20.1

Table 12: Radiated Emission Test Data, Center Channel

Frequency (MHz)	Polarity H/V	Azimuth (Degree)	Ant. Height (m)	SA Level (dBuV)	Corr Factors (dB)	Corr. Level (uV/m)	Limit (uV/m)	Margin (dB)
Peak								
2745.00	V	190.00	2.50	52.50	-4.3	256.9	5000.0	-25.8
3660.00	V	190.00	2.96	55.50	-2.9	424.6	5000.0	-21.4
4575.00	V	270.00	2.89	53.67	-2.0	382.4	5000.0	-22.3
7320.00	V	180.00	2.87	49.67	3.3	446.2	5000.0	-21.0
8235.00	V	10.00	3.07	48.50	3.2	386.7	5000.0	-22.2
9150.00	V	190.00	3.10	45.00	4.8	309.9	5000.0	-24.2
Average								
2745.00	V	190.00	2.50	47.50	-4.3	144.5	500.0	-10.8
3660.00	V	190.00	2.96	53.33	-2.9	330.7	500.0	-3.6
4575.00	V	270.00	2.89	50.50	-2.0	265.5	500.0	-5.5
7320.00	V	180.00	2.87	41.00	3.3	164.4	500.0	-9.7
8235.00	V	10.00	3.07	37.17	3.2	104.9	500.0	-13.6
9150.00	V	190.00	3.10	34.83	4.8	96.1	500.0	-14.3
Non-Harmonics								
37.87	V	90.00	1.00	8.40	16.1	16.8	100.0	-15.5
168.24	V	90.00	1.30	4.30	13.5	7.7	150.0	-25.8
1094.08	V	180.00	2.80	38.50	-10.8	24.3	500.0	-26.3
Peak								
2745.00	H	290.00	2.50	51.33	-4.3	224.5	5000.0	-27.0
3660.00	H	330.00	2.43	55.17	-2.9	408.7	5000.0	-21.8
4575.00	H	90.00	2.70	53.33	-2.0	367.7	5000.0	-22.7
7320.00	H	45.00	2.75	49.67	3.3	446.2	5000.0	-21.0
8235.00	H	100.00	2.76	51.17	3.2	525.8	5000.0	-19.6
9150.00	H	10.00	3.10	47.10	4.8	394.7	5000.0	-22.1
Average								
2745.00	H	290.00	2.50	45.67	-4.3	117.0	500.0	-12.6
3660.00	H	330.00	2.43	51.67	-2.9	273.2	500.0	-5.3
4575.00	H	90.00	2.70	49.67	-2.0	241.3	500.0	-6.3
7320.00	H	45.00	2.75	39.33	3.3	135.7	500.0	-11.3
8235.00	H	100.00	2.76	42.83	3.2	201.3	500.0	-7.9
9150.00	H	10.00	3.10	37.60	4.8	132.2	500.0	-11.6
Non-Harmonics								
37.50	H	270.00	4.00	3.20	16.4	9.6	100.0	-20.4
1099.67	H	180.00	2.42	47.00	-10.8	64.8	500.0	-17.7

Table 13: Radiated Emission Test Data, High Channel

Frequency (MHz)	Polarity H/V	Azimuth (Degree)	Ant. Height (m)	SA Level (dBuV)	Corr Factors (dB)	Corr. Level (uV/m)	Limit (uV/m)	Margin (dB)
Peak								
2781.00	V	120.00	3.40	54.67	-4.3	331.2	5000.0	-23.6
3708.00	V	245.00	3.12	54.67	-2.9	386.5	5000.0	-22.2
4635.00	V	180.00	2.73	52.17	-1.8	331.8	5000.0	-23.6
7416.00	V	10.00	2.96	49.83	3.4	457.1	5000.0	-20.8
8343.00	V	0.00	3.23	48.17	3.5	381.7	5000.0	-22.3
Average								
2781.00	V	120.00	3.40	51.50	-4.3	229.9	500.0	-6.7
3708.00	V	245.00	3.12	52.00	-2.9	284.2	500.0	-4.9
4635.00	V	180.00	2.73	48.17	-1.8	209.3	500.0	-7.6
7416.00	V	10.00	2.96	40.83	3.4	162.2	500.0	-9.8
8343.00	V	0.00	3.23	37.19	3.5	107.8	500.0	-13.3
Non-Harmonics								
37.87	V	90.00	1.00	8.40	16.1	16.8	100.0	-15.5
168.24	V	90.00	1.30	4.30	13.5	7.7	150.0	-25.8
1098.00	V	100.00	2.35	45.15	-10.8	52.3	500.0	-19.6
Peak								
2781.00	H	90.00	3.10	53.83	-4.3	300.7	5000.0	-24.4
3708.00	H	270.00	3.20	53.17	-2.9	325.2	5000.0	-23.7
4635.00	H	180.00	2.83	52.67	-1.8	351.5	5000.0	-23.1
7416.00	H	200.00	3.12	50.50	3.4	493.8	5000.0	-20.1
8343.00	H	290.00	2.86	50.83	3.5	518.5	5000.0	-19.7
Average								
2781.00	H	90.00	3.10	49.67	-4.3	186.2	500.0	-8.6
3708.00	H	270.00	3.20	49.50	-2.9	213.1	500.0	-7.4
4635.00	H	180.00	2.83	47.50	-1.8	193.8	500.0	-8.2
7416.00	H	200.00	3.12	44.00	3.4	233.6	500.0	-6.6
8343.00	H	290.00	2.86	41.67	3.5	180.6	500.0	-8.8
Non-Harmonics								
37.50	H	270.00	4.00	3.20	16.4	9.6	100.0	-20.4
1099.67	H	190.00	2.70	42.50	-10.8	38.6	500.0	-22.2

5.8 Receiver Radiated Spurious Emissions: (§15.209, RSS-210 [Sect 2.6])

The EUT must comply with the requirements for radiated spurious emissions from the receiver. These emissions must meet the limits specified in §15.209 and RSS-210.

5.8.1 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 emissions were measured using the following resolution bandwidths:

Three Orthogonal positions of the unit were tested to 3GHz with the worst case reported.

Measurements below 1000MHz were taken using a Peak Detector function (where peak readings were closer than 6db below the limit a CISPR Quasi-peak detector was utilized). Measurements above 1000MHz were taken using a reduced Video Bandwidth setting of 10Hz in order to obtain the Average reading. Instrument Bandwidth settings are listed below.

Frequency Range	Resolution Bandwidth	Video Bandwidth
30MHz-1000 MHz	120kHz	> 100 kHz
>1000 MHz	1 MHz	10 Hz (Avg.)

5.8.2 Test Summary

The EUT complied with the requirements for receiver radiated emissions FCC 15.209 IC RSS-Gen. Receiver Radiated Spurious Test Data.

Table 14: Receiver Radiated Emission Test Data

Frequency (MHz)	Polarity H/V	Azimuth (Degree)	Ant. Height (m)	SA Level (dBuV)	Corr Factors (dB)	Corr. Level (uV/m)	Limit (uV/m)	Margin (dB)
37.87	V	90.00	1.00	8.40	16.1	16.8	100.0	-15.5
45.53	V	90.00	1.10	5.90	11.2	7.1	100.0	-22.9
51.44	V	270.00	1.20	10.50	8.6	9.0	100.0	-20.9
60.01	V	170.00	1.10	10.30	7.2	7.5	100.0	-22.5
76.27	V	180.00	1.20	6.60	9.6	6.4	100.0	-23.8
168.24	V	90.00	1.30	4.30	13.5	7.7	150.0	-25.8
205.48	V	45.00	1.40	3.70	13.9	7.6	150.0	-26.0
235.93	V	45.00	1.58	11.80	13.4	18.2	200.0	-20.8
37.50	H	270.00	4.00	3.20	16.4	9.6	100.0	-20.4
49.01	H	280.00	4.00	4.50	9.4	5.0	100.0	-26.1
55.98	H	270.00	3.81	9.00	7.6	6.7	100.0	-23.4
61.46	H	190.00	3.80	8.30	7.7	6.3	100.0	-24.0
76.27	H	0.00	3.80	5.30	9.6	5.5	100.0	-25.1
77.99	H	180.00	3.87	5.90	9.7	6.0	100.0	-24.4
85.79	H	270.00	3.60	6.20	9.8	6.3	100.0	-24.0
205.48	H	180.00	3.38	8.50	13.9	13.1	150.0	-21.2
235.93	H	190.00	3.50	10.60	13.4	15.8	200.0	-22.0

5.9 AC Conducted Emissions (FCC Pt.15.207, RSS-Gen [7.2.2])

5.9.1 Requirements

Test Arrangement: Table Top

Compliance Standard: FCC Class B

FCC Compliance Limits		
Frequency	Quasi-peak	Average
0.15 - 0.5MHz	66 to 56dB μ V	56 to 46dB μ V
0.5 - 5MHz	56dB μ V	46dB μ V
5 - 30MHz	60dB μ V	50dB μ V

5.9.2 Test Data

As this module will only be powered from a battery pack AC conducted emissions testing is not required.