Washington Laboratories, Ltd.

FCC Certification Test Report
For the
Airorlite Communications, Inc.
Model 50289 Bi-Directional Booster (Downlink)

FCC ID: UT650289BAX8800DL

WLL JOB# **9864**

Revision 1 August 30, 2007

Prepared for:

Airorlite Communications, Inc.
17-01 Pollitt Drive
Fair Lawn, NJ 07410

Prepared By:

Washington Laboratories, Ltd.
7560 Lindbergh Drive
Gaithersburg, Maryland 20879

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Prepared by: John P. Repella
QA Manager

Reviewed by: Steven D. Koster
EMC Operations Manager

Abstract

This report has been prepared on behalf of Airorlite Communications, Inc. to support the attached Application for Equipment Authorization. The test report and application are submitted for a Licensed Transmitter under Part 90 of the FCC Rules. This Certification Test Report documents the test configuration and test results for an Airorlite Communications, Inc. Model 50289 Bi-Directional Booster (Downlink).

Testing was performed on an Open Area Test Site (OATS) of Washington Laboratories, Ltd, 7560 Lindbergh Drive, Gaithersburg, MD 20879. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. Washington Laboratories, Ltd. has been accepted by the FCC and approved by NIST NVLAP (NVLAP Lab Code: 200066-0) as an independent FCC test laboratory.

The Airorlite Communications, Inc. Model 50289 Bi-Directional Booster (Downlink) complies with the limits for a Licensed Transmitter device under FCC Part 90.

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1 Introduction

1.1 Compliance Statement

The Airorlite Communications, Inc. Model 50289 Bi-Directional Booster (Downlink) complies with the limits for a Licensed Transmitter device under FCC Part 90.

1.2 Test Scope

Tests for radiated and conducted (at antenna terminal) emissions were performed. All measurements were performed in accordance with the 2003 version of ANSI C63.4. The measurement equipment conforms to ANSI C63.2 Specifications for Electromagnetic Noise and Field Strength Instrumentation.

1.3 Contract Information

Customer:	Airorlite Communications, Inc. 17-01 Pollitt Drive Fair Lawn, NJ 07410
Purchase Order Number:	001700
Quotation Number:	63230

1.4 Test Dates

Testing was performed on the following date(s):	June 25, 2007 to July 3, 2007

1.5 Test and Support Personnel

Washington Laboratories, LTD	John Repella, Adam Black
Client Representative	Lee Masoian, Rick Kieselowsky

1.6 Abbreviations

A	**A**mpere
ac	**a**lternating **c**urrent
AM	Amplitude Modulation
Amps	**Amp**ere**s**
b/s	**b**its per **s**econd
BW	**B**and**W**idth
CE	**C**onducted **E**mission
cm	**C**enti**m**eter
CW	**C**ontinuous **W**ave
dB	**decibel**
dc	**d**irect **c**urrent
EMI	**E**lectro**m**agnetic **I**nterference
EUT	**E**quipment **U**nder **T**est
FM	**F**requency **M**odulation
G	**g**iga - prefix for 10^9 multiplier
Hz	**H**ertz
IF	**I**ntermediate **F**requency
k	**k**ilo - prefix for 10^3 multiplier
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
M	**M**ega - prefix for 10^6 multiplier
m	**M**eter
µ	**m**icro - prefix for 10^{-6} multiplier
NB	**N**arrow**b**and
QP	**Q**uasi-**P**eak
RE	**R**adiated **E**missions
RF	**R**adio **F**requency
rms	**r**oot-**m**ean-**s**quare
SN	**S**erial **N**umber
S/A	**S**pectrum **A**nalyzer
V	**V**olt

2 Equipment Under Test

2.1 EUT Identification & Description

The Airorlite Communications, Inc. Model 50289 Bi-Directional Booster is an eight channel bi-directional amplifier utilizing 16 channels of synchronized down-up conversions.

The multi-channel booster is divided into two independent 8 channel systems (8 high bands and 8 low bands) for full duplex operations. Downlink signals are received at the roof antenna, 8 selected frequencies are processed (filtering and amplification), and rebroadcast on radiating cable. Conversely, uplink signals induced onto radiating cable are similarly processed and rebroadcast on the roof antenna. The downlink channels are the high band signals (851-869 MHz), and the 8 uplink channels are low band (806-824 MHz).

Each system consisting of a LNA/8-way splitter, 8 channel modules (down-up converters with synthesized LO), 8-way combiner, and RF power amplifiers with an 8-way power combiner. In addition a duplexer combines the uplink RF output and downlink RF input to a common “Off the Air” antenna.

The RF signal flow of the two systems is identical. RF band pass filters internal to the system modules determine high band or low band operations.

Table 1. Device Summary

ITEM	DESCRIPTION
Manufacturer:	Airorlite Communications, Inc.
FCC ID:	UT650289BAX8800DL
Model:	Model 50289 Bi-Directional Booster (Downlink)
FCC Rule Parts:	§90
Frequency Range:	851 - 869MHz
Maximum Output Power:	223.4mW (23.49dBm)
Antenna Gain	-60dBm (Leaky Coax)
Modulation:	Depends on system
Necessary Bandwidth:	N/A
Keying:	N/A
Type of Information:	Depends on system
Number of Channels:	8
Power Output Level	Fixed
Antenna Connector	N-type
Frequency Tolerance:	N/A
Emission Type(s):	F1E
Interface Cables:	N/A
Power Source & Voltage:	120Vac

2.2 Test Configuration

The Model 50289 Bi-Directional Booster (Downlink) was configured with the Uplink unit and a signal generator. See diagram below.

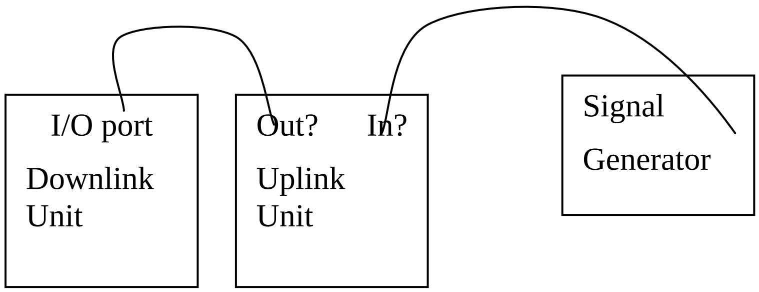

Figure 1. Test Configuration.

2.3 Testing Algorithm

A signal Generator was setup and used to send an RF signal into the RF input port on the unit under test. The signal was set to -60dBm with FM modulation at 2.5kHz per the client. The client has determined that this is the highest signal expected to be present at the input.

Worst case emission levels are provided in the test results data.

2.4 Test Location

All measurements herein were performed at Washington Laboratories, Ltd. test center in Gaithersburg, MD. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. Washington Laboratories, Ltd. has been accepted by the FCC and approved by NIST NVLAP (NVLAP Lab Code: 200066-0) as an independent FCC test laboratory.

2.5 Measurements

2.5.1 References

ANSI C63.2 Specifications for Electromagnetic Noise and Field Strength Instrumentation

ANSI C63.4 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

Land Mobile FM or PM Communications Equipment Measurement and Performance Standards (ANSI/TIA/EIA-603-93)

2.6 Measurement Uncertainty

All results reported herein relate only to the equipment tested. For the purposes of the measurements performed by Washington Laboratories, the measurement uncertainty is ±2.3 dB. This has been calculated for a *worst-case situation* (radiated emissions measurements performed on an open area test site).

The following measurement uncertainty calculation is provided:

$$\text{Total Uncertainty} = (A^2 + B^2 + C^2)^{1/2}/(n-1)$$

where:

A = Antenna calibration uncertainty, in dB = 2 dB

B = Spectrum Analyzer uncertainty, in dB = 1 dB

C = Site uncertainty, in dB = 4 dB

n = number of factors in uncertainty calculation = 3

Thus, Total Uncertainty = $0.5\,(2^2 + 1^2 + 4^2)^{1/2} = \pm 2.3$ dB.

3 Test Equipment

Table 2 shows a list of the test equipment used for measurements along with the calibration information.

Table 2: Test Equipment List

Site 1 List:

WLL Asset #	Manufacturer Model/Type	Function	Cal. Due
00070	HP, 85685A	Preselector, RF w/opt 8ZE	07/03/2007
00074	HP, 8593A	Analyzer, Spectrum	10/13/2007
00066	HP, 8449B	Pre-Amplifier, RF. 1-26.5GHz	08/01/2007
00001	A.H., Systems, SAS-200/518	Antenna, LP, 1-18GHz	04/05/2008
00004	ARA, DRG-118/A	Antenna, DRG, 1-18GHz	02/02/2009
00028	EMCO,3146	Antenna, Log Periodic	09/15/2008
00382	Sunol,JB1	Antenna, Biconlog	02/2/2008
00068	HP, 85650A	Adapter, QP	07/03/2007
00072	HP, 8568B	Analyzer, Spectrum	07/03/2007

4 Test Results

4.1 RF Power Output: (FCC Part §2.1046 & § 90.219)

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.

Table 3. RF Power Output

Frequency	Level	Antenna Gain	ERP µW	Limit § 90.219	Pass/Fail
Low Channel 851.013MHz	22.5 dBm	-60dBm	0.178	5 W ERP	Pass
Mid Channel 861.313MHz	22.16 dBm	-60dBm	0.166	5 W ERP	Pass
High Channel 868.988MHz	23.49 dBm	-60dBm	0.223	5 W ERP	Pass

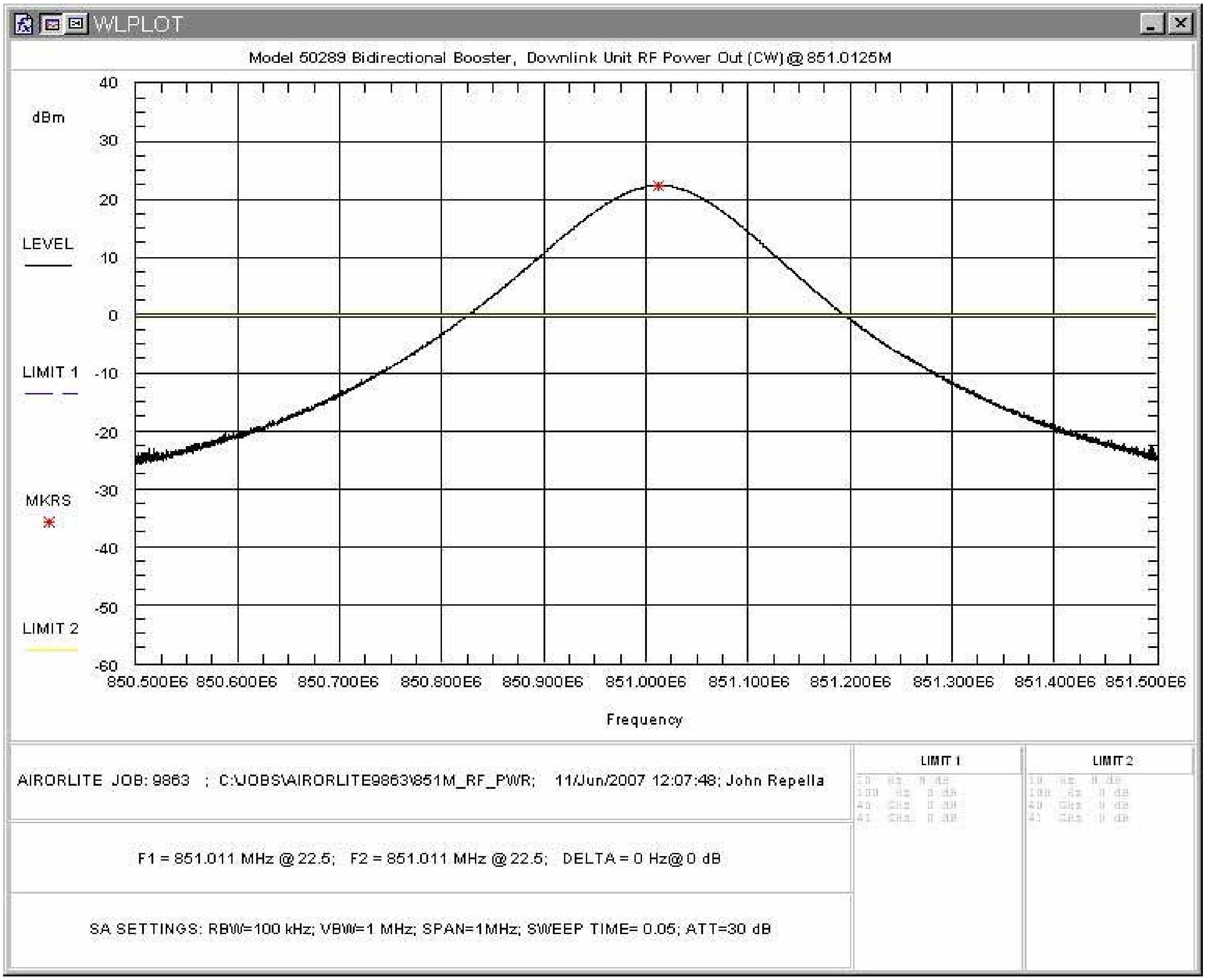

Figure 4-1. RF Peak Power, Low Channel, Carrier Wave

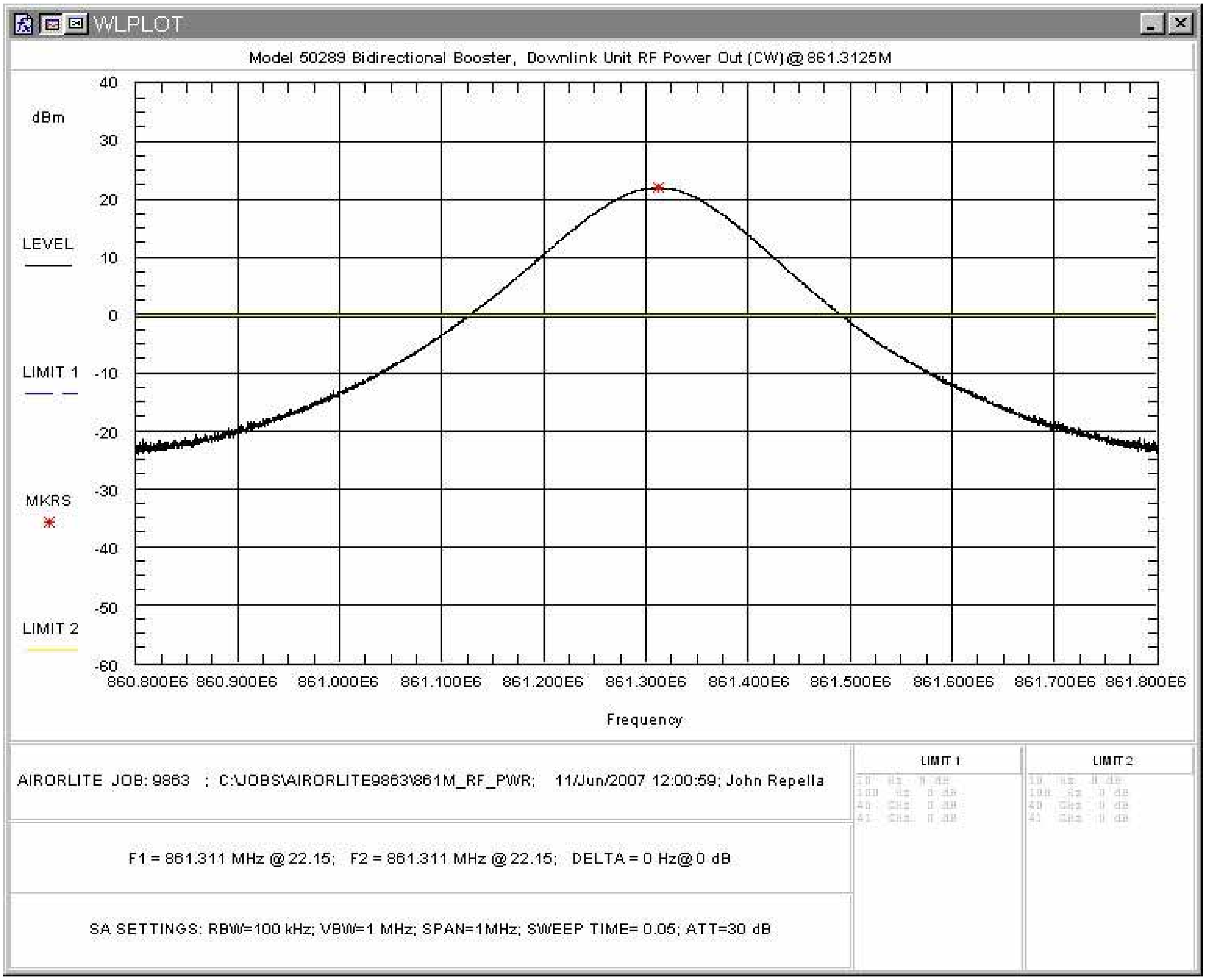

Figure 4-2. RF Peak Power, Mid Channel, Carrier Wave

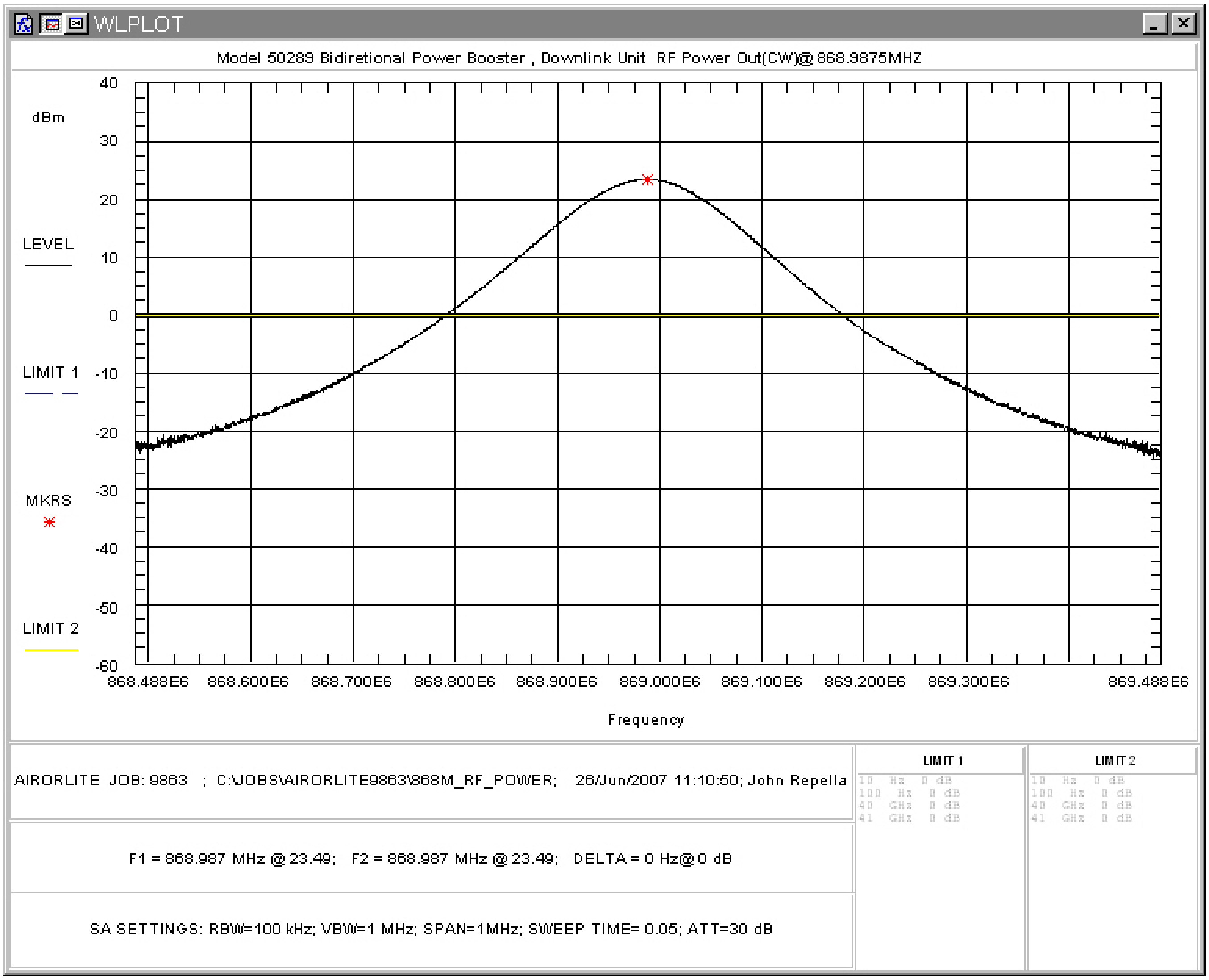

Figure 4-3. RF Peak Power, High Channel, Carrier Wave

4.2 Occupied Bandwidth: (FCC Part §2.1049)

Occupied bandwidth was performed by coupling the output of the EUT to the input of a spectrum analyzer.

At full modulation, the occupied bandwidth was measured as shown:

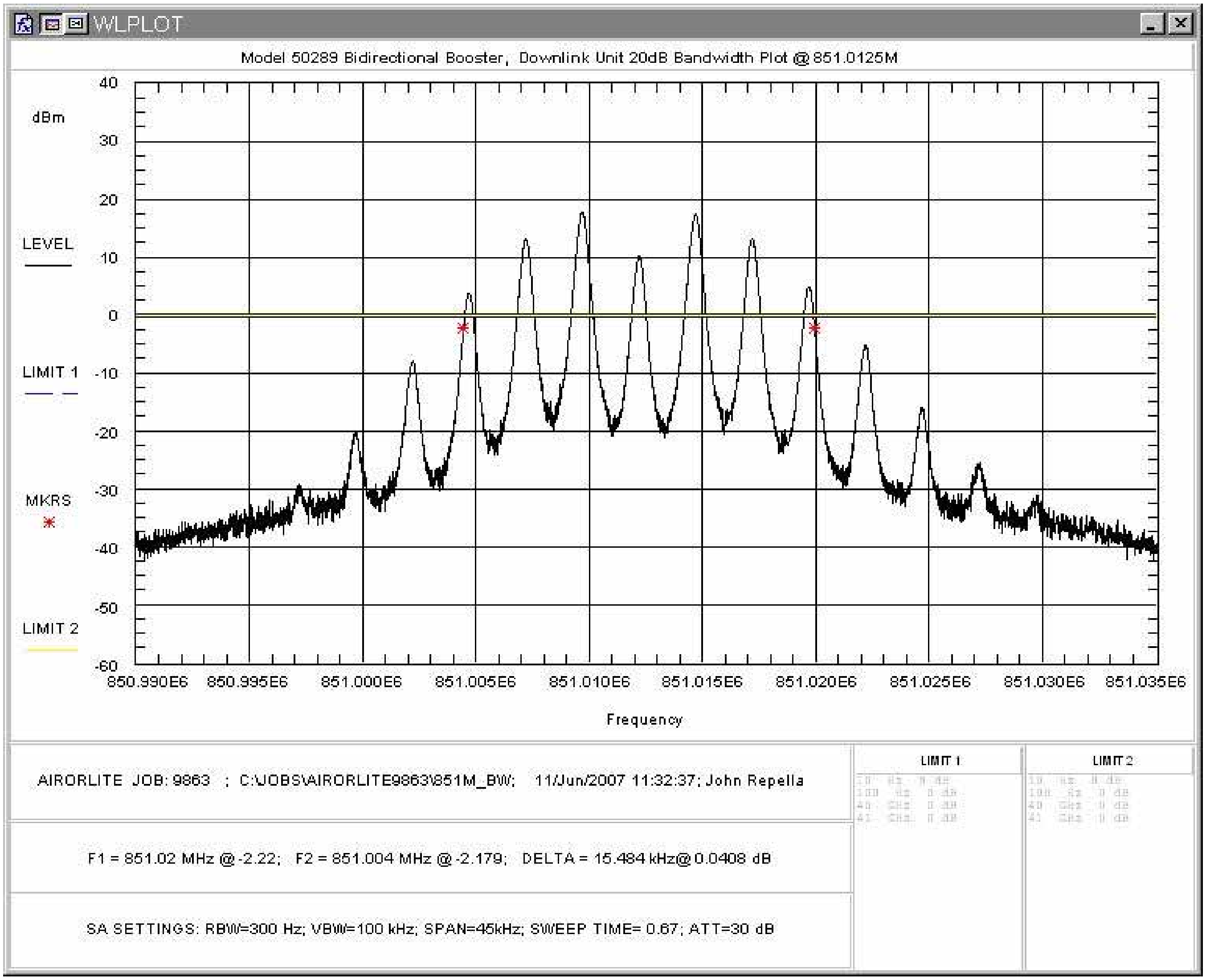

Figure 4-4. Occupied Bandwidth, Low Channel

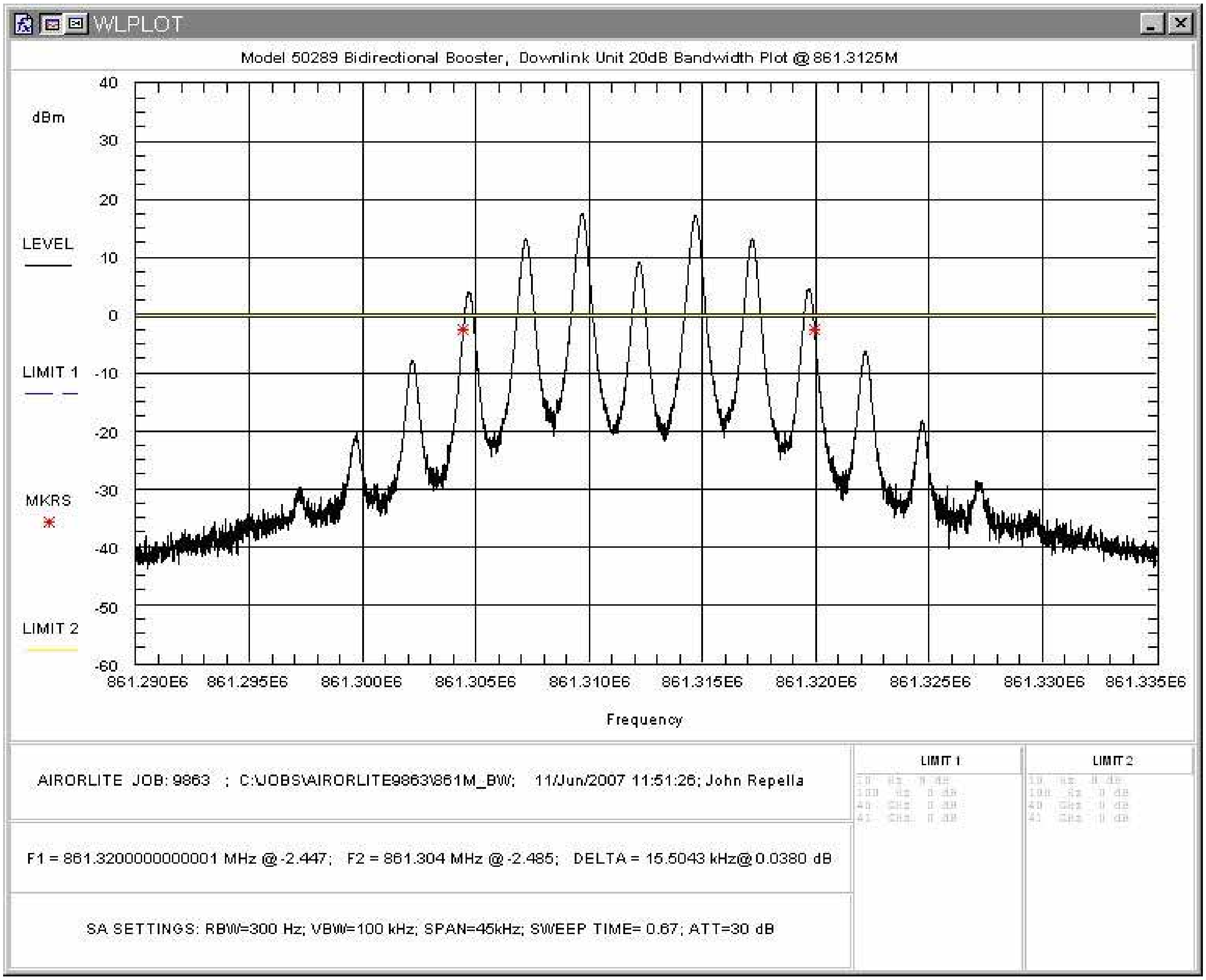

Figure 4-5. Occupied Bandwidth, Mid Channel

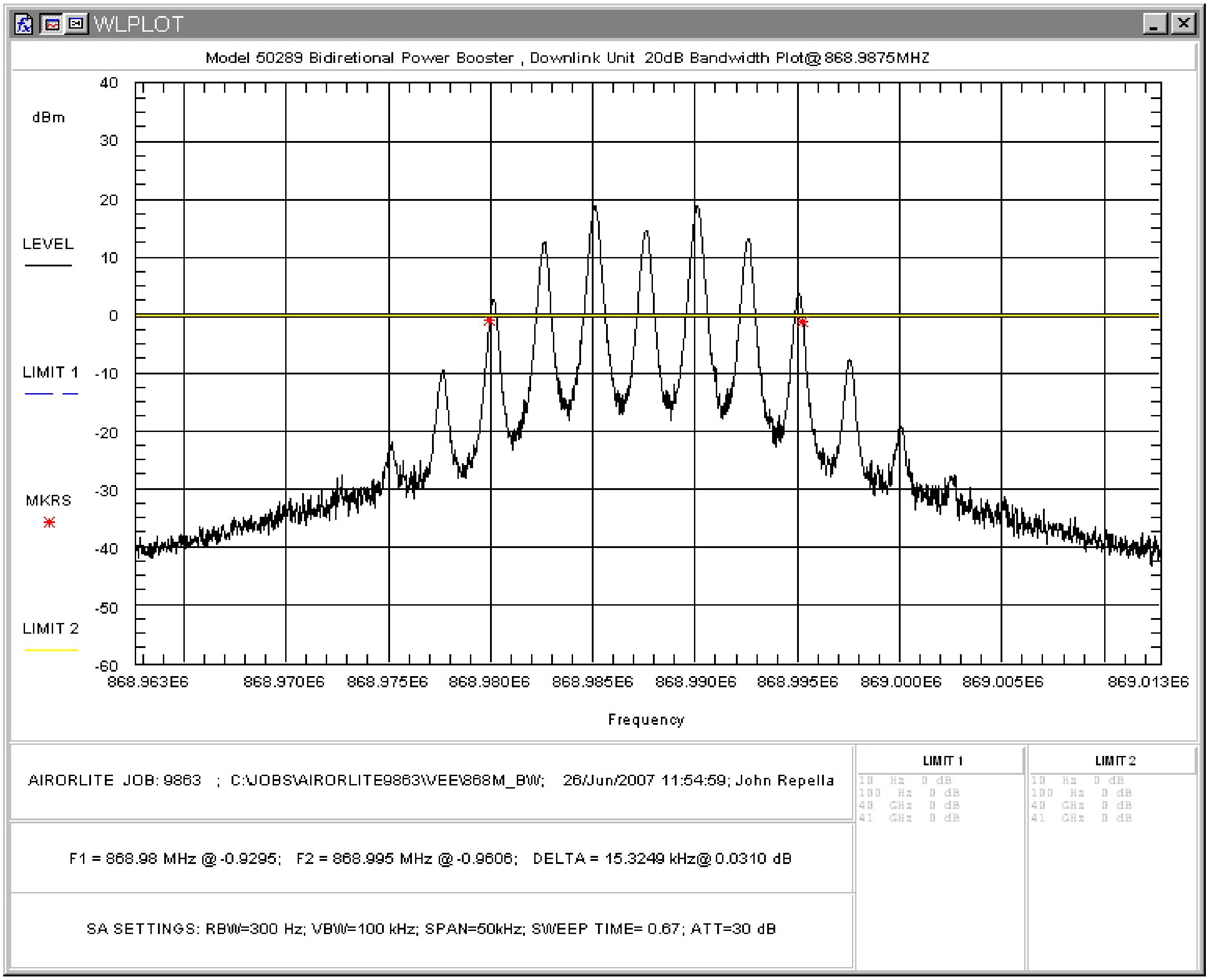

Figure 4-6. Occupied Bandwidth, High Channel

Table 4 provides a summary of the Occupied Bandwidth Results.

Table 4. Occupied Bandwidth Results

Frequency	Bandwidth	Limit	Pass/Fail
Low Channel: 851.0125MHz	15.484kHz	25kHz	Pass
Mid Channel: 861.3125MHz	15.504kHz	25kHz	Pass
High Channel: 868.9875MHz	15.324kHz	25kHz	Pass

4.3 Bandwidth Rejection

Bandwidth Rejection was performed by sweeping from below through the channel band with the Spectrum Analyzer on Max hold. The client attests that maximum input for the uplink should be -60dBm.

The Bandwidth Rejection was measured as shown:

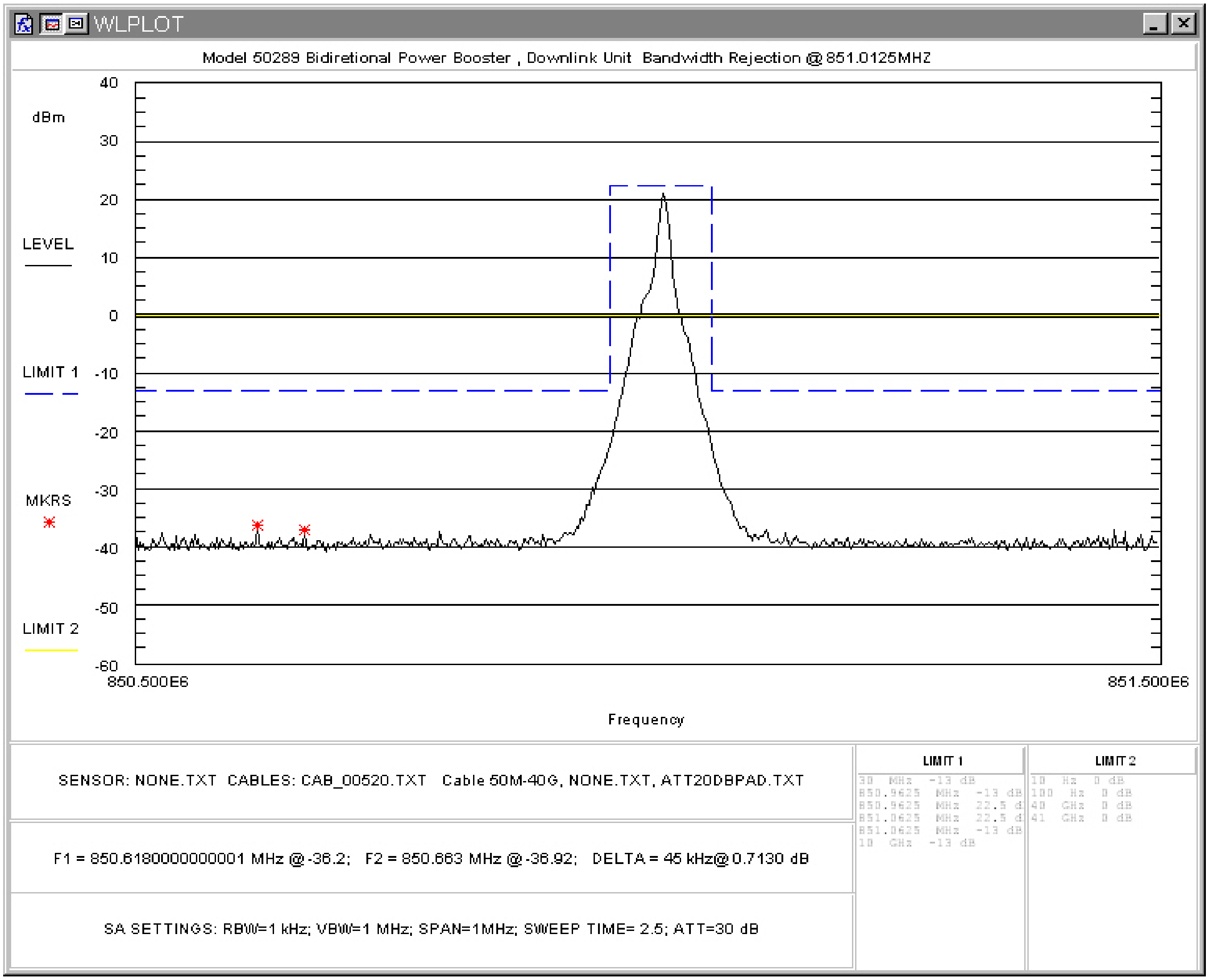

Figure 4-7. Bandwidth Rejection, Low Channel

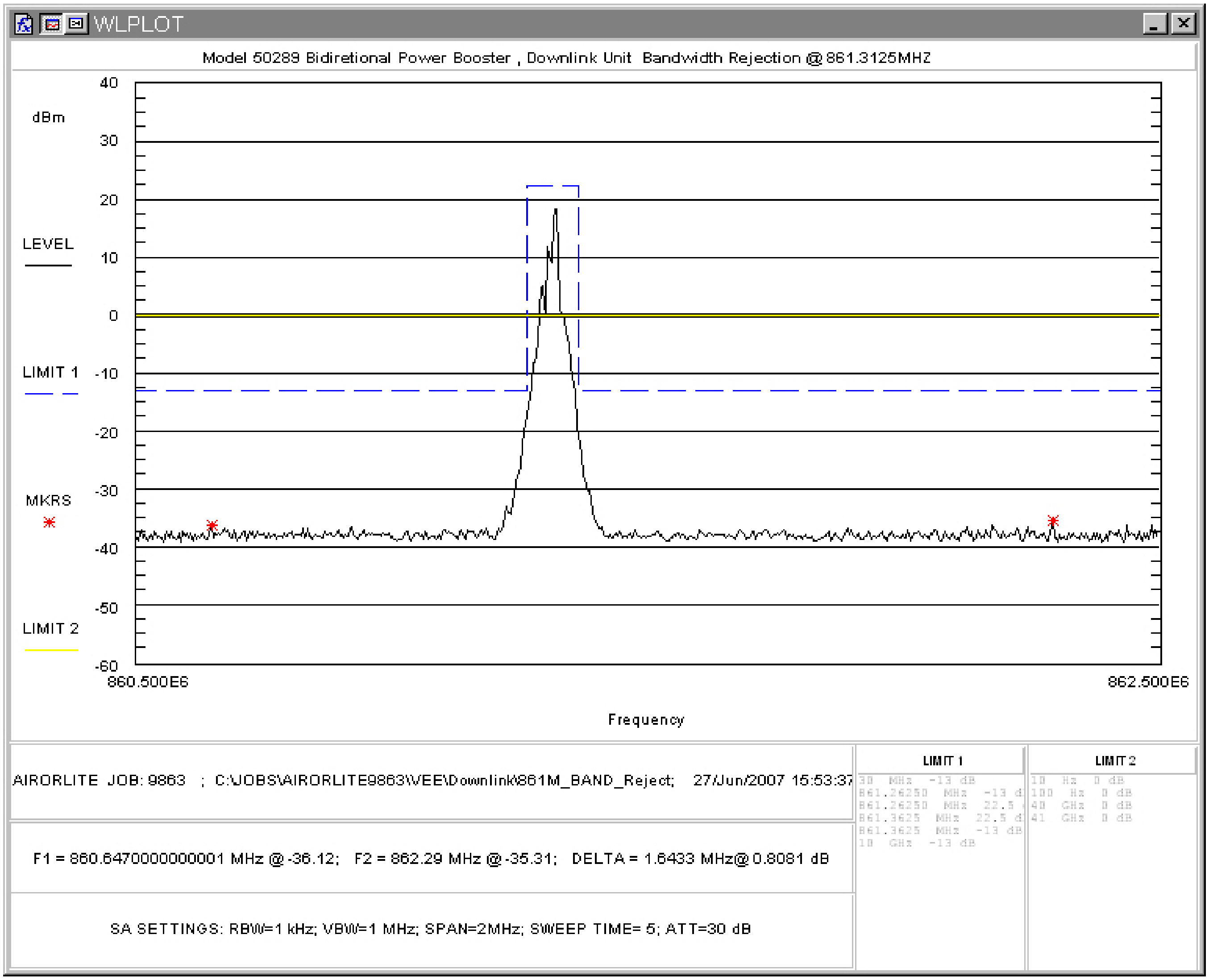

Figure 4-8. Bandwidth Rejection, Mid Channel

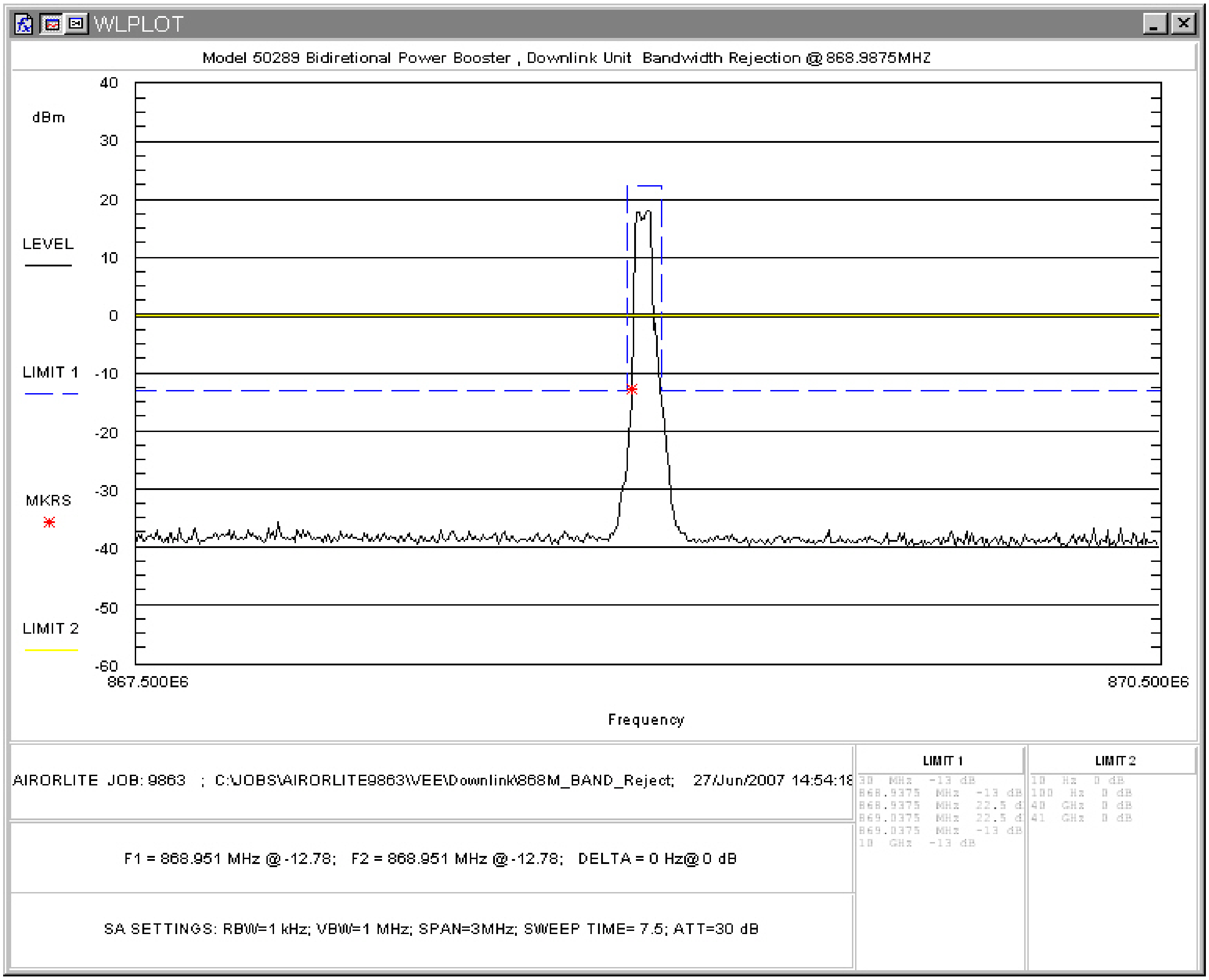

Figure 4-9. Bandwidth Rejection, High Channel

4.4 Conducted Spurious Emissions at Antenna Terminals (FCC Part §2.1051)

The following are plots of the conducted spurious emissions data.

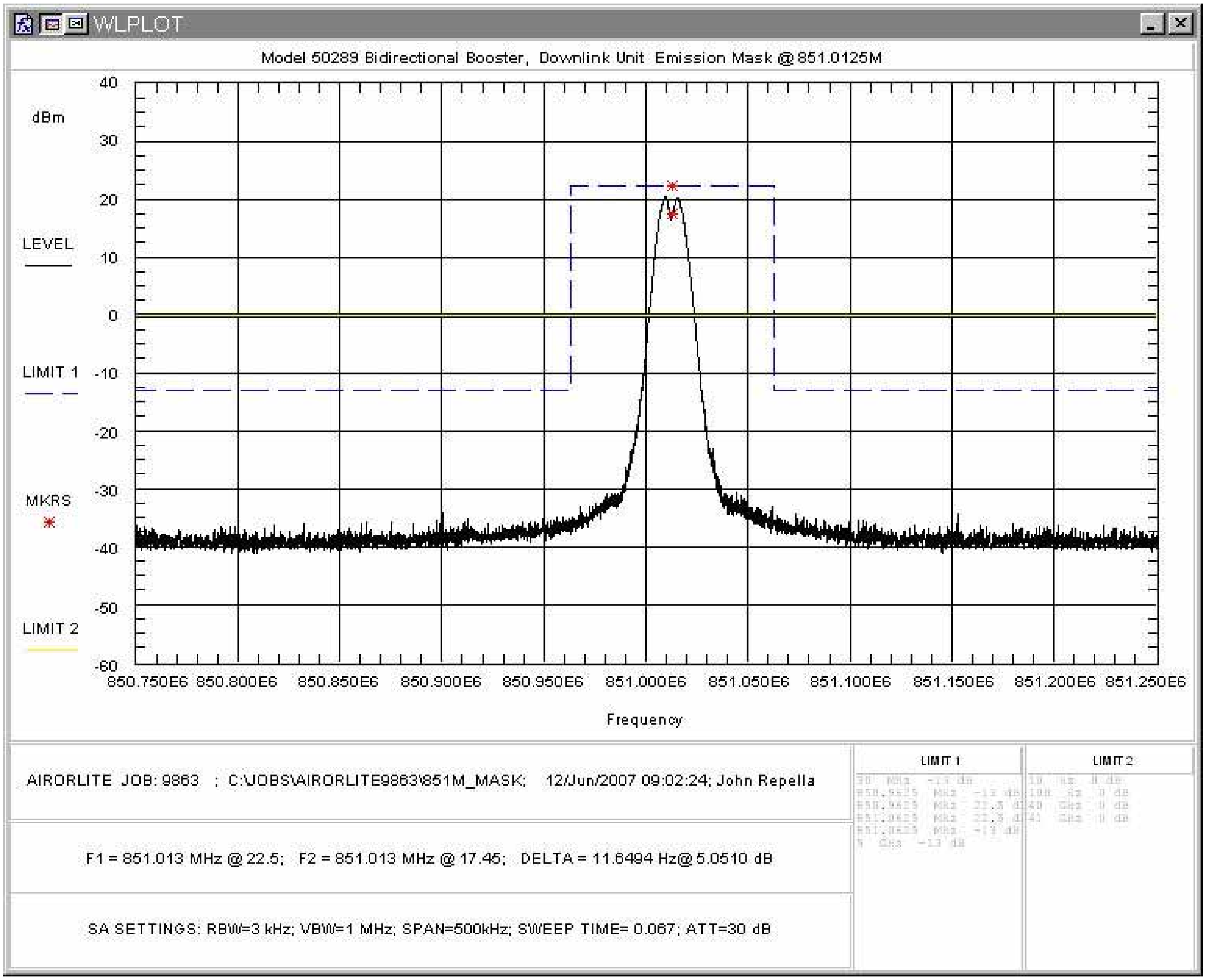

Figure 4-10. Conducted Spurious Emissions, Low Channel Inband

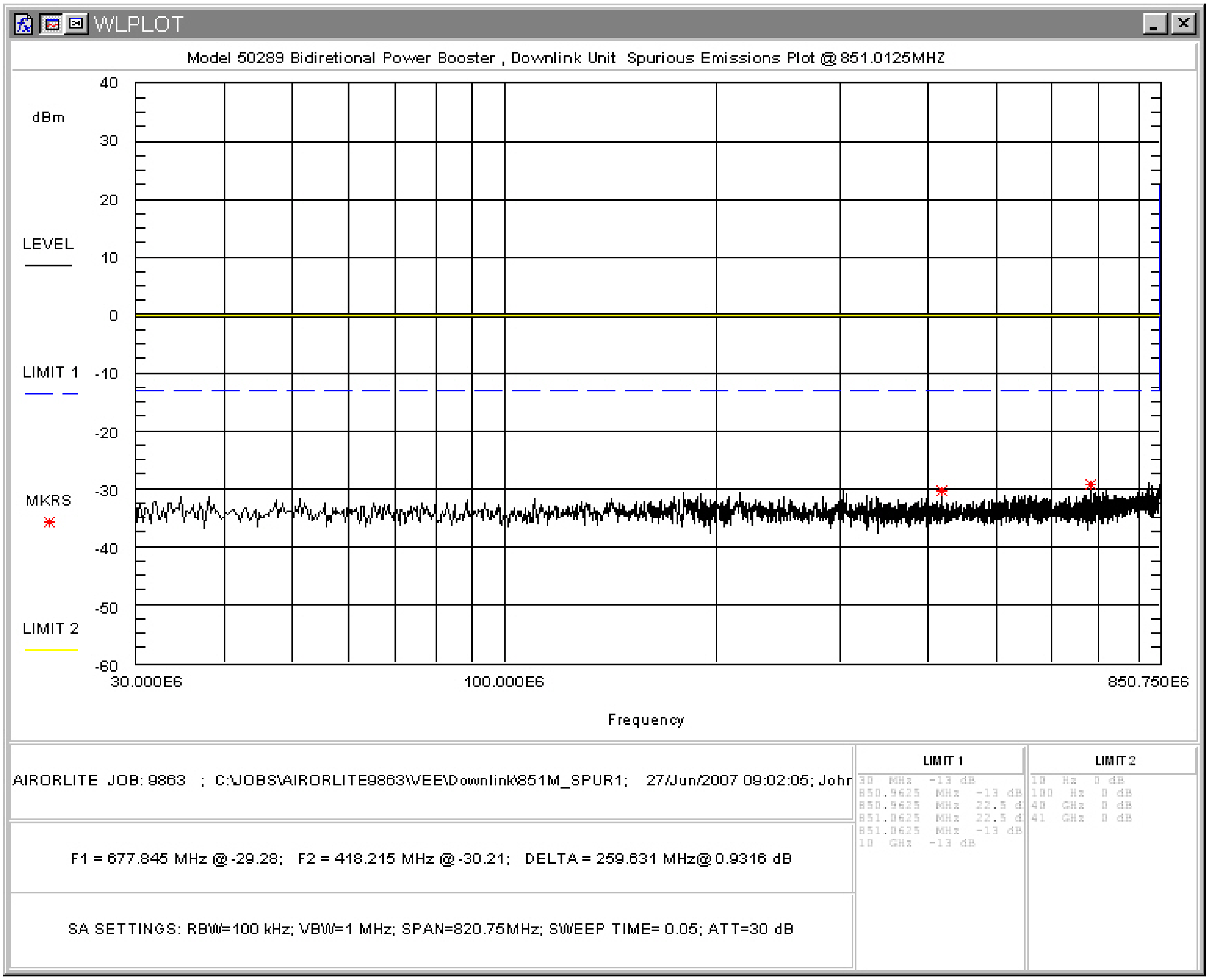

Figure 4-11. Conducted Spurious Emissions, Low Channel 30 – 850MHz

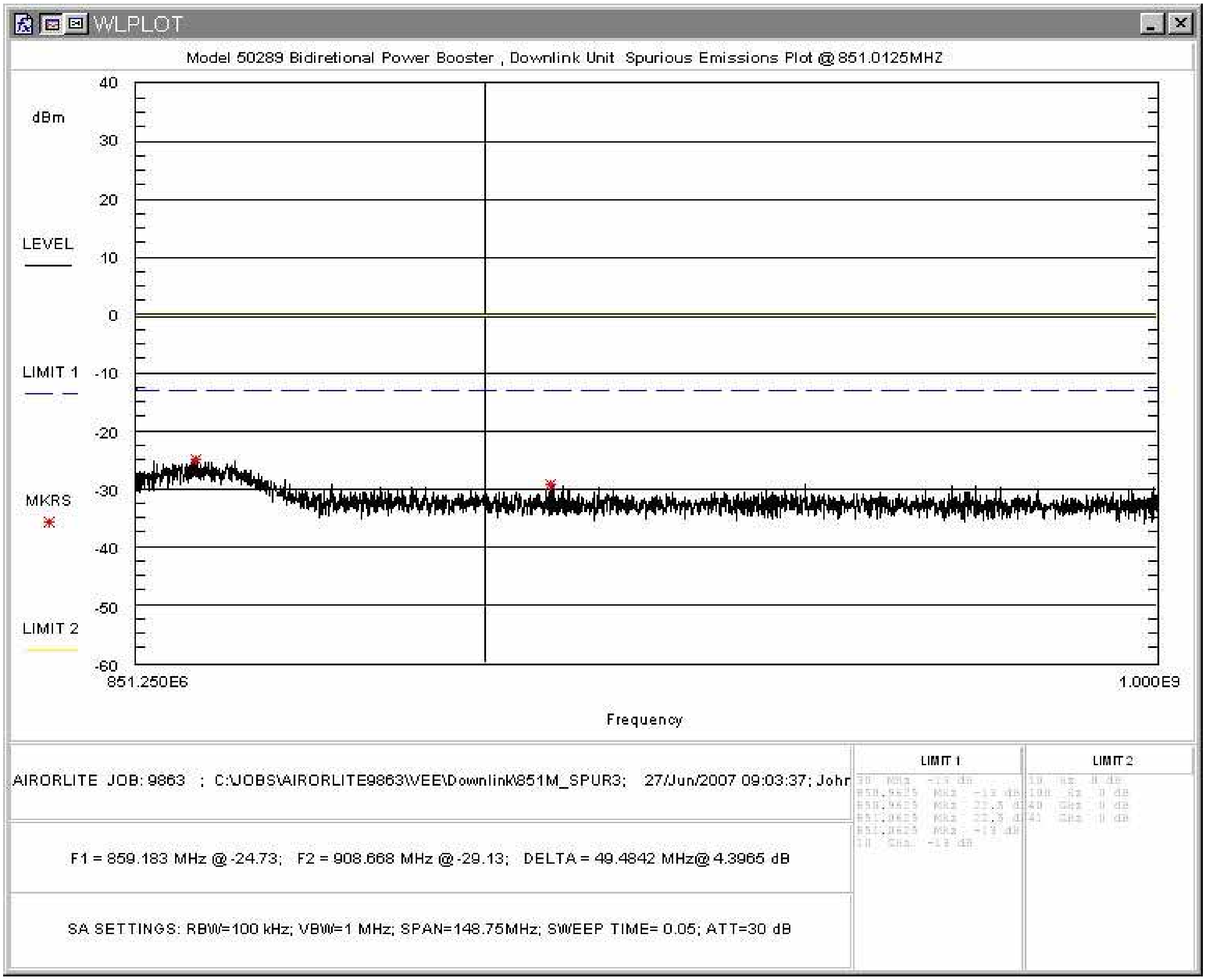

Figure 4-12. Conducted Spurious Emissions, Low Channel 851 – 1000MHz

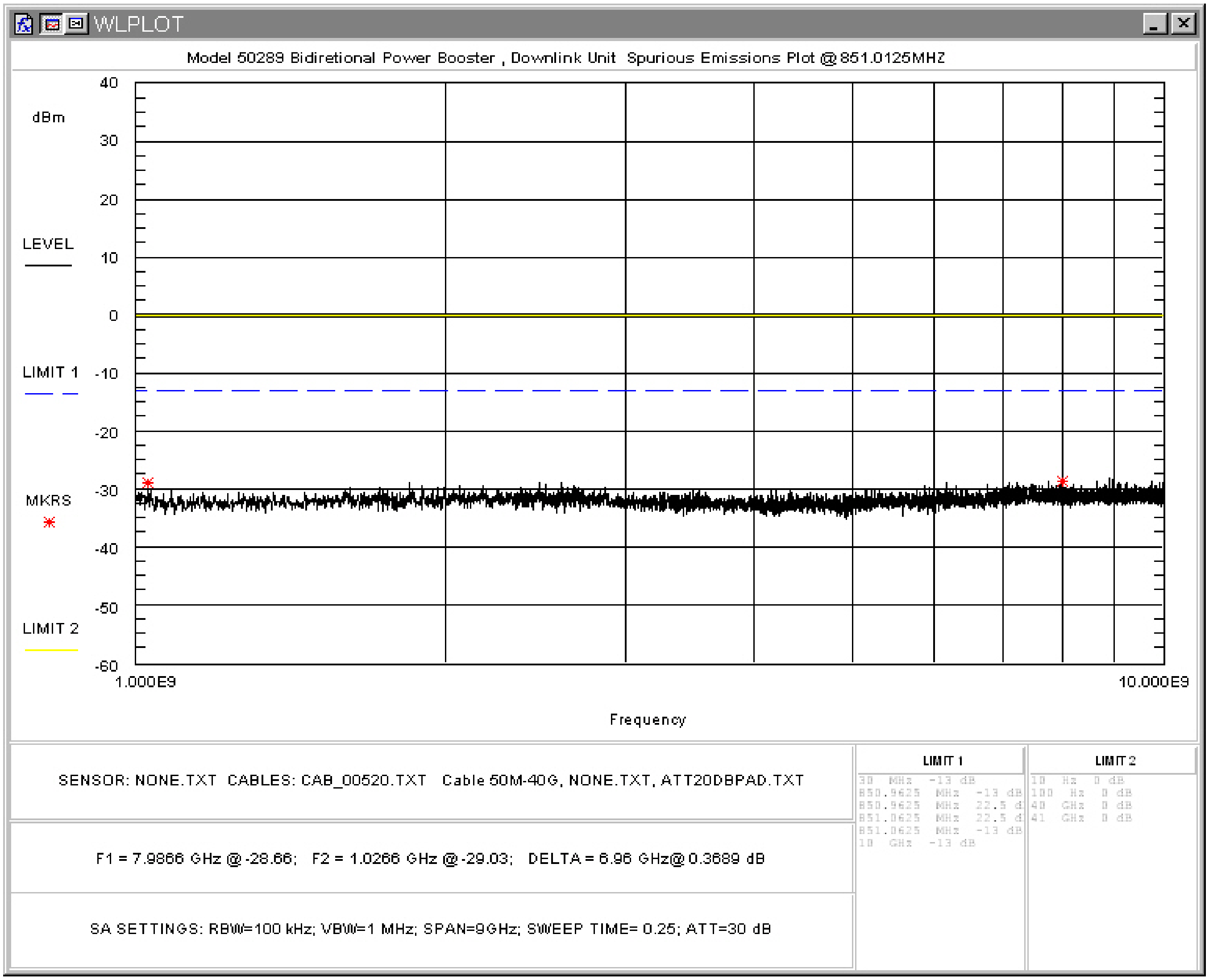

Figure 4-13. Conducted Spurious Emissions, Low Channel 1 – 10GHz

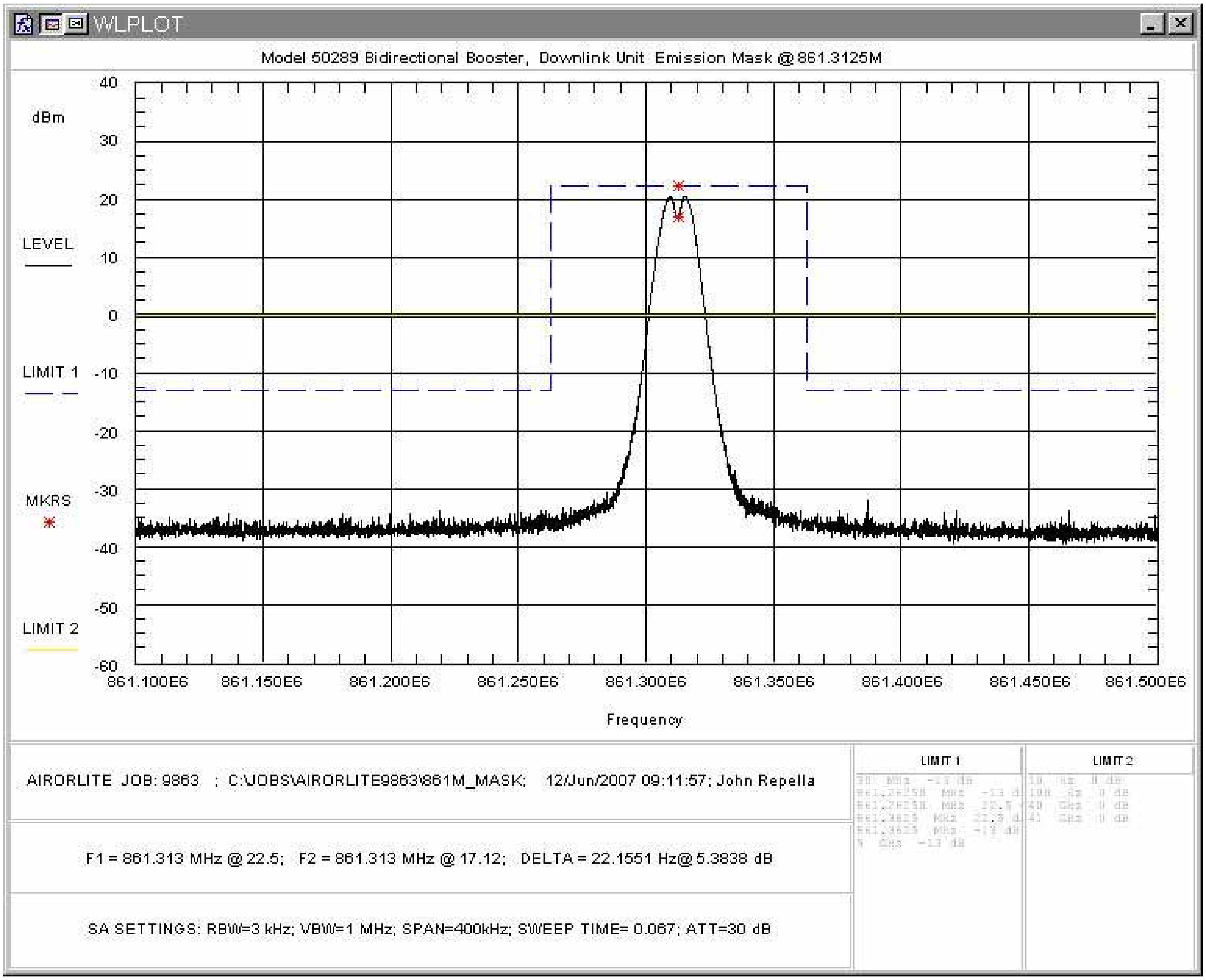

Figure 4-14. Conducted Spurious Emissions, Mid Channel In Band

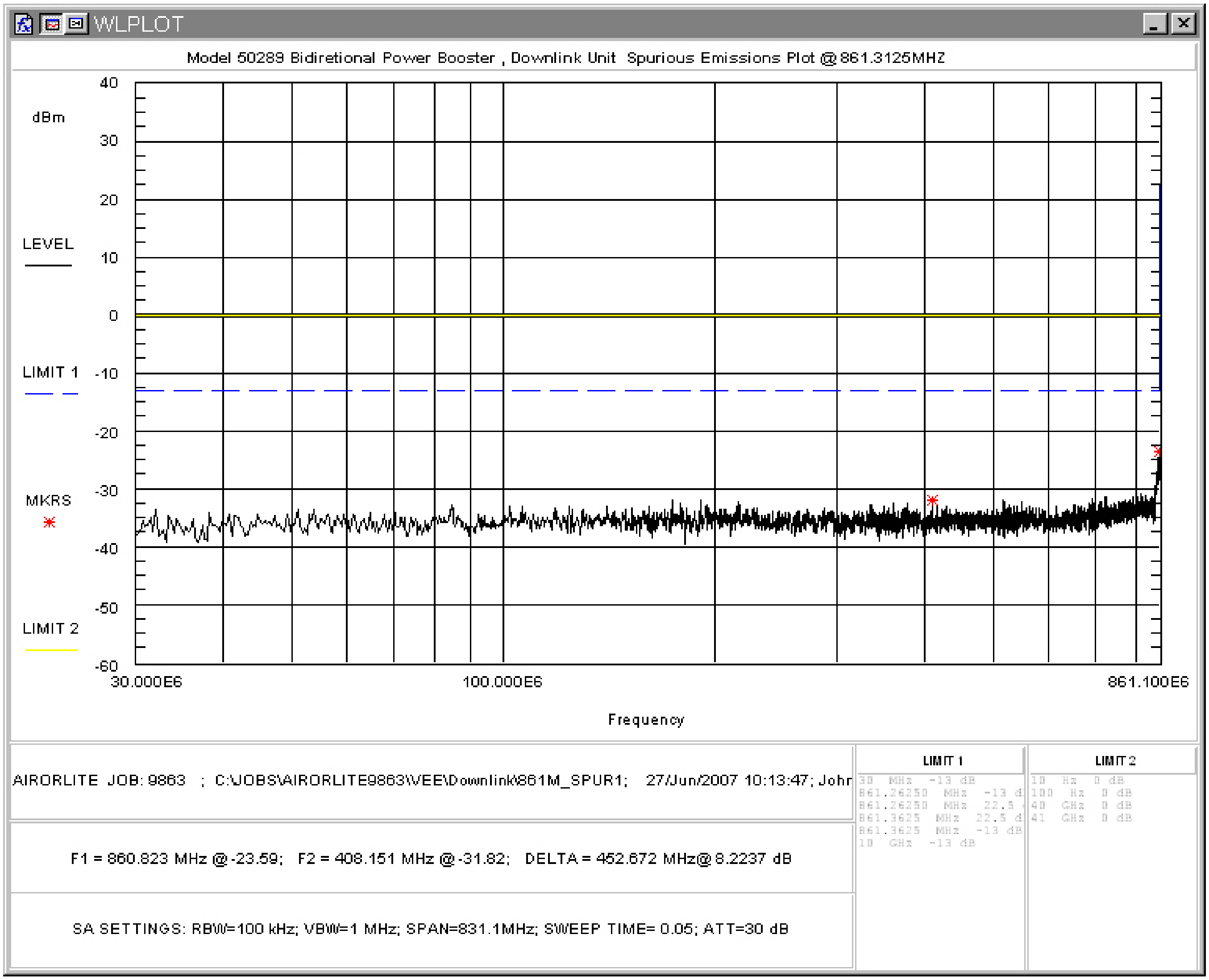

Figure 4-15. Conducted Spurious Emissions, Mid Channel 30 – 861MHz

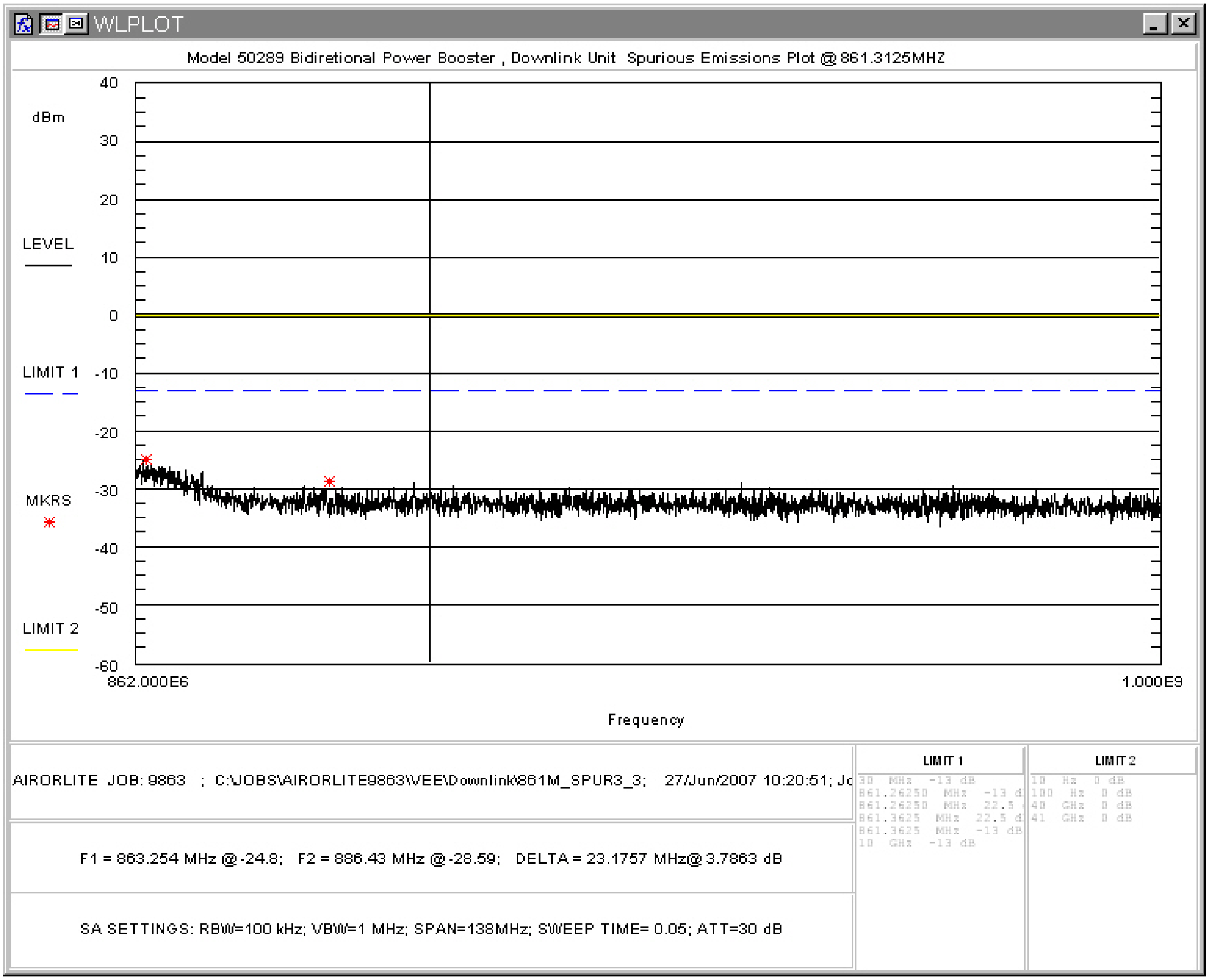

Figure 4-16. Conducted Spurious Emissions, Mid Channel 862 – 1000MHz

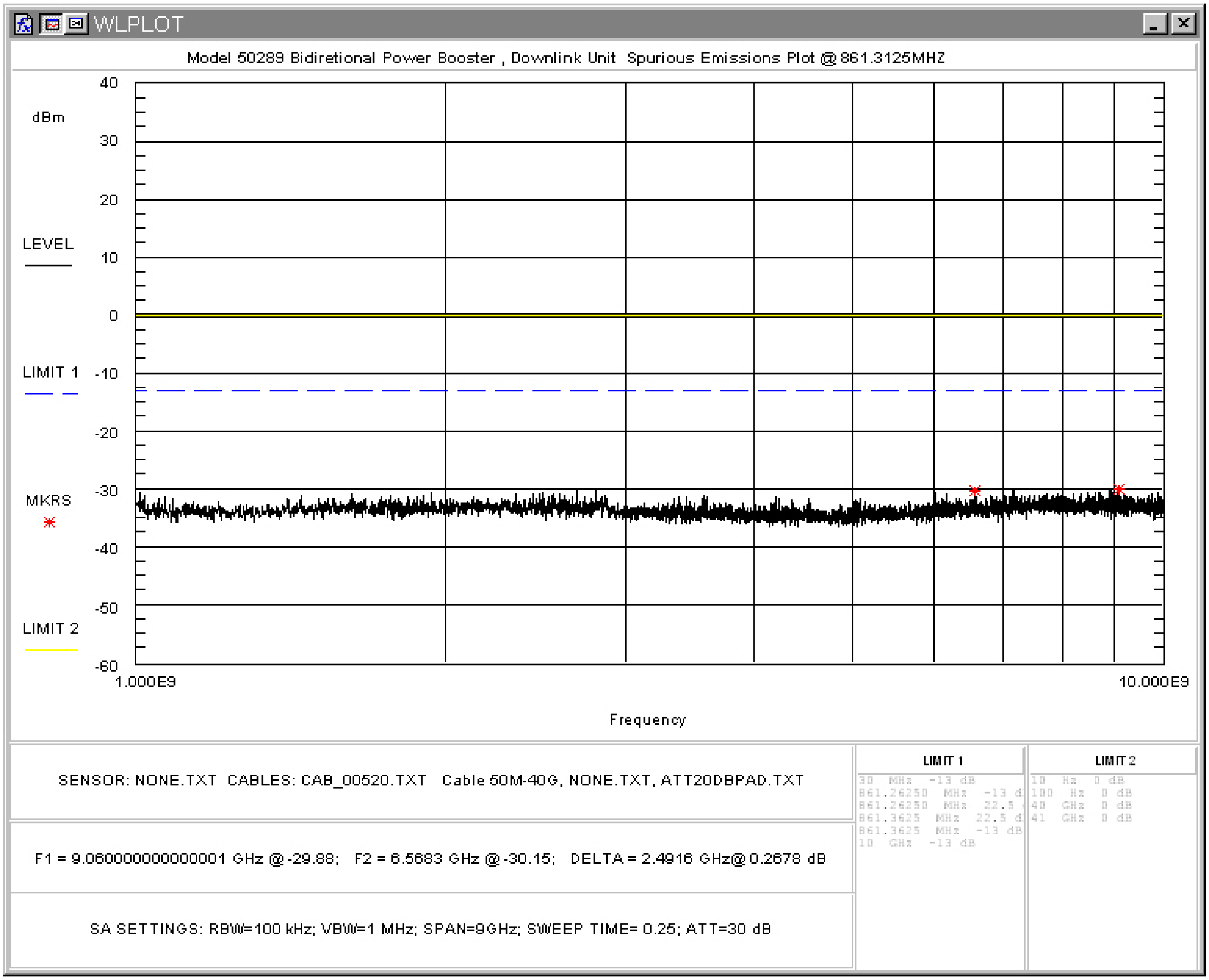

Figure 4-17. Conducted Spurious Emissions, Mid Channel 1 – 10GHz

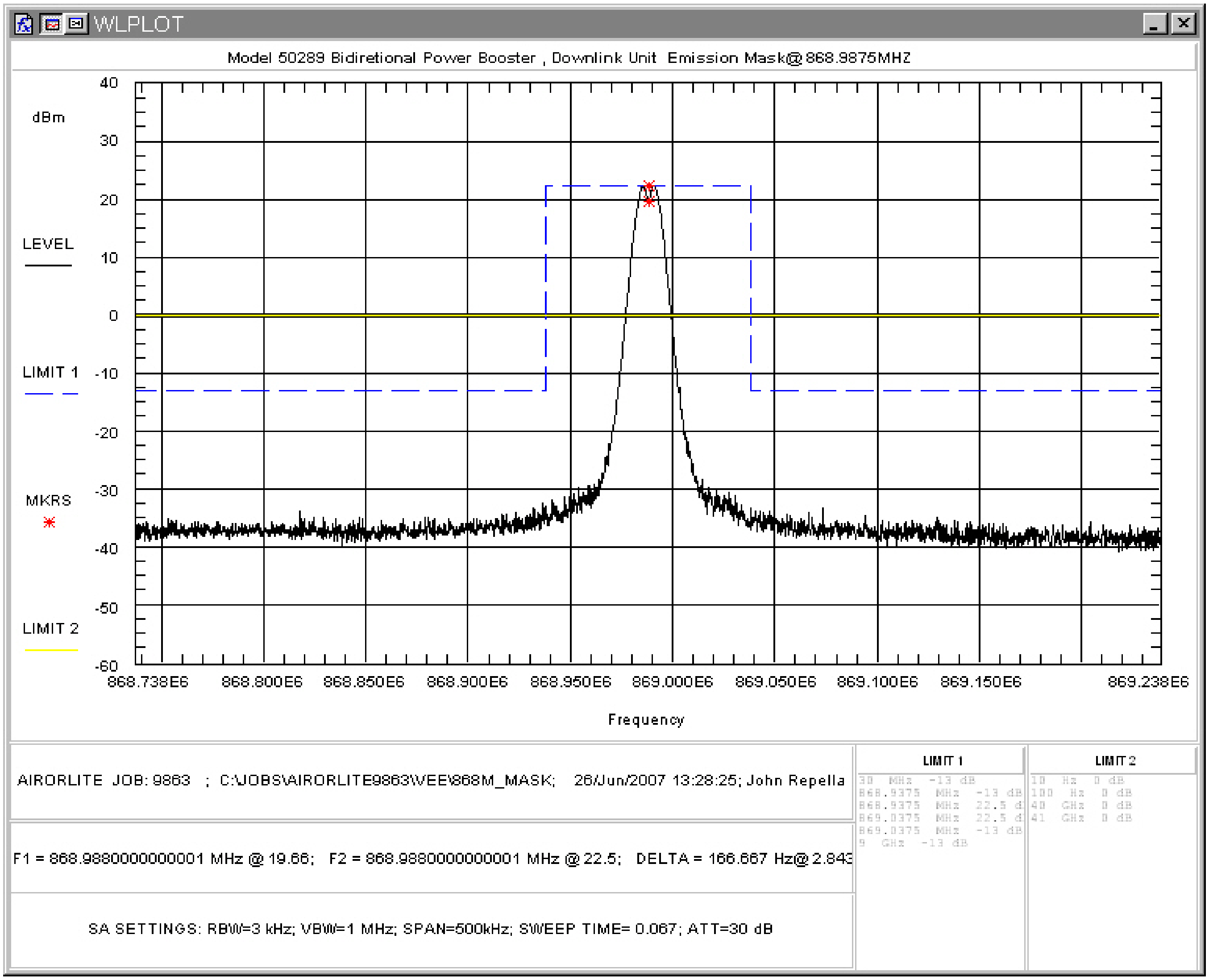

Figure 4-18. Conducted Spurious Emissions, High Channel In band

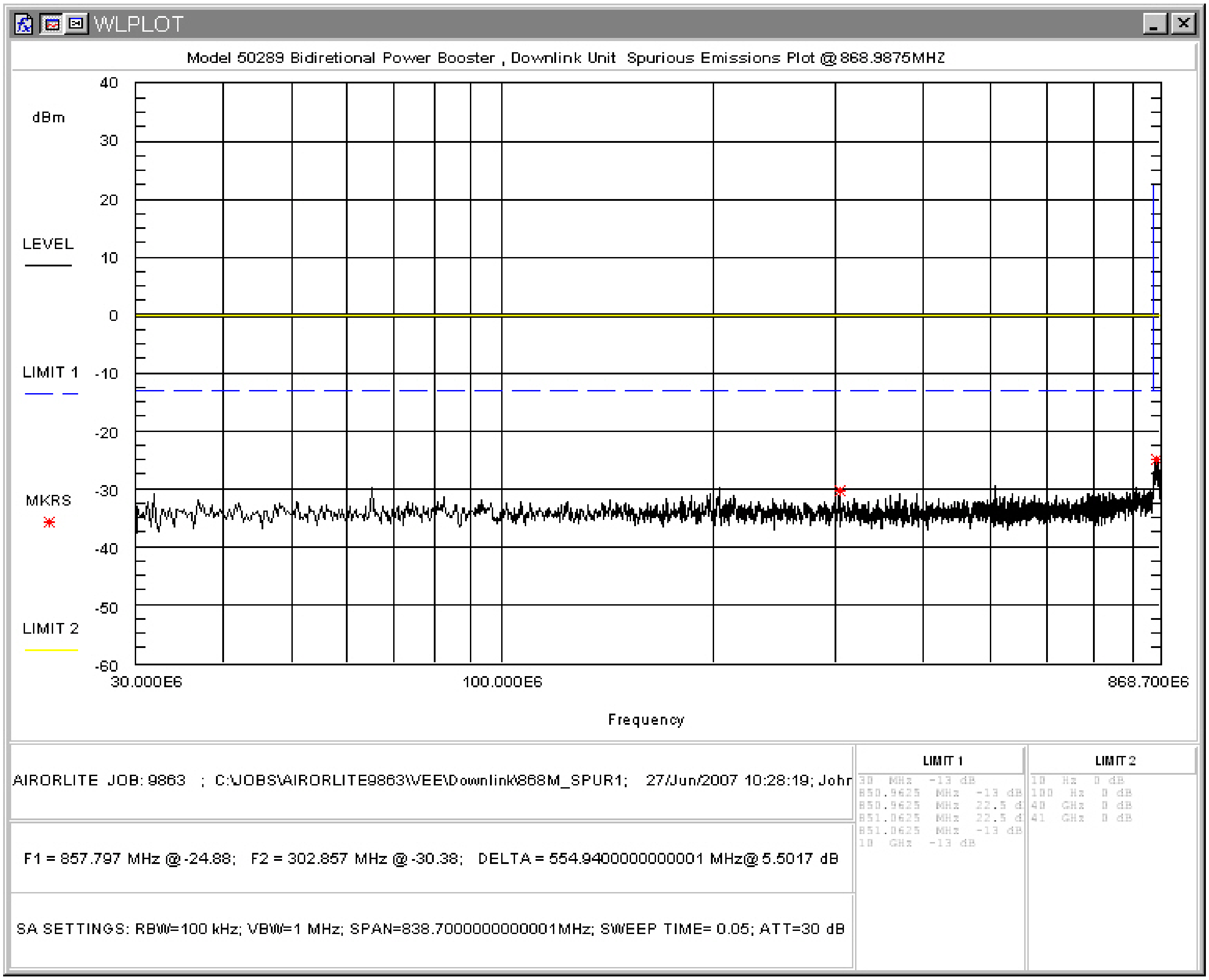

Figure 4-19. Conducted Spurious Emissions, High Channel 30 – 868MHz

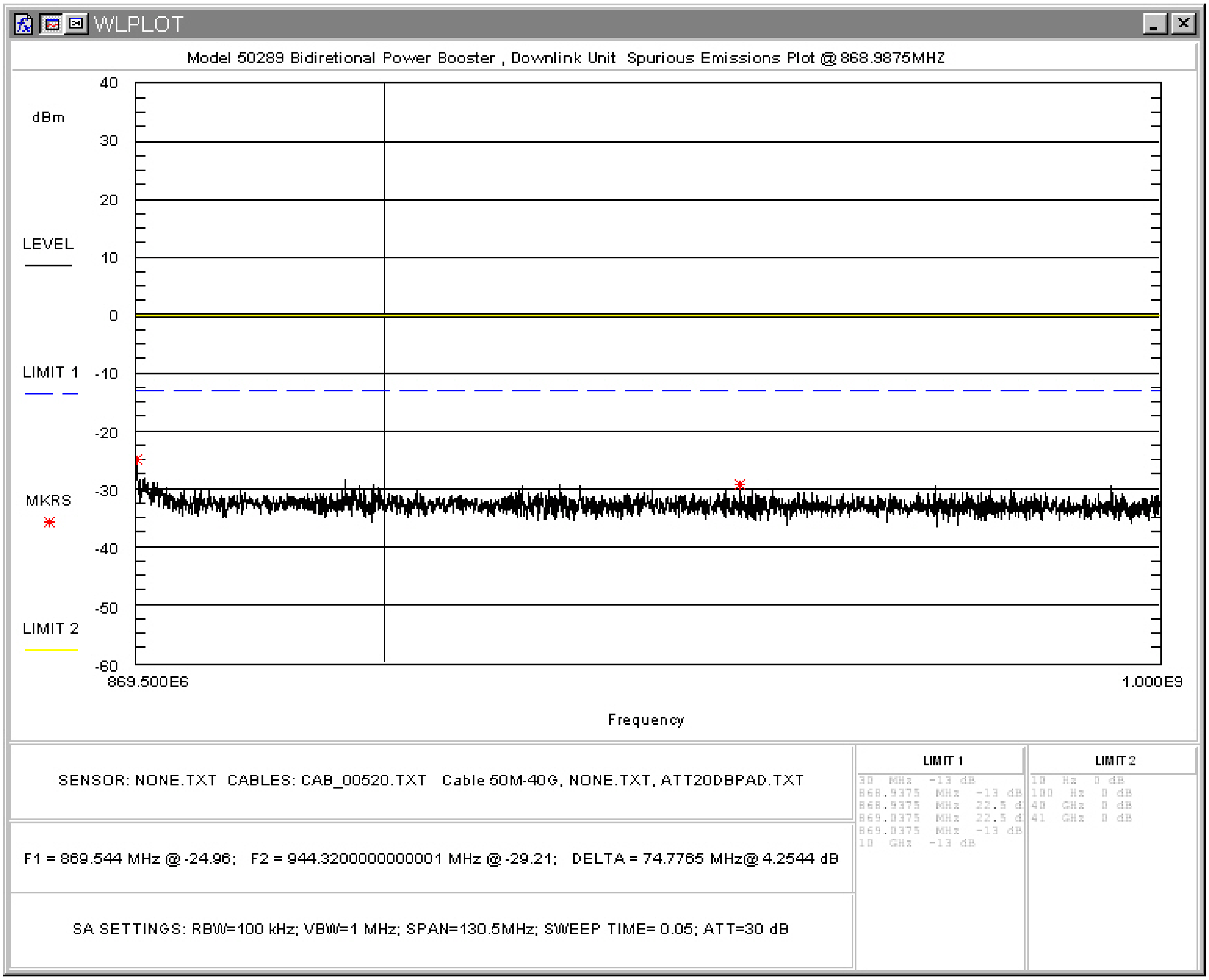

Figure 4-20. Conducted Spurious Emissions, High Channel 869 – 1000MHz

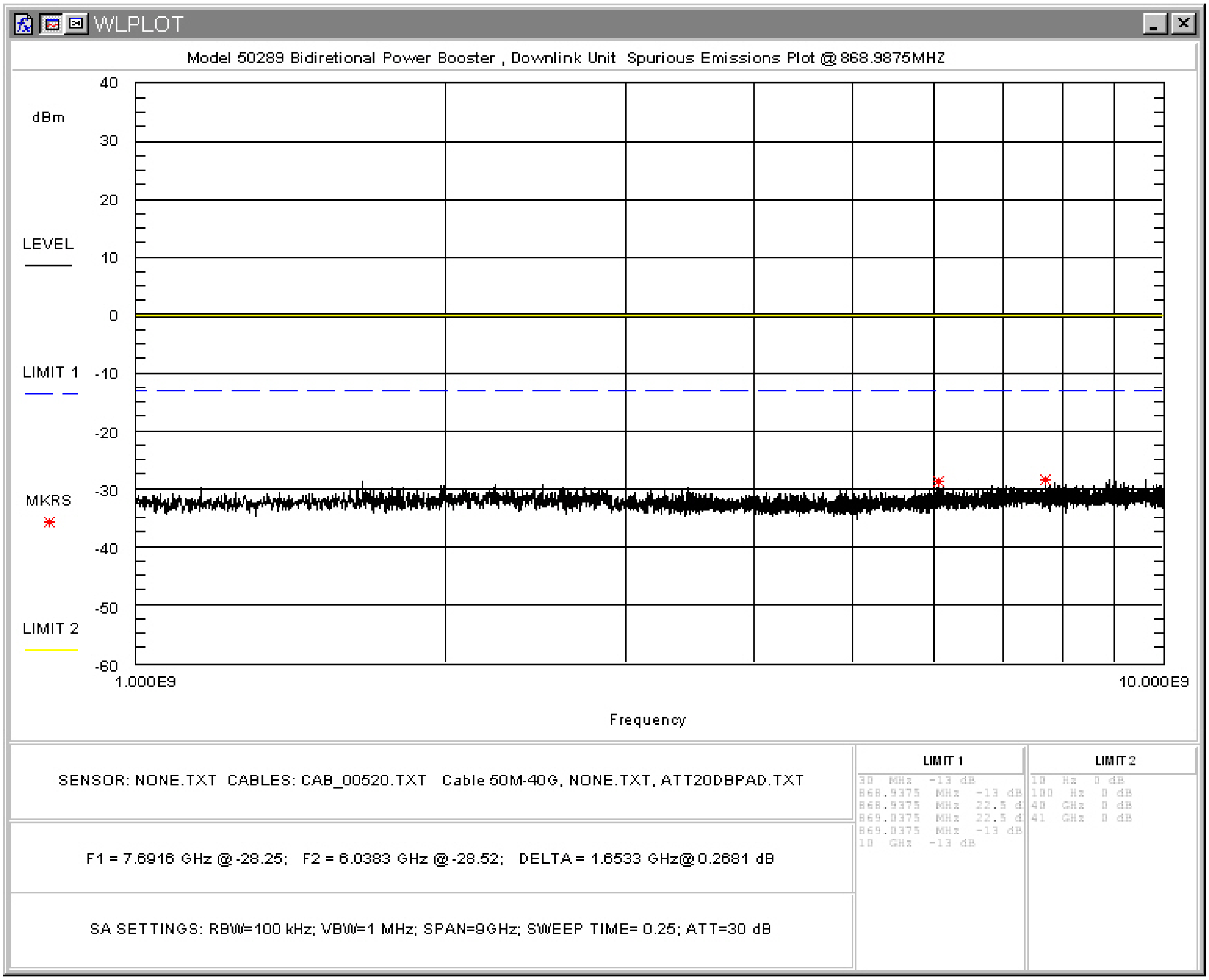

Figure 4-21. Conducted Spurious Emissions, High Channel 1 – 10GHz

4.5 Intermodulated Spurious Emissions

Testing for intermodulated spurious emissions used two signal generators set at -60dBm. The first signal generator was set at 851.0125MHz with FM Modulation, 2.5 kHz deviation, 1kHz tone. The second was set at 868.9875MHz with 4.2 kHz deviation and a 2.5 kHz tone. Testing was performed from 30M – 10GHz. The data is presented in the charts below.

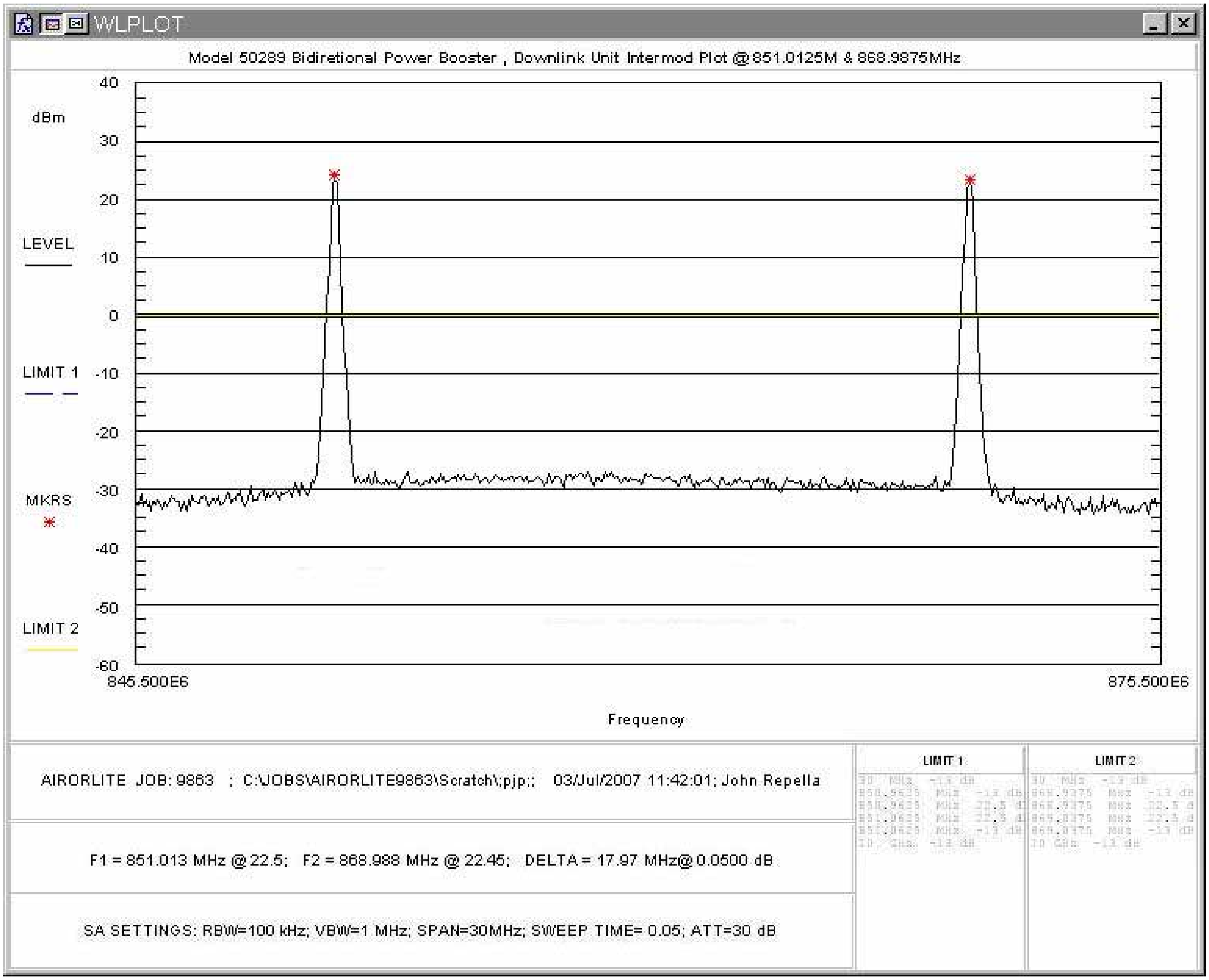

Figure 4-22. Intermodulated Spurious Emissions, In-band, Output

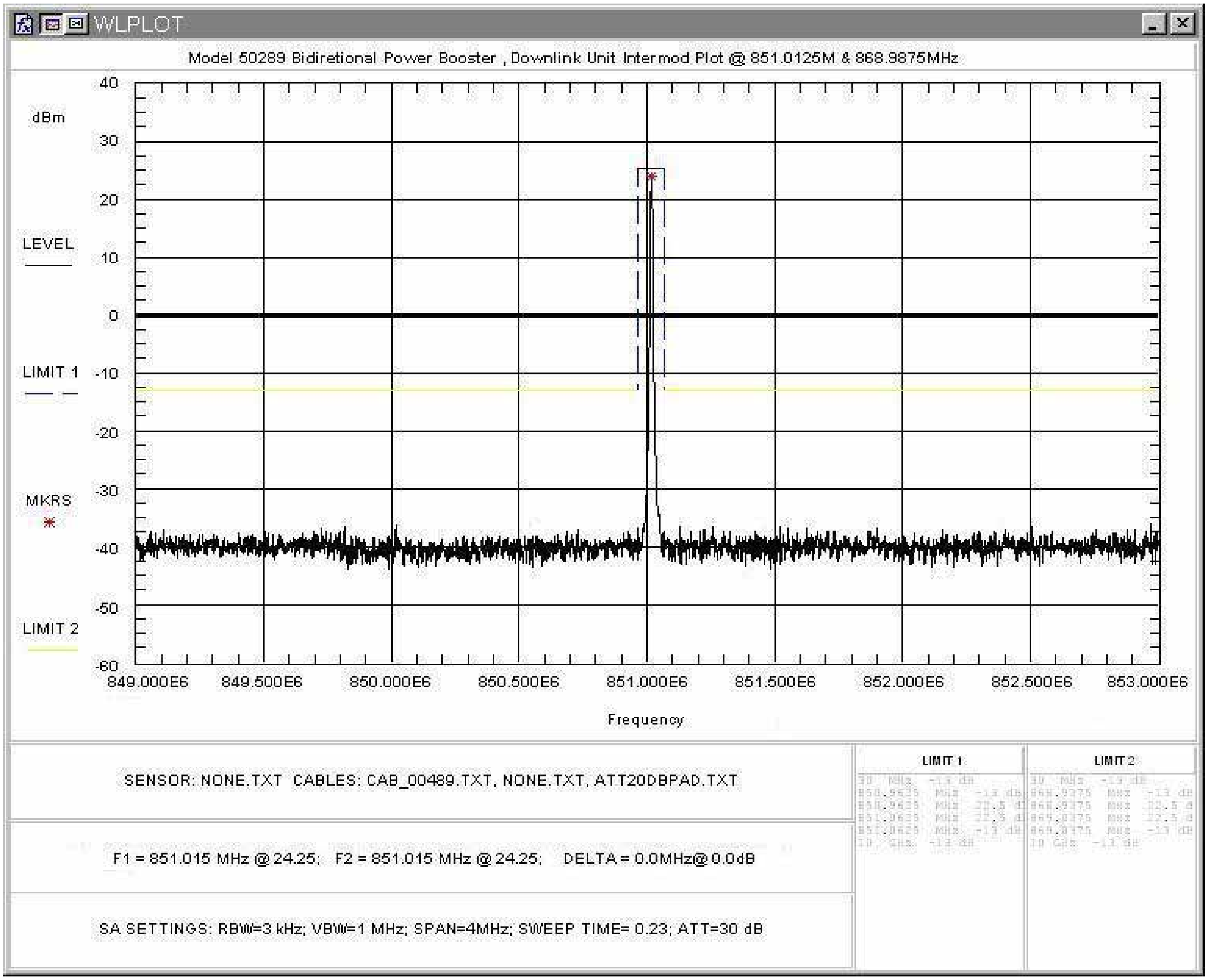

Figure 4-23. Intermodulated Spurious Emissions, In-band, 849 – 853MHz

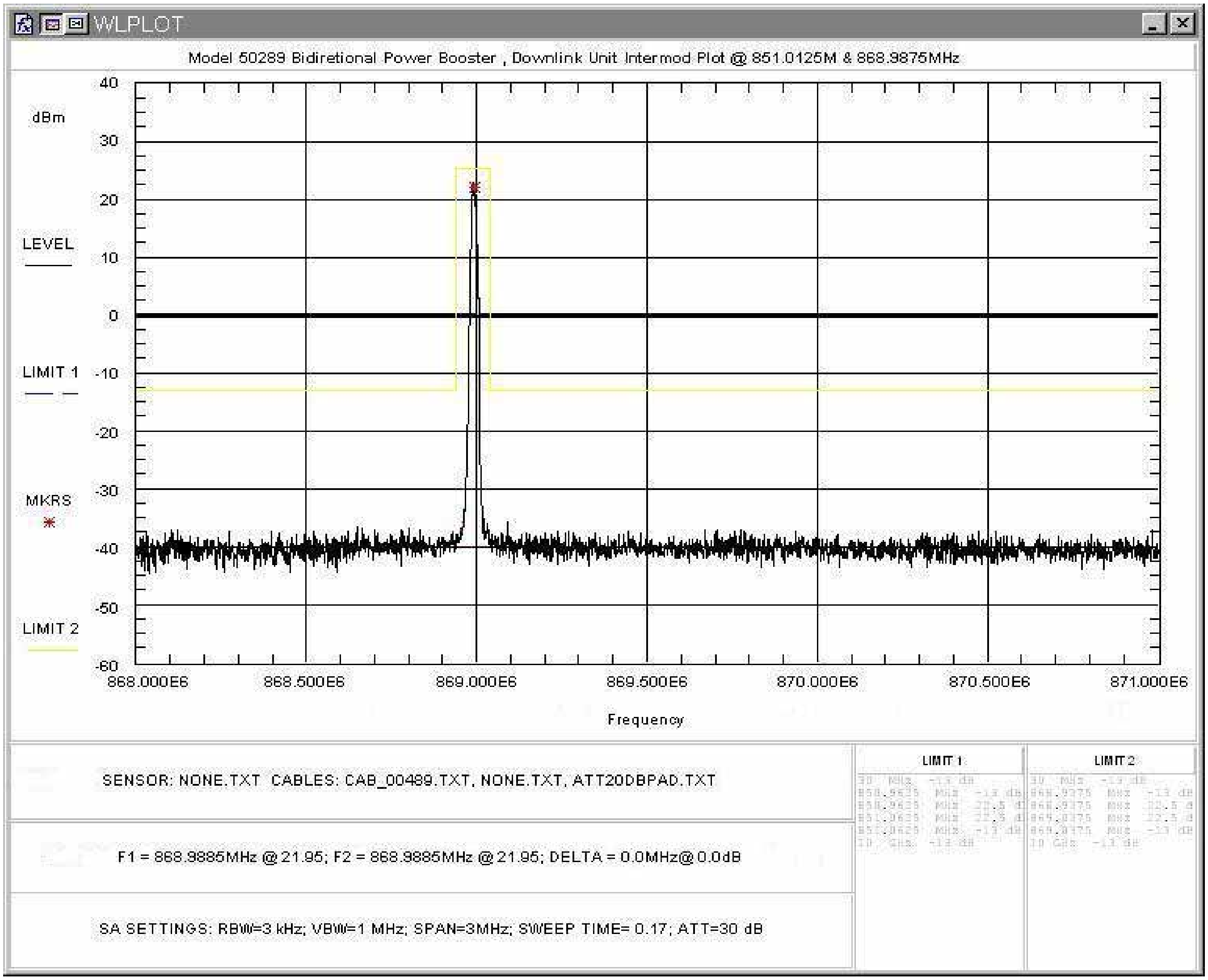

Figure 4-24. Intermodulated Spurious Emissions, In-band, 868 – 871MHz

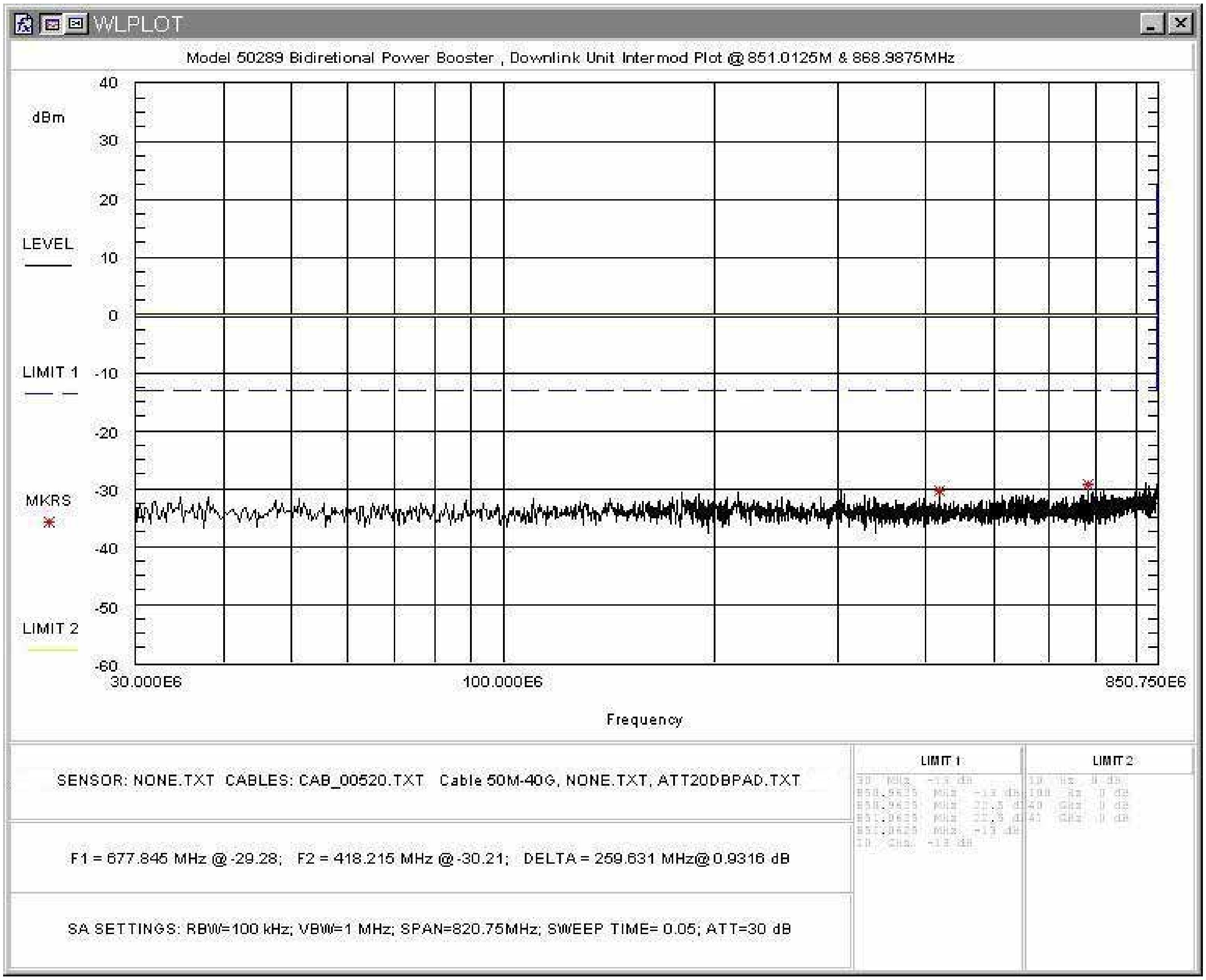

Figure 4-25. Intermodulated Spurious Emissions, 30 – 850MHz

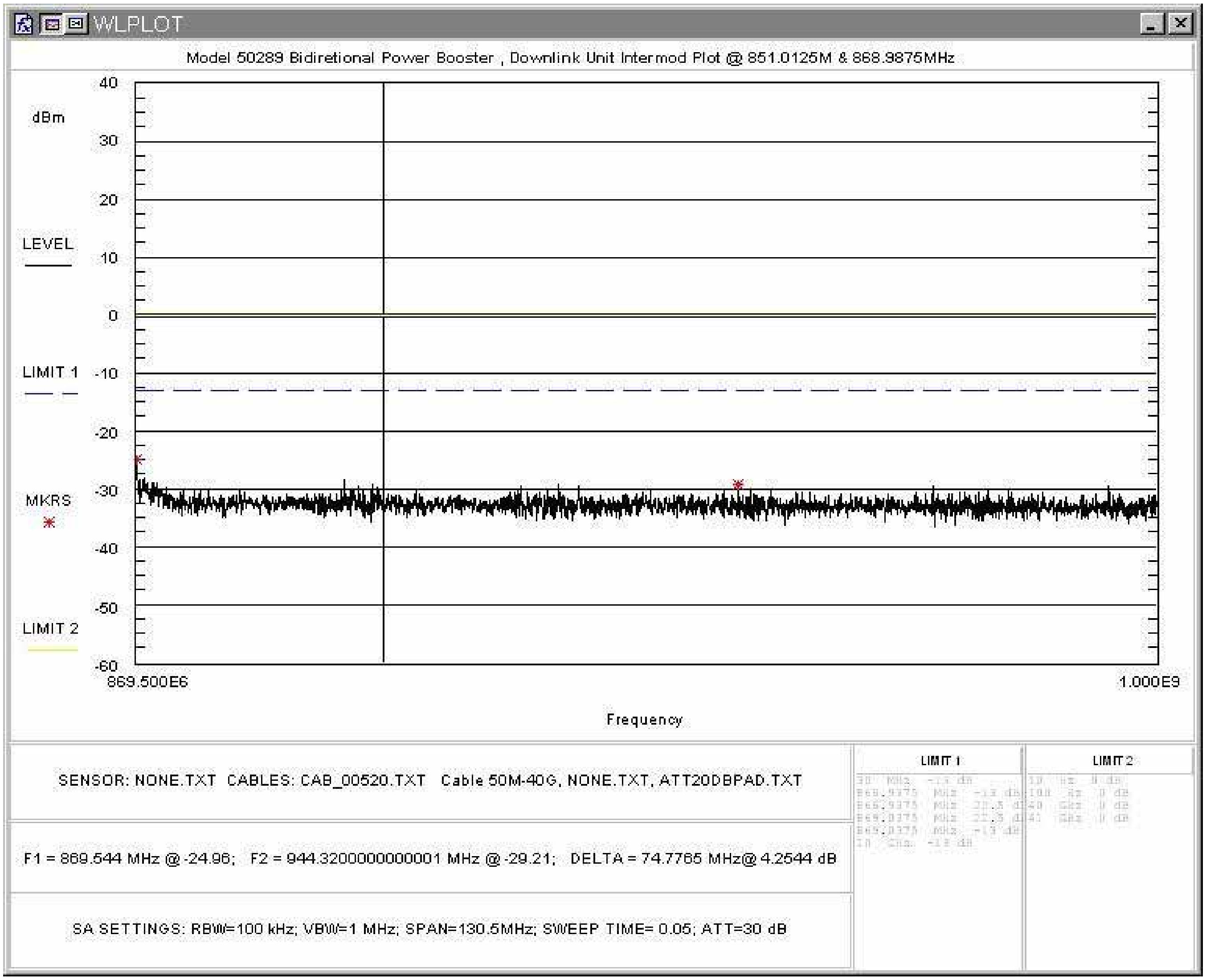

Figure 4-26. Intermodulated Spurious Emissions, 869 – 1000MHz

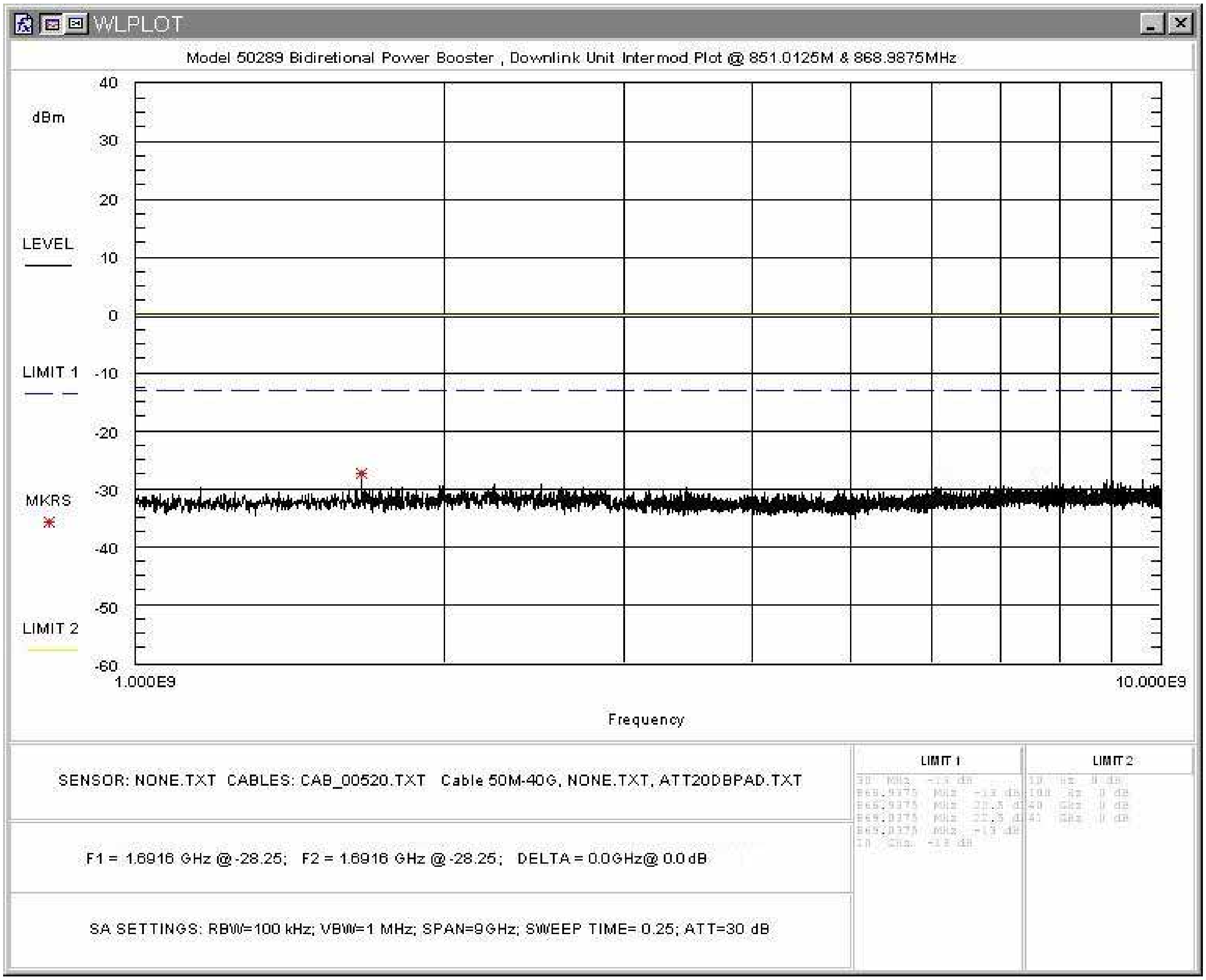

Figure 4-27. Intermodulated Spurious Emissions, 1 – 10GHz

4.6 Radiated Spurious Emissions: (FCC Part §2.1053)

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 §15.209 and §15.35(b) for peak measurements.

4.6.1 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. Cables were varied in position to produce maximum emissions. Both the horizontal and vertical field components were measured.

The output was terminated in 50ohms and the radiated spurious emissions measured.

Table 5: Radiated Emission Frequency Data

Low	Mid	High
851.0125	861.3125	868.9875
1702.0250	1722.6250	1737.9750
2553.0375	2583.9375	2606.9625
3404.0500	3445.2500	3475.9500
4255.0625	4306.5625	4344.9375
5106.0750	5167.8750	5213.9250
5957.0875	6029.1875	6082.9125
6808.1000	6890.5000	6951.9000
7659.1125	7751.8125	7820.8875
8510.1250	8613.1250	8689.8750

Table 6: Radiated Emission Test Data, Low Channel

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Height (m)	Spurious Level dBµV	Sub. Sig. Gen. Level dBm	Sub. Power Level dBm	Sub. Ant. Factor dB/m	Sub. Ant. Gain dBi	EIRP Level dBm	Limit dBm	Margin dB
851.013											
1702.0250	V	0.0	1.0	38.7	-64.0	-72.1	29.6	5.3	-66.8	-13.0	-53.8
2553.0375	V	0.0	1.0	40.2	-55.7	-63.8	33.9	4.5	-59.4	-13.0	-46.4
3404.0500	V	0.0	1.0	39.6	-56.2	-65.3	36.2	4.6	-60.7	-13.0	-47.7
4255.0625	V	0.0	1.0	40.2	-49.5	-60.0	37.8	5.0	-55.0	-13.0	-42.0
5106.0750	V	0.0	1.0	40.3	-48.5	-60.3	38.9	5.4	-54.9	-13.0	-41.9
5957.0875	V	0.0	1.0	39.9	-47.0	-59.8	40.6	5.1	-54.7	-13.0	-41.7
6808.1000	V	0.0	1.0	43.0	-35.6	-49.7	41.9	5.0	-44.7	-13.0	-31.7
7659.1125	V	0.0	1.0	43.5	-36.8	-50.5	43.1	4.8	-45.7	-13.0	-32.7
8510.1250	V	0.0	1.0	44.0	-29.9	-44.0	45.1	3.7	-40.3	-13.0	-27.3
1702.0250	H	0.0	1.0	36.4	-66.5	-74.3	29.6	5.3	-69.0	-13.0	-56.0
2553.0375	H	0.0	1.0	38.9	-57.4	-65.7	33.9	4.5	-61.2	-13.0	-48.2
3404.0500	H	0.0	1.0	39.9	-56.0	-65.0	36.2	4.6	-60.4	-13.0	-47.4
4255.0625	H	0.0	1.0	40.1	-49.8	-60.3	37.8	5.0	-55.3	-13.0	-42.3
5106.0750	H	0.0	1.0	40.2	-48.4	-60.2	38.9	5.4	-54.7	-13.0	-41.7
5957.0875	H	0.0	1.0	38.5	-48.2	-61.2	40.6	5.1	-56.1	-13.0	-43.1
6808.1000	H	0.0	1.0	43.2	-35.5	-49.5	41.9	5.0	-44.5	-13.0	-31.5
7659.1125	H	0.0	1.0	45.5	-35.0	-48.7	43.1	4.8	-43.9	-13.0	-30.9
8510.1250	H	0.0	1.0	44.9	-29.0	-43.0	45.1	3.7	-39.3	-13.0	-26.3

Table 7: Radiated Emission Test Data, Mid Channel

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Height (m)	Spurious Level dBμV	Sub. Sig. Gen. Level dBm	Sub. Power Level dBm	Sub. Ant. Factor dB/m	Sub. Ant. Gain dBi	EIRP Level dBm	Limit dBm	Margin dB
861.3125											
1722.6250	V	0.0	1.0	45.2	-57.5	-65.3	29.7	5.2	-60.1	-13.0	-47.1
2583.9375	V	0.0	1.0	41.5	-55.0	-63.3	34.1	4.3	-59.0	-13.0	-46.0
3445.2500	V	0.0	1.0	39.5	-56.5	-65.7	36.2	4.8	-60.9	-13.0	-47.9
4306.5625	V	0.0	1.0	40.5	-51.0	-60.2	37.8	5.1	-55.1	-13.0	-42.1
5167.8750	V	0.0	1.0	41.2	-47.4	-58.7	39.1	5.4	-53.3	-13.0	-40.3
6029.1875	V	0.0	1.0	39.5	-45.0	-59.3	40.7	5.1	-54.3	-13.0	-41.3
6890.5000	V	0.0	1.0	44.2	-34.2	-48.3	42.0	5.0	-43.4	-13.0	-30.4
7751.8125	V	0.0	1.0	44.1	-36.4	-49.7	43.4	4.6	-45.1	-13.0	-32.1
8613.1250	V	0.0	1.0	45.2	-30.0	-43.3	45.4	3.5	-39.8	-13.0	-26.8
1722.6250	H	0.0	1.0	45.9	-56.5	-63.8	29.7	5.2	-58.6	-13.0	-45.6
2583.9375	H	0.0	1.0	38.7	-59.2	-67.8	34.1	4.3	-63.5	-13.0	-50.5
3445.2500	H	0.0	1.0	39.7	-56.4	-65.2	36.2	4.8	-60.4	-13.0	-47.4
4306.5625	H	0.0	1.0	41.4	-49.2	-58.5	37.8	5.1	-53.4	-13.0	-40.4
5167.8750	H	0.0	1.0	35.5	-55.2	-66.8	39.1	5.4	-61.4	-13.0	-48.4
6029.1875	H	0.0	1.0	38.7	-46.2	-60.7	40.7	5.1	-55.6	-13.0	-42.6
6890.5000	H	0.0	1.0	43.5	-34.6	-48.7	42.0	5.0	-43.7	-13.0	-30.7
7751.8125	H	0.0	1.0	46.5	-34.0	-46.8	43.4	4.6	-42.3	-13.0	-29.3
8613.1250	H	0.0	1.0	45.2	-31.0	-44.3	45.4	3.5	-40.8	-13.0	-27.8

Table 8: Radiated Emission Test Data, High Channel

Frequency	Polarity	Azimuth	Ant. Height	Spurious Level	Sub. Sig. Gen. Level	Sub. Power Level	Sub. Ant. Factor	Sub. Ant. Gain	EIRP Level	Limit	Margin
(MHz)	H/V	Degree	(m)	dBμV	dBm	dBm	dB/m	dBi	dBm	dBm	dB
868.988											
1737.975	V	0.0	1.0	44.3	-65.2	-74.1	29.2	5.8	-68.3	-13.0	-55.3
2606.963	V	0.0	1.0	38.8	-65.8	-74.7	33.7	4.8	-69.9	-13.0	-56.9
3475.950	V	0.0	1.0	39.4	-63.8	-74.9	34.6	6.5	-68.4	-13.0	-55.4
4344.938	V	0.0	1.0	40.0	-61.1	-72.2	36.1	6.9	-65.3	-13.0	-52.3
5213.925	V	0.0	1.0	42.7	-52.7	-66.9	37.1	7.5	-59.4	-13.0	-46.4
6082.913	V	0.0	1.0	39.5	-49.4	-66.3	38.6	7.3	-59.0	-13.0	-46.0
6951.900	V	0.0	1.0	43.2	-39.1	-58.5	40.0	7.1	-51.4	-13.0	-38.4
7820.888	V	0.0	1.0	44.3	-30.9	-54.0	41.7	6.4	-47.6	-13.0	-34.6
8689.875	V	0.0	1.0	44.2	-17.3	-45.9	43.3	5.7	-40.2	-13.0	-27.2
1737.975	H	0.0	1.0	46.0	-65.4	-74.3	29.2	5.8	-68.5	-13.0	-55.5
2606.963	H	0.0	1.0	38.7	-64.6	-73.5	33.7	4.8	-68.7	-13.0	-55.7
3475.950	H	0.0	1.0	39.7	-64.1	-75.2	34.6	6.5	-68.7	-13.0	-55.7
4344.938	H	0.0	1.0	41.4	-59.2	-71.9	36.1	6.9	-65.0	-13.0	-52.0
5213.925	H	0.0	1.0	35.5	-55.0	-69.2	37.1	7.5	-61.7	-13.0	-48.7
6082.913	H	0.0	1.0	38.7	-47.3	-64.2	38.6	7.3	-56.9	-13.0	-43.9
6951.900	H	0.0	1.0	44.2	-37.7	-57.3	40.0	7.1	-50.2	-13.0	-37.2
7820.888	H	0.0	1.0	46.7	-28.2	-51.4	41.7	6.4	-45.0	-13.0	-32.0
8689.875	H	0.0	1.0	45.7	-19.4	-47.9	43.3	5.7	-42.2	-13.0	-29.2

4.7 Conducted Emissions

4.7.1 Requirements

Compliance Limits		
Frequency	**Quasi-peak**	**Average**
0.15-0.5MHz	66 to 56dBµV	56 to 46dBµV
0.5 to 5MHz	56dBµV	46dBµV
0.5-30MHz	60dBµV	50dBµV

4.7.2 Test Procedure

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 was supplied to the peripherals through a second LISN. Power and data cables were moved about to obtain maximum emissions.

The 50 Ω 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 average measurements the post-detector filter was set to 10 Hz.

At frequencies where quasi-peak or peak measurements comply with the average limit, no average measurements need be performed.

At frequencies where quasi-peak or peak measurements comply with the average limit, no average measurements need be performed. The Conducted emissions level to be compared to the FCC limit is calculated as shown in the following example.

Example:

Spectrum Analyzer Voltage: VdBµV

LISN Correction Factor: LISN dB

Cable Correction Factor: CF dB

Electric Field: EdBµV = V dBµV + LISN dB + CF dB

4.7.3 Test Data

Table 6 provides the test results for power line conducted emissions.

Table 9: Conducted Emission Test Data

MOD:
Delta Electronics filter Model #
20DKBG5

861.3125MHz/-50dBm

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)
0.212	38.7	10.2	0.5	79.0	49.4	-29.6	38.7	10.2	49.4	66.0	-16.6
0.223	40.0	10.2	0.5	79.0	50.7	-28.3	40.0	10.2	50.7	66.0	-15.3
0.394	37.8	10.1	0.3	79.0	48.3	-30.7	37.8	10.1	48.3	66.0	-17.7
2.606	37.2	10.6	0.5	73.0	48.3	-24.7	36.5	10.6	47.6	60.0	-12.4
7.493	50.0	11.0	1.0	73.0	62.0	-11.0	46.4	11.0	58.4	60.0	-1.6
8.501	50.2	11.1	1.0	73.0	62.3	-10.7	46.8	11.1	58.9	60.0	-1.1

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)
0.212	39.7	10.2	0.3	79.0	50.2	-28.8	39.7	10.2	50.2	66.0	-15.8
0.223	40.5	10.2	0.3	79.0	50.9	-28.1	40.5	10.2	50.9	66.0	-15.1
0.391	38.1	10.1	0.2	79.0	48.4	-30.6	38.1	10.1	48.4	66.0	-17.6
2.606	41.3	10.6	0.7	73.0	52.6	-20.4	40.4	10.6	51.7	60.0	-8.3
7.493	49.5	11.0	1.4	73.0	61.9	-11.1	44.9	11.0	57.3	60.0	-2.7
8.501	49.6	11.1	1.4	73.0	62.1	-10.9	45.8	11.1	58.4	60.0	-1.6

4.8 Frequency Stability: (FCC Part §2.1055)

Frequency as a function of temperature and voltage variation shall be maintained within the FCC-prescribed tolerances.

There are no frequency-determining elements in the EUT. Hence, Frequency stability is not required.