Report 11411
26 February 1999

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Integrated Advanced Microwave Sounding Unit-A (AMSU-A)

Engineering Test Report

Electromagnetic Interference (EMI)/Electromagnetic Radiation (EMR) and Electromagnetic Compatibility (EMC)

For the METSAT/METOP AMSU-A1

Contract No. NAS 5-32314
CDRL 207

Submitted to:

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Submitted by:

Aerojet
1100 West Hollyvale Street
Azusa, California 91702

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SECTION 1

SUMMARY

1. INTRODUCTION

This document contains the procedure and the test results of the Advanced Microwave Sounding Unit-A (AMSU-A) Electromagnetic Interference (EMI), Electromagnetic Susceptibility, and Electromagnetic Compatibility (EMC) qualification test for the Meteorological Satellite (METSAT) and the Meteorological Operation Platform (METOP) projects, assembly number 1331720-2, serial number 105. The test was conducted in accordance with the approved EMI/EMC Test Plan/Procedure, Specification number AE-26151/5D, dated 22 Sep 1998.

Aerojet intends that the presentation and submittal of this document, prepared in accordance with the objectives established by the aforementioned Test Plan/Procedure, document number AE-26151/5D, will satisfy the data requirement with respect to the AMSU-A instrument operational compliance to the EMI/EMC test requirement.

Testing of the AMSU-A instrument has been completed and all the requirements per Unique Interface Specification for the AMSU-A1, IS-2617547, and AMSU-A1 Instrument Interface Document, MO-IC-MMT-A1-0001, were met without exception. This document provides the test result data that supports this conclusion.

1.1 Purpose

The purpose of this test report is to describe each of the tests performed and to present the backup data collected to verify that the design objectives and specified requirements were evaluated and achieved.

1.2 Scope

This document describes the EMI/EMC test performed by Aerojet and it is presented in the following manner: Section 1 contains introductory material and a brief summary of the test results. Section 2 contains more detailed descriptions of the test plan, test procedure, and test results for each type of EMI/EMC test conducted. Section 3 contains supplementary information that includes test data sheets, plots, and calculations collected during the qualification testing.

1.3 Summary of test results

1.3.1 Conducted emissions, per test method CE01, 30 Hz to 20 kHz (METOP)

The AMSU-A1 instrument meets the METOP requirements of test method CE01 in the common and differential modes of testing the power lines, without exception.

1.3.2 Conducted emissions, per test method CE03, 20 kHz to 50 MHz (METSAT & METOP)

The AMSU-A1 instrument meets the METSAT and METOP requirements of test method CE03 when the power lines are tested in the differential mode. The instrument also meets the METOP requirement when the power lines are tested in the common mode. In the differential mode, the conducted emissions are below the limit by 4 to 30 dB. In the common mode, all the prominent emissions approximate the limit by 11 to 17 dB.

1.3.3 Radiated emissions, per test method RE02, 14 kHz to 18 GHz (METSAT & METOP)

The AMSU-A1 instrument meets the METSAT requirements of test method RE02. There were some emissions at 13.7 and 15 MHz that approximated the limit. These emissions were reduced by carefully shielding the cables to the instrument. The METOP limit is 19 dB above the highest recorded emissions. The special frequencies met the requirements without any exception.

1.3.4 Radiated emission, per test method RE04, magnetic static field, one meter from the wall of the instrument (METSAT)

The AMSU-A1 instrument meets the METSAT static field, magnetic field requirement performed per test method RE04, without exception.

1.3.5 Conducted susceptibility, per test method CS01/CS02, 30 Hz to 150 kHz (METSAT)

The AMSU-A1 instrument meets the METSAT requirements of test methods CS01/CS02. This test consisted of applying the test signal on each of the power lines throughout the frequency range of 30 Hz to 150 kHz, differential mode.

1.3.6 Conducted susceptibility, per test method CS02, 100 kHz to 50 MHz (METOP)

The AMSU-A1 instrument meets the METOP requirement of test method CS02, common mode. This test consisted of applying the test signal on the return at the power lines via the Line Stabilization Network (LISN), throughout the frequency range of 100 kHz to 50 MHz.

1.3.7 Conducted susceptibility, per test method CS06, transient spike (METSAT & METOP)

The AMSU-A1 instrument meets the METSAT and METOP requirement of test method CS06, without exception.

1.3.8 Radiated susceptibility, per test method RS03, electric field 14 kHz to 18 GHz (METSAT & METOP)

The AMSU-A1 instrument meets the METSAT and METOP requirement of test method RS03, without exception.

1.4 Tests performed

The AMSU-A1 instrument was subjected to the EMI/EMC tests on the power lines under the normal voltage conditions, i.e., all tests were performed with the instrument powered with 28 Vdc. All the tests indicated in Table I were performed and the results compared to the appropriate project requirement.

Table I EMI/EMC Test Performance Matrix

Test Method & Description	Requirement METSAT	Requirement METOP	+28V Main Bus	28V Main Bus Rtn	+28V Pulsed Bus Load	28V Pulsed Bus Load Rtn	+28V Analog Telemetry Bus	28V Analog Telemetry Bus Rtn	+10V Interface Bus	10V Interface Bus Rtn	+28V Safety Heater	28V Safety Heater Rtn	AMSU-A Instrument
CE01 (30 Hz to 20 kHz) DM		X	X	X	X	X	X	X	X	X	X	X	
CM		X	T		T		T		T				
CE03 20 kHz to 50 MHz) DM	X	X	X	X	X	X	X	X	X	X	X	X	
CM		X	T		T		T		T				
CS01/CS02 (30 Hz to 150 kHz) DM	X		X	X	X	X	X	X	X	X			
CS02 (100 kHz to 50 MHz) CM		X		X		X		X		X			
CS06 (Spike) DM	X	X	X	X	X	X	X	X	X	X			
RE02	X	X											X
RE04	X												X
RS03	X	X											X

X Test performed on powerline.

T Test performed together with high side and return.

1.5 Susceptibility monitors

The monitors shown in Table II will be observed and their output recorded during the performance of the susceptibility testing:

Table II Monitors for Susceptibility Test

Susceptibility	Line/Item	Monitor
Conducted CS01, CS02, and CS06	+29V main power, Quiet Bus	Data output all channels
	+29V Noisy Power Bus	Antenna Position
Radiated RS03	AMSU-A enclosure	Data output all channels

1.6 Pass/Fail criteria

The pass/fail criteria for the conducted and radiated emissions test was determined by inspection of the recorded emissions levels when compared to the specifications limits. All emissions shall be on or below the specification limits. When narrowband emissions exceed the broadband limits or transient spikes

exceed the narrowband or broadband limits, the specific emission shall be identified and exempted from these criteria.

An STE EMI data collection program has been developed and is included in the bonded test software of the STE. Operation of the system and the EMI data collection program will be coordinated with operation of the EMI susceptibility signal sweeps.

The EMI data collected will provide about a five scan period at the beginning and end of each data collection period, which will allow comparison of each channel's normal radiometric response with and without the interference present. The data will be presented in the form of noise distribution plots for each of the radiometric channels and as a summary report for all channels. These data shall be reviewed as follows:

a. Review the summary data and identify channels with alarm counts greater than ten or channels that have sigma values that are a factor of two greater than observed in baseline checks made periodically during the test.

b. Examine the noise distribution plots for channels identified in (a), and look for disruptions during the period when the EMI signal sweep was made. If an EMI disruption results in a peak-to-peak increase in channel noise that is less than twice the normal level, then it is acceptable (pass); if the disruption creates a level shift in the noise data that is equal to or less than the normal noise level, then it is acceptable (pass).

c. Examine all remaining plots for disruptions and identify and file the data.

d. If any channel fails, additional sweeps will be made over a reduced frequency range and at reduced amplitudes as necessary to determine the threshold of the susceptibility.

The test will continue to establish an overall assessment of the behavior. On the Test Data Sheets, the EQUIPMENT LIMIT (EL) column will be checked when the test equipment cannot deliver the required level. Since the test equipment meets the power requirements of MIL-STD-461 and the AMSU-A instrument is not susceptible to the output of the signal source, a check on this column indicates the unit passed the test requirement. A check in the SPECIFICATION LIMIT (SL) column indicates the AMSU-A instrument met the requirements.

SECTION 2

TEST CONDUCT/RESULTS

2. TEST CONDUCT/RESULTS

2.1 Conducted emissions (CE01) test (METOP)

2.1.1 Purpose of test

This test was conducted to demonstrate that the electromagnetic interference currents in the power lines do not exceed the limits in Figures 1 and 2, throughout the frequency range 30 Hz to 20 kHz.

2.1.2 Date test started

The test began on 15 December 1998.

2.1.3 Date test completion

The test was completed on 15 December 1998.

2.1.4 Test procedure

The test procedure specified that the test be conducted as indicated in the following steps:

1. Connect the current probe to one of the power lines of the Main Power Bus listed in para. 3.4.4.2 (AE-26151/5D) and as depicted in Figure 5 (also in AE-26151/5D), between the feedthrough capacitor and the AMSU-A equipment.

2. Verify that the measuring equipment is programmed to measure between 20 Hz and 20 kHz. If necessary, program the signal analyzer for multi-scan and compare the measurement to the single scan. Capture the highest level possible in each range.

3. Turn ON the Main Power switch on the STE front power panel and turn ON the Main, Pulse, Analog, and Interface switches.

4. Adjust the Main, Pulse and Analog power supply voltage levels on the STE to +28.0 V. Adjust the Interface power supply to +10 V.

5. Using STE command "[9] SCANNER A1-1 POWER" or "[10] SCANNER A1-2 POWER", turn on the scanner power (the state of the command should change from OFF to ON).

6. Enter the appropriate STE command for the "ANTENNA FULL SCAN MODE." Verify that the command was received by observing that the state of that command has changed from NO to YES, and the instrument is scanning in full scan mode.

7. Allow the instrument to scan for 30 minutes so that all the temperature and power parameters have stabilized (the instrument must remain in full scan mode during the conducted emissions tests).

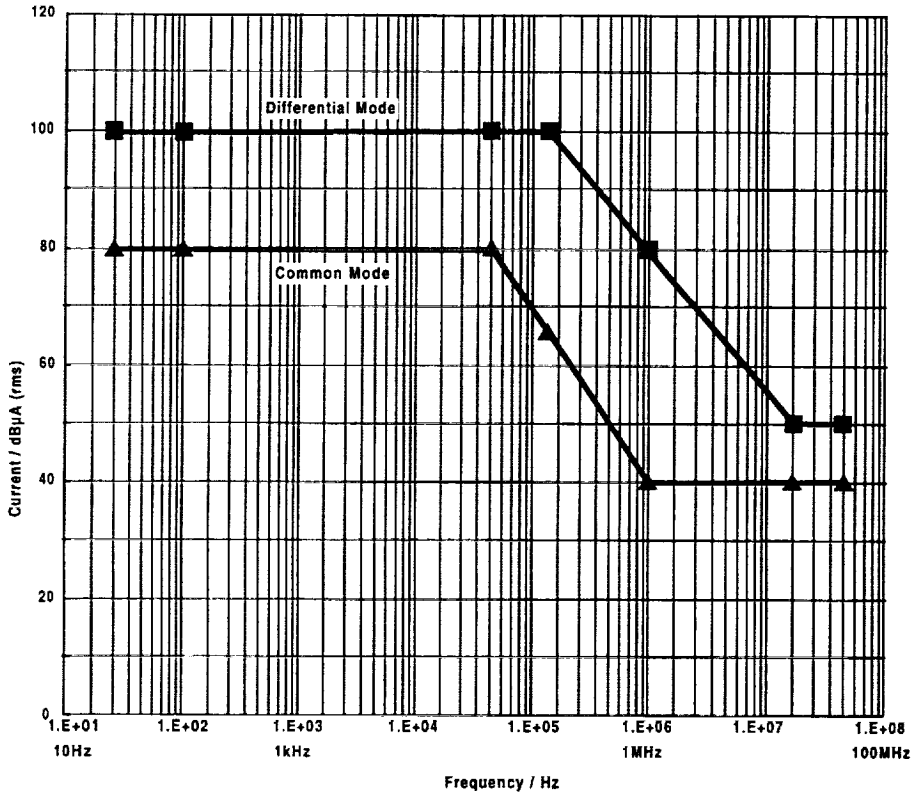


Figure 1. METOP Conducted Emission Limit, NB, DM, CM, 28V Reg. Power Leads, PLM Instrument

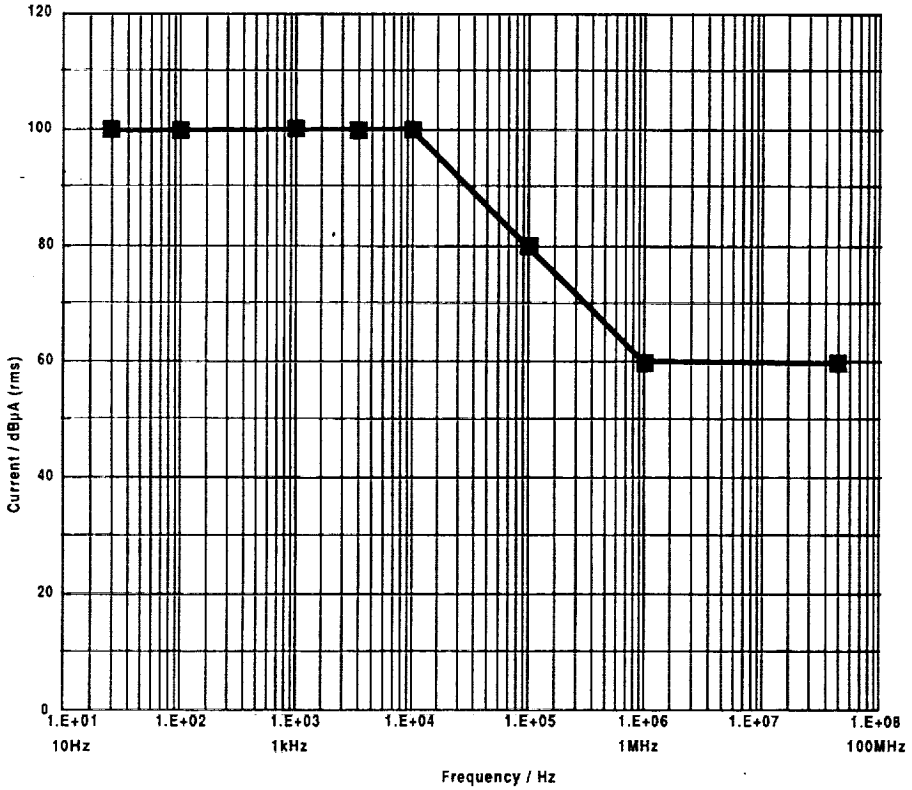


Figure 2. METOP Conducted Emission Limit, NB, DM, Thermal Control Heaters (Safety Heater)

8. Make an X-Y plot. All narrowband measured data should be below the limit shown in Figures 3 and 4 (AE-26151/5D). If any emissions exceed or near the limit, scan the frequency range that exhibits the over-the-limit levels, reduce the frequency span, reduce the measuring bandwidth to 5 or 500 Hz, and photograph the CRT presentation or make an X-Y plot.

9. Connect the current probe to the return power line of the Main Power Bus between the feedthrough capacitor and the AMSU-A instrument.

10. Repeat steps 2 and 8 for the return power line. Record all conducted emissions generated by the AMSU-A instrument and compare them to the METOP requirement.

11. Connect the current probe to the Pulsed Load Bus power line between the feedthrough capacitor and the AMSU-A instrument.

12. Repeat steps 2 and 8 for the Pulsed Load Bus power line. Record all conducted emissions generated by the AMSU-A instrument.

13. Connect the current probe to the return power line between the feedthrough capacitor and the AMSU-A instrument.

14. Repeat steps 2 and 8 for the return power line. Record all conducted emissions generated by the AMSU-A instrument.

15. Connect the current probe to the Analog Telemetry Bus power line between the feedthrough capacitor and the AMSU-A instrument.

16. Repeat steps 2 and 8 for the Analog Telemetry Bus power line. Record all conducted emissions generated by the AMSU-A instrument.

17. Connect the current probe to the return power line between the feedthrough capacitor and the AMSU-A instrument.

18. Repeat steps 2 and 8 for the return power line. Record all conducted emissions generated by the AMSU-A instrument.

19. Connect the current probe to the +10 V Interface Bus power line between the feedthrough capacitor and the AMSU-A instrument.

20. Repeat steps 2 and 8 for the +10 V Interface Bus power line. Record all conducted emissions generated by the AMSU-A instrument.

21. Connect the current probe to the return power line between the feedthrough capacitor and the AMSU-A instrument.

22. Repeat steps 2 and 8 for the return power line. Record all conducted emissions generated by the AMSU-A instrument.

23. Connect the current probe to the Safety Heater Bus power line between the feedthrough capacitor and the AMSU-A instrument.

24. Repeat steps 2 and 8 for the Safety Heater Bus power line. Record all conducted emissions generated by the AMSU-A instrument.

25. Connect the current probe to the return power line between the feedthrough capacitor and the AMSU-A instrument.

26. Repeat steps 2 and 8 for the return power line. Record all conducted emissions generated by the AMSU-A instrument.

27. With the instrument powered OFF, replace the feedthrough capacitors with the Line Stabilization Impedance Network (LISN), shown in Figure 3, on the Main Power Bus power lines.

28. Connect the current probe to the Main Power Bus high side and return power lines between the LISN and the AMSU-A instrument.

29. Repeat steps 2 and 8 for the Main Power Bus common mode measurements. Record all conducted emissions generated by the AMSU-A instrument.

30. With the instrument powered OFF, locate the LISN on the Pulse Load Bus power lines.

31. Connect the current probe to the Pulse Load Bus high side and return power lines between the LISN and the AMSU-A instrument.

32. Repeat steps 2 and 8 for the Pulsed Load Bus common mode measurements. Record all conducted emissions generated by the AMSU-A instrument.

33. With the instrument powered OFF, locate the LISN on the Analog Telemetry Bus power lines.

34. Connect the current probe to the Analog Telemetry Bus high side and return power lines between the LISN and the AMSU-A instrument.

35. Repeat steps 2 and 8 for the Analog Telemetry Bus common mode measurements. Record all conducted emissions generated by the AMSU-A instrument.

36. With the instrument powered OFF, locate the LISN on the +10 V Interface Bus power lines.

37. Connect the current probe to the +10 V Interface Bus high side and return power lines between the LISN and the AMSU-A instrument.

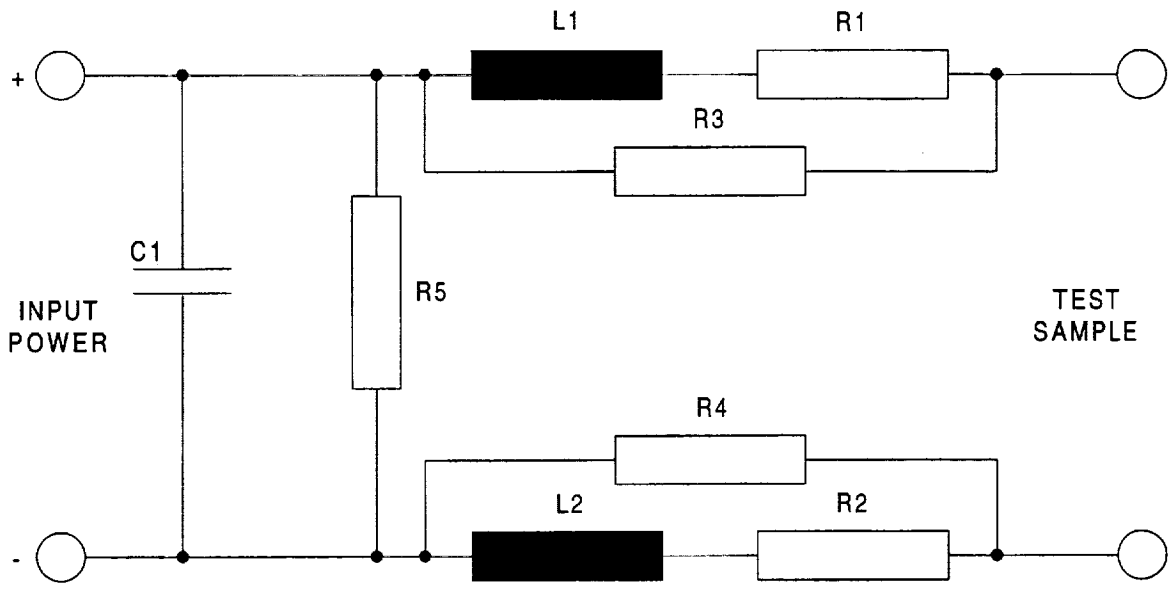
38. Repeat steps 2 and 8 for the +10 V Interface Bus common mode measurements. Record all conducted emissions generated by the AMSU-A instrument.

39. Command the instrument scanner OFF and turn off the Main Power switch on the STE by entering the STE command "[9] SCANNER A1-1 POWER" or "[10] SCANNER A1-2 POWER", as applicable. The state of the command should change from ON to OFF.

NOTE

Command "[9] SCANNER A2 POWER" is for AMSU-A2. Commands "[9] SCANNER A1-1 POWER" and "[10] SCANNER A1-2 POWER" are for AMSU-A1.

40. Turn off the main power switch on the STE front panel.



R1, R2 = 20 mOhm ± 5 mOhm

R3, R4 = 25 Ohm ± 5 %

R5 = 50 kOhm ± 5%

C1 = 19000 μF ± 5%

L1, L2 = 2 μH ± 5%

Figure 3. LISN Circuit Diagram

2.1.5 Test comment

This test was conducted in accordance with the above test plan, with no exceptions.

2.1.6 Test results

The measured conducted emission levels were below the limits of test method CE01 throughout the frequency range of 30 Hz to 20 kHz in the differential and common mode test configuration. In the differential mode, the Pulsed Load Bus power lines exhibited the highest emissions. The measured levels were 3 dB below the METSAT limit at the highest point, i.e., 60 Hz. In the common mode, the Pulsed Load Bus power lines were 11 dB below the METOP limit at 18.35 kHz. All the other power lines produced emissions from 4 to greater than 60 dB below the appropriate limit.

The AMSU-A instrument meets the METSAT and METOP requirements of test method CE01, without exception. See Plots 1 through 10 for the differential mode test data, and Plots 11 through 14 for the common mode test data in Section 3, Test Data Sheet 1.

2.2 Conducted emissions (CE03) test (METSAT & METOP)

2.2.1 Purpose of test

This test was conducted to demonstrate that the electromagnetic interference currents in the power lines do not exceed the limits in Figures 1, 2, and 4, throughout the frequency range of 20 kHz to 50 MHz.

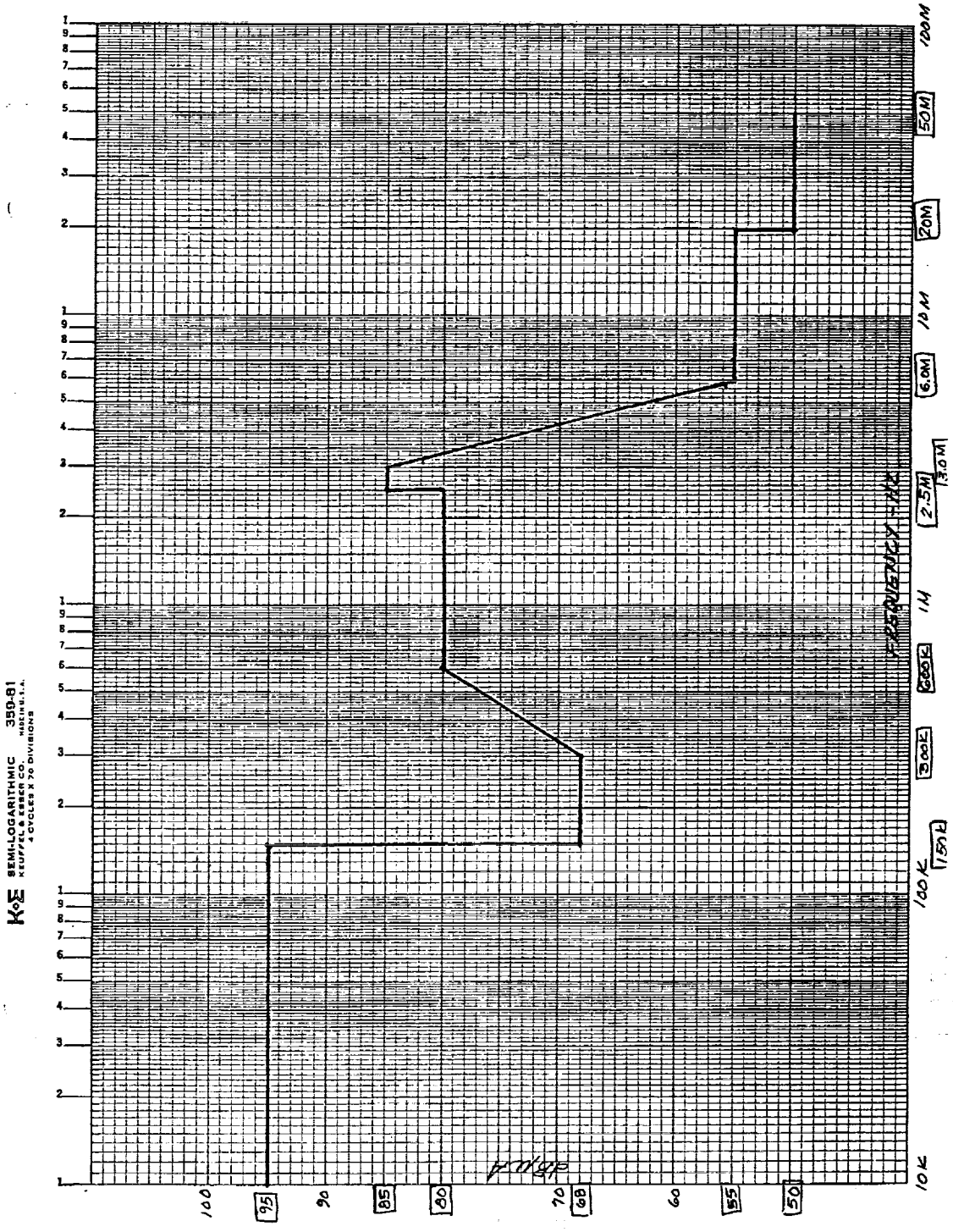


Figure 4. METSAT Narrowband Conducted Emissions Limits on Power Leads

2.2.2 Date test started

The test began on 15 December 1998.

2.2.3 Date test completion

The test was completed on 15 December 1998.

2.2.4 Test procedure

The test procedure specified that the test be conducted as indicated in the following steps:

1. Using the configuration depicted in Figure 5 (AE-26151/5D), place the current probe (91550-1) on one of the power lines listed in para. 3.4.4.2 (AE-26151/5D).

2. Verify that the measuring equipment is programmed to measure between 20 kHz and 50 MHz.

3. Using the spectrum analyzer system (HP 8566B), automatically scan all narrowband data from 20 kHz to 50 MHz. Plot the CRT presentation.

4. All measured data should be below the limit shown in Figures 1, 2, and 4 (AE-26151/5D). If any emissions are observed to exceed or near the limit line, reduce the measuring bandwidth to 500 Hz, 5 kHz, or 50 kHz, and command the computer to print the measured level of the signal.

5. Repeat steps 1 through 4 on the power lines listed in para. 3.4.4.2 and repeat the steps 3 through 26 of test method CE01 for differential mode tests.

6. Repeat steps 27 through 38 of test method CE01 for common mode tests.

7. If any narrowband signal exceeds the limits, perform an ambient test and determine the source of the emanation.

8. Affix all plots, photos, calculations, and related information to TDS 1.

2.2.5 Test results

All the measured conducted emissions were below the limits of the test method CE03 throughout the frequency range of 20 kHz to 50 MHz in the differential and common mode test configuration. In the differential mode, the highest emission recorded was 4 dB below the METSAT limit. This occurred in the Pulsed Load Bus at 208 kHz, and on the Pulsed Load Bus return at 208 kHz. All other peak noise emissions are between 0 to 30 dB below the METSAT limit. When the differential mode emissions are compared to the METOP limit, the highest emission was recorded on the Safety Heater Bus high side return. The emission is 15 dB below the METOP limit at 520 kHz. All other peak noise emissions are between 30 to 38 dB below the METOP limit.

In the common mode, all the peak emissions are between 11 to 17 dB below the METOP common mode limit. See Plots 15 through 24 for the differential mode test data, and Plots 25 through 28 for the common mode test data in Section 3, Test Data Sheet 1.

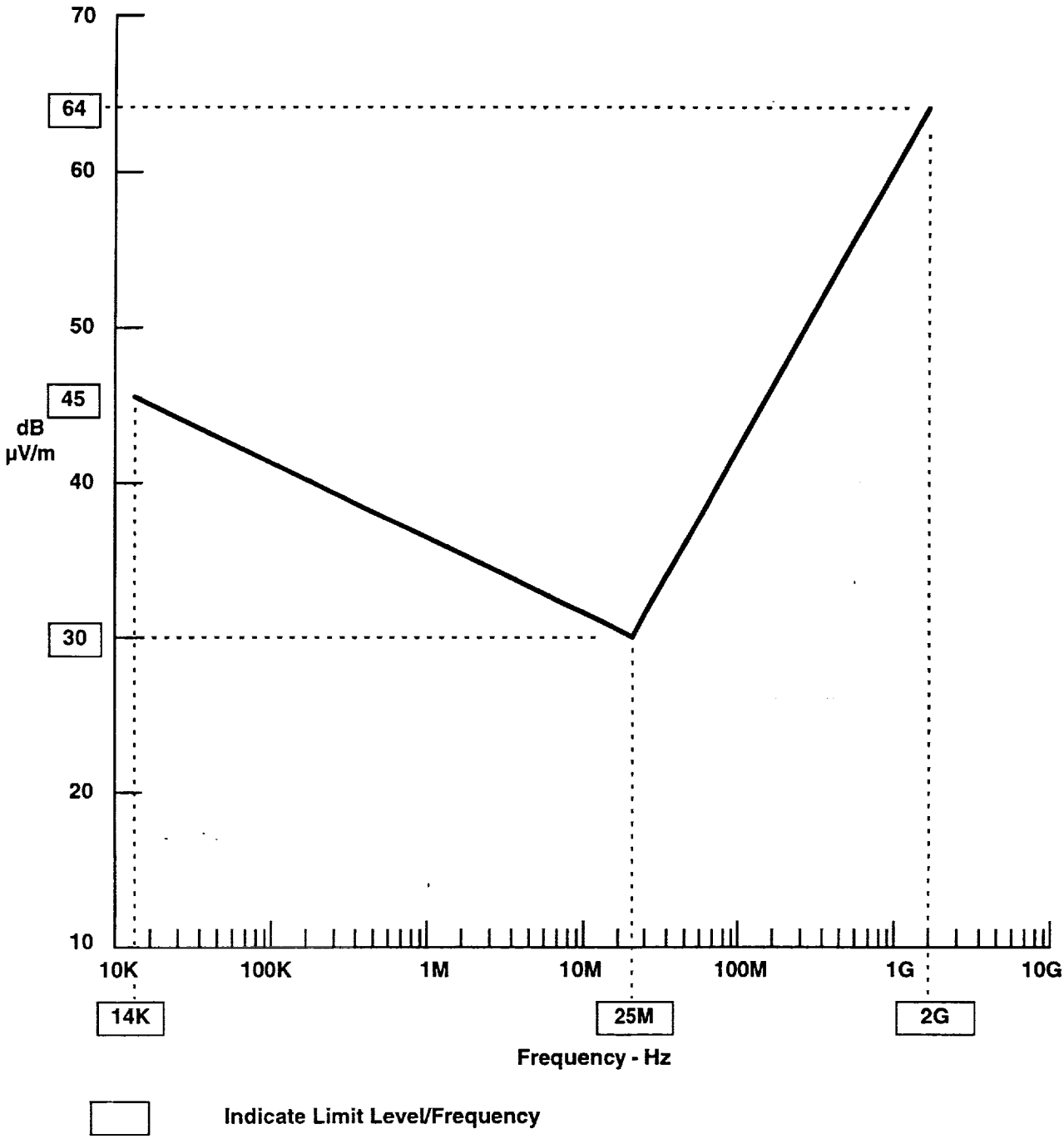


Figure 5. Radiated Narrowband Limits for Electric-Field Emission Produced by Instrument, METSAT

2.3 Radiated emissions (RE02) test (METSAT & METOP)

2.3.1 Purpose of test

The test was conducted to demonstrate that the radiated magnetic fields from the test sample and associated cables do not exceed the limits in Figures 5, 6, and 7. In addition, the radiated emissions at the special frequencies in Table III and IV shall be below the sensitivity indicated in the appropriate frequency.

2.3.2 Date test started

The test began on 15 December 1998. A partial retest began on 22 December 1998.

2.3.3 Date test completion

The test was completed on 16 December 1998. The partial retest was completed on 22 December 1998.

2.3.4 Test procedure

The test procedure specified that the test be conducted as indicated in the following steps:

1. Connect the antenna to the proper receiver/amplifier port. Verify that the AMSU-A is operating in the IN ORBIT.

2. Allow the EMC test equipment to warm up for a minimum of 10 minutes.

3. Program the spectrum analyzer system (HP 8566B) to automatically scan and plot all narrowband data from 14 kHz to 1 GHz, switching the appropriate antenna/amplifier throughout the frequency range.

4. All data shall be below the limits shown in Figures 6 and 8 (AE-26151/5D). If any emissions are observed to exceed the limit line, command the computer to print the measured levels.

5. Request of the computer all broadband data from 14 kHz to 1 GHz. Plot the CRT presentation with limits.

6. All data shall be below the limits shown on Figure 7 (AE-26151/5D). If any emissions are observed to exceed the limit line, command the computer to print the measured levels.

7. If any signals, narrowband or broadband, exceed the limits, perform an ambient test and determine the source of the emanations. Reduce or eliminate the source, if external to the AMSU-A instrument, and repeat the test.

8. Set up the horn antenna (RGA-180) one meter from the point of maximum radiation.

9. Self-calibrate the signal analyzer (HP 71210C).

10. Sweep throughout the frequency range of 1 to 18 GHz in a minimum of three ranges, recording the observed narrowband emission levels. Plot emissions detected throughout each frequency range.

11. All data shall be below the limits shown on Figures 6 and 8 (AE-26151/5D); if not, perform step 7.

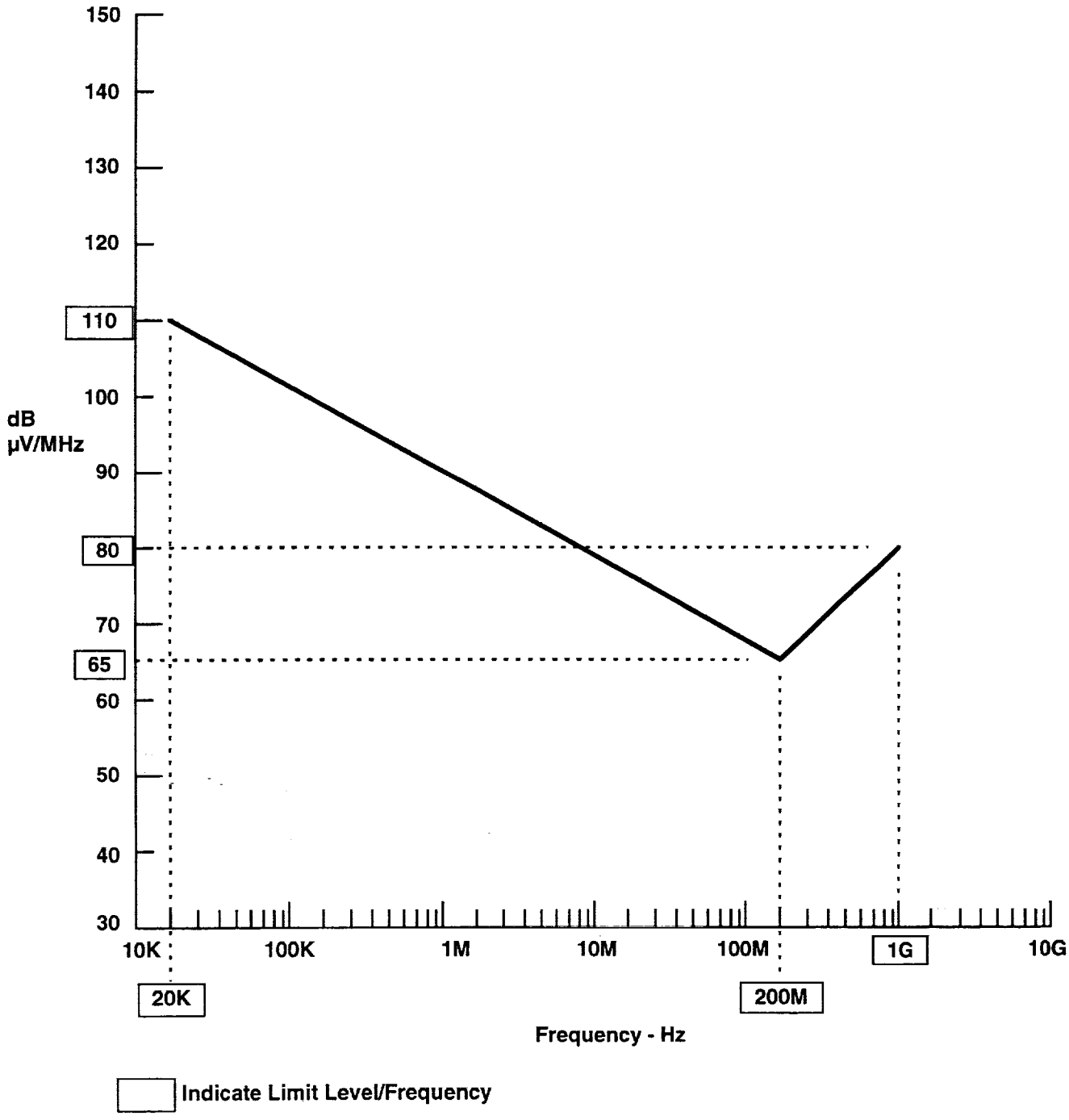


Figure 6. Radiated Broadband Limits for Electric-Field Emissions Produced by Instrument, METSAT

12. Affix all plots, photos, calculations, and related information to TDS 2.

13. After disconnecting the horn antenna, set the signal analyzer (HP 71210C) to one of the four frequencies listed in 3.4.6 (AE-26151/5D) with the appropriate frequency span.

14. Activate the series preamplifier (HP 70620) and reduce the test equipment bandwidth to 10 kHz or less.

15. Program the signal analyzer (HP 71210C) for noise averaging to a minimum of eight times. Verify that the sensitivity noise level is below the required level.

16. Connect the antenna to the signal analyzer amplifier input.

17. The measurement should be within the ambient level, and no narrowband frequencies should be detected at the specified frequency above the sensitivity level specified in 3.4.6 (AE-26151/5D). Plot the screen presentation.

18. Repeat steps 13 through 17 while performing a measurement on the remaining frequencies.

19. Record the information regarding the test on TDS 2 and attach all plots, photos, calculations, and other related information.

20. Repeat steps 13 through 17 while performing measurements on the frequencies depicted on Table III (AE-26151/5D).

21. Repeat step 19.

2.3.5 Test comment

This test was conducted in accordance to the above test plan, with no exceptions.

2.3.6 Test results

The AMSU-A1 instrument met all the electric field radiation requirements for the METSAT and the METOP specifications without exception. The AMSU-A1 instrument exhibited a narrowband signal emission at 15.0 MHz that approximated the limit. The emission is attributed to the STE cables that penetrate the shielded enclosure. In order to reduce the room emission due to the twenty foot cable inside the room, the shields had to be grounded to the ground plane. The broadband emissions were 30 dB or better below the limit. See Plots 101 through 106, Test Data Sheet 2.

The AMSU-A1 instrument meets the low level emissions requirements for the special frequencies related to the SARR, SARP, and DCS receiver channels. All the recorded emissions were below the required limit. Measurements were performed with the antenna positioned in two polarities, i.e., vertical and horizontal polarization. The data related to the frequencies depicted in Table IV are presented in Plots 110 through 161 of Test Data Sheet 2.

The METSAT special frequencies depicted on Table III meet the sensitivity requirements without exception. There were no emissions detected within the bandwidth of each of the special frequencies. Measurements were performed with the antenna positioned in two polarities. The data related to the frequencies of Table III are presented in Plots 162 through 187 of Test Data Sheet 2.

The METOP special frequencies depicted on the table inside Figure 7 meet the sensitivity requirement without exception. There was only one emission detected at 495.3 MHz that was 14.8 dB below the

sensitivity limit. Measurements were performed with the antenna positioned in two polarities. The data related to the frequencies listed on Figure 7 are presented in Plots 188 through 199 of Test Data Sheet 2.

The AMSU-A1 instrument meets all the electric field radiation requirements of METSAT and METOP in the frequency range of 1 to 18 GHz without exceptions. No narrowband emissions were detected throughout the measured frequency range. Measurements were performed with the antenna positioned in two polarities. The data related to this frequency range are presented in Plots 200 through 211 of Test Data Sheet 2.

2.4 Radiated emission (RE04) test

2.4.1 Purpose of test

This test was conducted to demonstrate that the radiated magnetic fields from the test sample and associated cables do not exceed the limit of one milligauss at a distance of one meter from the lateral wall of the instrument in all directions.

2.4.2 Date test started

The test began on 21 December 1998

2.4.3 Date test completion

The test was completed on 21 December 1998.

2.4.4 Test procedure

The test procedure specified that the test be conducted as indicated in the following steps:

1. Move the AMSU-A instrument, on the plastic cart, toward the probe to a distance of one meter from the wall of the instrument to the point of the probe.

2. Manually rotate the instrument.

3. With the unit activated in the IN ORBIT mode, measure the magnetic field emissions of the AMSU-A instrument. Collect test data of the magnetic field intensity by rotating the equipment clockwise and taking measurements at intervals of not less than every 30 degrees. Record the results and note the level and location on TDS 3 (AE-26151/5D).

4. Allow the instrument to scan for a 30 minute warm up.

5. At the point(s) of maximum detection, repeat measurements with the instrument in the off position. Note difference in level. If levels exceed previous measurement levels, repeat step 2 with the unit deactivated.

6. Review recorded data. If measurement are below the 1 milligauss level at one meter from the instrument in all directions, the test is completed. If measurements exceed the limit, measure the ambient level and proceed to step 7 or step 8.

7. In the event that the ambient level does not meet the requirement and the ambient cannot be reduced further because of the facility or area limitations, a minimum of three correlatable measurements shall be made in the axis of maximum field intensity but at a shorter distance than one meter. The measured levels shall be able to provide an approximate field intensity. Ambient magnetic field shall be recorded and shall be part of the test data package.

8. In the event that the measured level exceeds the required level, the measurements shall be made to determine the location of the center of the magnetic dipole moment producing the out-of-limit condition. A minimum of three correlatable measurements along an axis is required to plot the magnetic field.

9. Record all measured data, indicating level and position of the probe. Note opposing magnetic dipole moments, shield leakage, and all other pertinent data.

10. Repeat measurement within ten inches above and below the mid-height probe placement.

2.4.5 Test comment

This test was conducted in accordance to the above test plan, with no exceptions.

2.4.6 Test results

The AMSU-A1 instrument meets the requirement without exception. The instrument was measured with the unit power "OFF" and in the IN ORBIT mode. Under both conditions, the instrument magnetic field level, at three heights, do not exhibit emissions above 0.88 milligauss one meter from the unit. See Test Data Sheet 3.

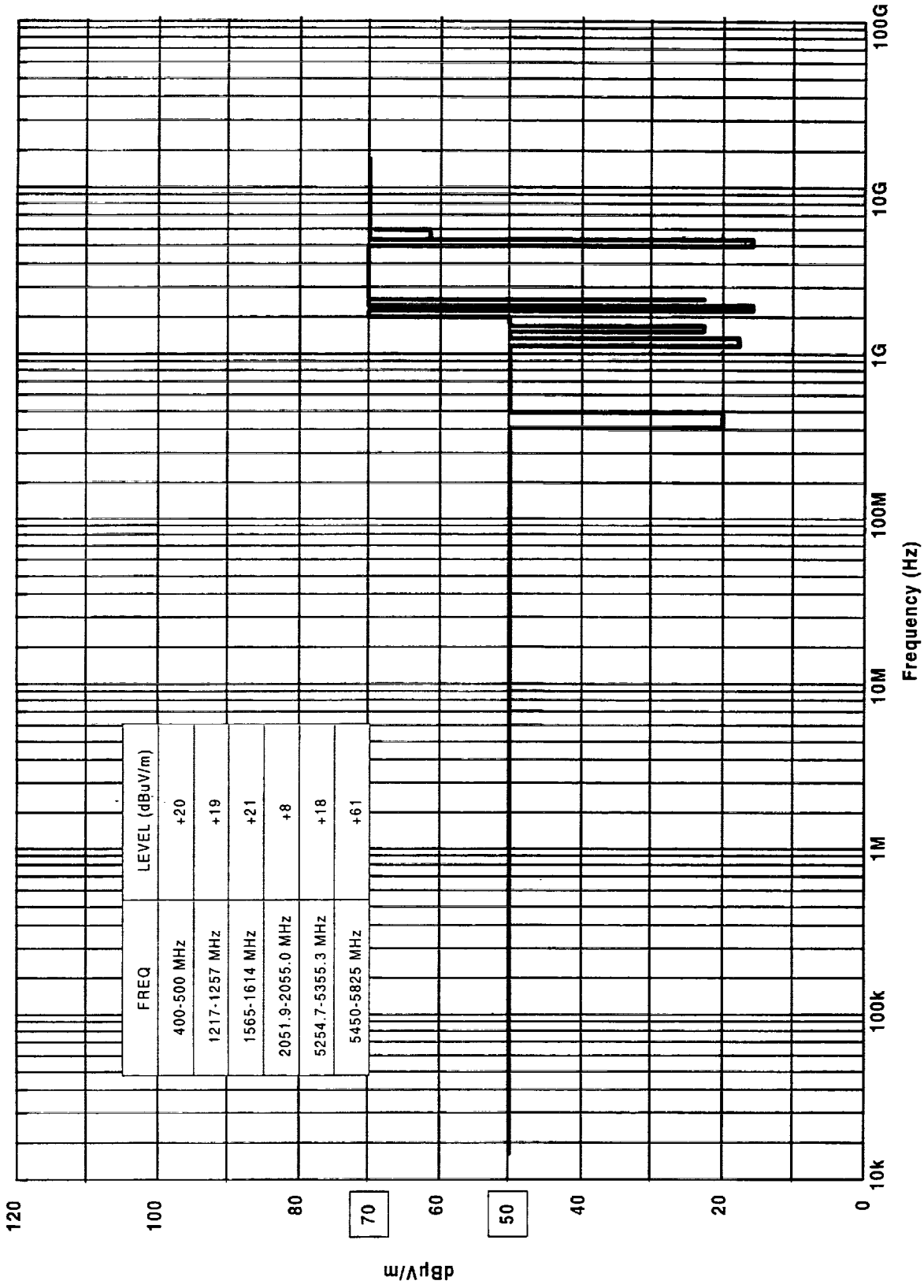


Figure 7. Radiated Narrowband Limits for Electric Field Emissions METOP Only

Table III METSAT Special Frequencies

Frequency	Receiver/Ampl Sensitivity
59.458 MHz ±0.5 kHz	–60 dBm
60.10 MHz ±0.5 kHz	–60 dBm
141.360 MHz ±0.5 kHz	–60 dBm
142.9 MHz ±0.5 kHz	–60 dBm
282.733 MHz ±0.5 kHz	–60 dBm
285.813 MHz ±0.5 kHz	–60 dBm
371.921 MHz ±0.5 kHz	–60 dBm
375.972 MHz ±0.5 kHz	–60 dBm
624.925 MHz ±0.5 kHz	–60 dBm
631.730 MHz ±0.5 kHz	–60 dBm
743.841 MHz ±0.5 kHz	–60 dBm
751.944 MHz ±0.5 kHz	–60 dBm
121.5 MHz ±15 kHz *	–150 dBm (Bandwidth 100 Hz)
243 MHz ±25 kHz *	–150 dBm (Bandwidth 100 Hz)
401.650 MHz±50 kHz *	–150 dBm (Bandwidth 100 Hz)
406.05 MHz±50 kHz *	–150 dBm (Bandwidth 100 Hz)
2010-2040 MHz	–120 dBm

* METOP replaces these frequencies with the frequencies in Table IV.

Table IV SARR, SARP, and DCS Receiver Channel Guard Limits

Frequency Range (MHz)	Radiation Limit (dBm)	E-Field Limit * (dB μV/m)	Notes
118.00-120.00	-100	18.9	121.5 MHz
120.00-121.450	-125	-6	121.5 MHz
121.450-121.485	-145	-26	121.5 MHz
121.485-121.515	-150	-31	121.5 MHz
121.515-121.550	-145	-26	121.5 MHz
121.550-123.000	-125	-5.9	121.5 MHz
123.000-125.000	-100	19.2	121.5 MHz
236.000-240.000	-100	24.9	243.0 MHz
240.000-242.925	-125	0	243.0 MHz
242.925-242.975	-145	-20	243.0 MHz
242.975-243.025	-150	-25	243.0 MHz
243.025-243.075	-145	-20	243.0 MHz
243.075-246.000	-125	0.1	243.0 MHz
246.000-250.000	-100	25.3	243.0 MHz
385.100-401.100	-100	29.4	406.05 MHz
401.100-405.900	-125	4.5	406.05 MHz
405.900-406.000	-145	-15.5	406.05 MHz
406.000-406.100	-150	-20.5	406.05 MHz
406.100-406.200	-145	-15.5	406.05 MHz
406.200-411.000	-125	4.6	406.05 MHz
411.000-425.000	-100	29.9	406.05 MHz
396.000-401.500	-125	4.4	401.65 MHz
401.500-401.600	-145	-15.6	401.65 MHz
401.600-401.700	-150	-20.6	401.65 MHz
401.700-401.800	-145	-15.6	401.65 MHz
401.800-406.000	-125	4.5	401.65 MHz

* E-field limits have been calculated by METOP and are for reference only. The following formula has been applied for translating Power levels to Field strength levels.

$$E[dB\mu V/m] = P[dBm] - Gr[dBi] + 20\log(f[\mathrm{Hz}]) - 42.7$$

where P is the received power, Gr is the gain of the receiving antenna and f is the frequency. Note that Gr has arbitrarily been set to 0 dB (isotropic) in calculating the above levels. E-field limits would have to be adjusted to reflect actual test antenna characteristics.

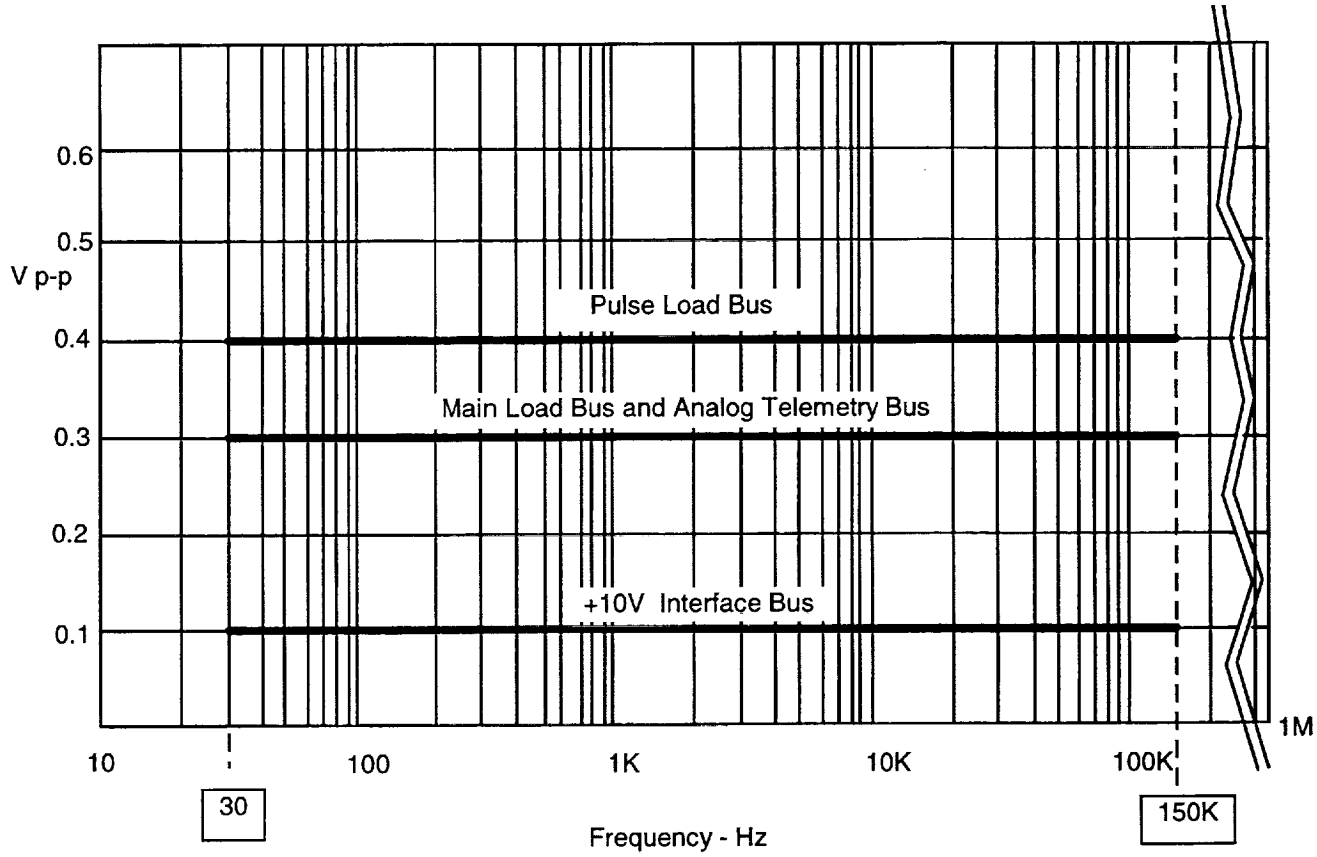


Figure 8. Ripple and Noise Susceptibility Limit

2.5 Conducted Susceptibility (CS01/CS02) test (METSAT & METOP)

2.5.1 Purpose of test

The test was conducted to demonstrate that the test sample is not susceptible to transformer-coupled audio frequency conducted interference levels on the input power leads, to the levels indicated in Figure 8.

2.5.2 Date test started

The test began on 11 December 1998.

2.5.3 Date test completion

The test was completed on 12 December 1998.

2.5.4 Test procedure

The test procedure specified that the test be conducted as indicated in the following steps:

1. With the setup shown in Figure 9, apply power to all the test equipment and set the power amplifier to ON, and the "Right/Mono Gain" knob to min. (counterclockwise).

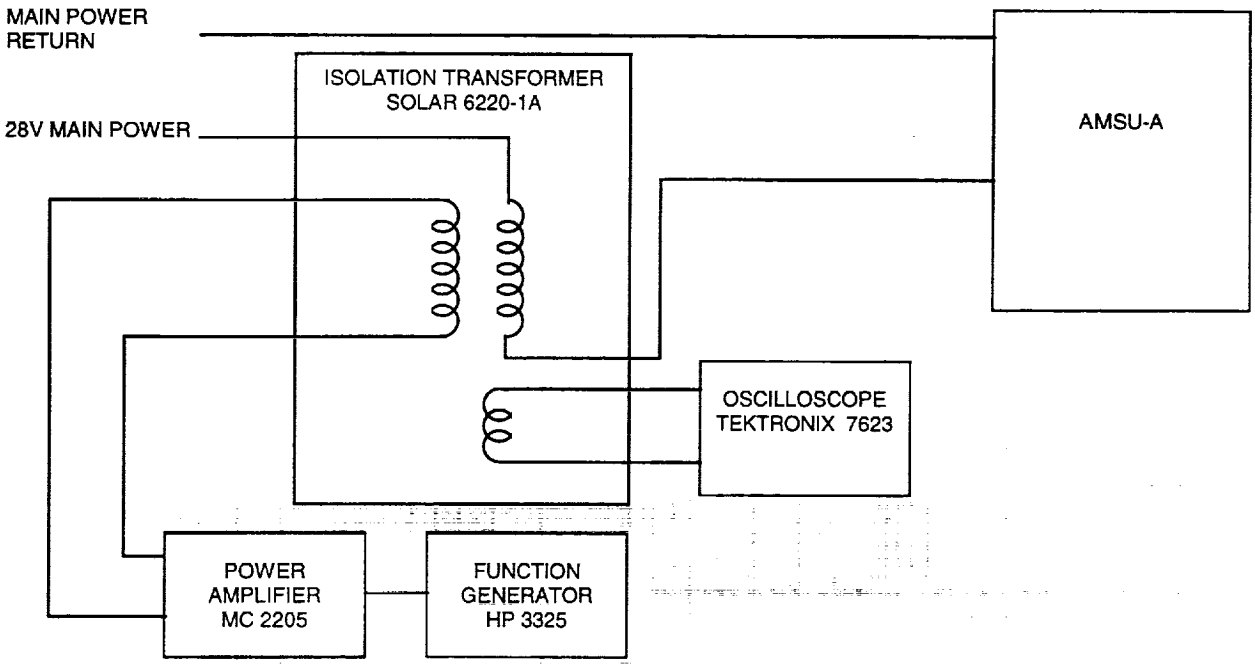


Figure 9. CS01 Test Setup

2. Set the function generator to sweep from 30 Hz to 50 kHz, using the following discrete frequency ranges with a sweep rate of 90 seconds per range:

30 - 300 Hz	3.0 - 30.0 kHz
300 Hz - 3.0 kHz	30.0 - 150.0 kHz.

3. Set the scan mode to SINGLE Sweep.

4. Monitor the output with an oscilloscope and adjust the output level to the indicated voltage requirement.

5. Set the appropriate switches to the OFF position on the breakout box.

6. Apply power to the power amplifier and adjust the amplifier and generator levels to obtain levels on the display that are equal than the levels indicated in Figure 11 (AE-26151/5D).

7. Monitor the test sample for errors and at selected frequencies get a printout of the monitored channel's performance data.

8. Record on TDS 4 the completion of scanning of each function generator's tuning range. Record each frequency at which a failure occurs and the interference level threshold for failure.

9. Repeat steps 5 through 8 on the power leads listed in 3.4.4.2.c (AE-26151/5D).

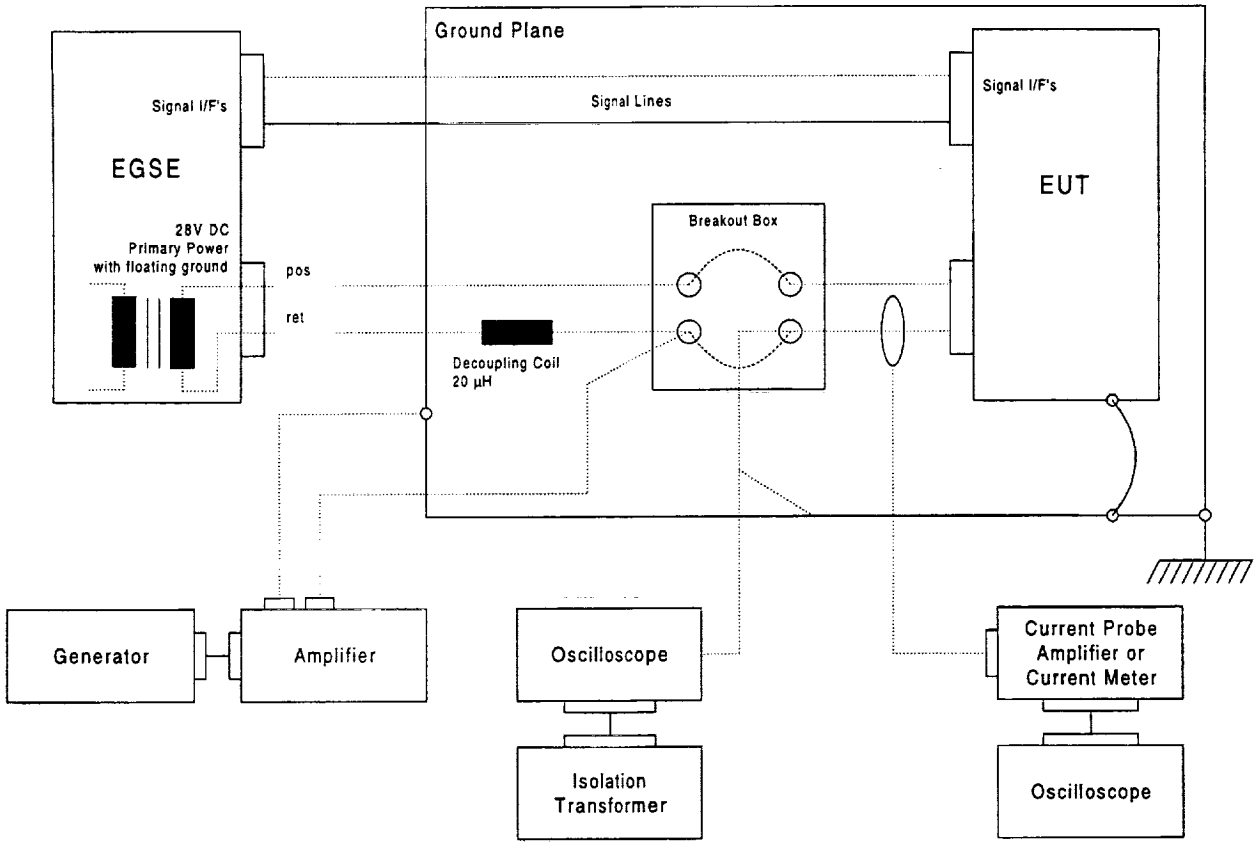


Figure 10. Common Mode Noise Test on the +28V Main Bus

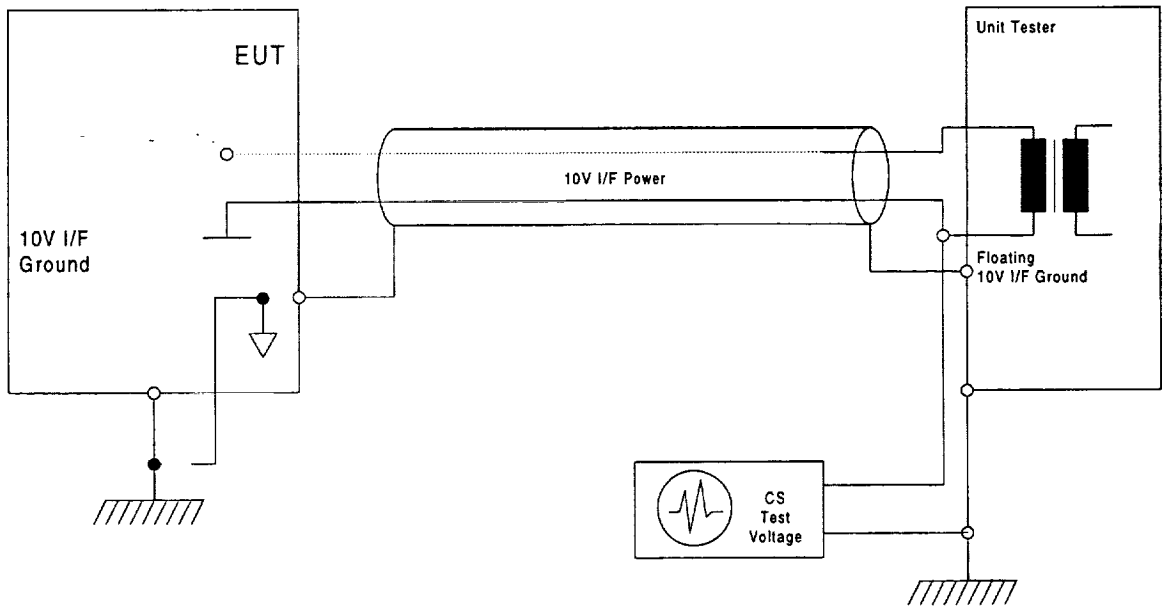


Figure 11. Common Mode Noise Test on the +10V Interface Bus

2.5.5 Test comment

This test was conducted in accordance to the test plan, without exception.

2.5.6 Test results

The AMSU-A1 instrument meets the requirements of test method CS01/CS02 throughout the frequency range of 30 Hz through 150 kHz. Throughout the conducted susceptibility test, the instrument did not exhibit any indication of susceptibility. This test was conducted in the differential mode noise test. See Test Data Sheet 4 in Section 3.

2.6 Conduct Susceptibility (CS02) test (METOP)

2.6.1 Purpose of test

This test was conducted to demonstrate that the test sample is not susceptible common mode noise of 300 mV p-p injected on the input power return leads using the test setup indicated in Figures 10 and 11. The frequency range of interest covers the range of 100 kHz to 50 MHz.

2.6.2 Date test started

The test began on 14 December 1998.

2.6.3 Date test completion

The test was completed on 14 December 1998.

2.6.4 Test procedure

The test procedure specified that the test be conducted as indicated in the following steps:

1. The instrument shall be connected as shown in Figures 13 or 14 (AE-26151/5D).

2. Apply power to the test equipment.

3. Sweep the function generator from 100 kHz to 50 MHz in the frequency ranges indicated below:

100 to 500 kHz	5 to 10 MHz
500 to 1000 kHz	10 to 20 MHz
1 to 5 MHz	20 to 50 MHz

4. Each frequency range shall be swept at a 90 second rate. Perform data collection test in accordance with Appendix C (AE-26151/5D).

5. Monitor the output signals and adjust the level as required. Record the frequency range covered and the minimum voltage injected during the test on TDS 5.

6. Repeat steps 1 through 5 on the other lines listed in 3.4.4.2.c (AE-26151/5D).

2.6.5 Test comment

This test was conducted in accordance to the test plan, without exception.

2.6.6 Test results

The AMSU-A1 instrument meets the requirement of test method CS02, common mode test, throughout the frequency range of 100 kHz to 50 MHz. No malfunction or reduction of performance was noted during the conduct of the test. This test was conducted in the common mode noise test. See Test Data Sheet 5 in Section 3.

2.7 Conduct Susceptibility (CS06) test (METSAT & METOP)

2.7.1 Purpose of test

This test was conducted to demonstrate that the test sample is not susceptible to transient spike conducted interference on the input power leads, as shown in Figure 12.

No failures shall occur when the voltage waveform indicated is applied to the input power line, at the level and polarity indicated below:

Bus	Spike Level
+28 V Main Bus	10 V positive, 12 V negative
+28 V Telemetry Bus	10 V positive, 12 V negative
+28 V Pulsed Load Bus	8 V positive, 13 V negative
+10 V Interface Bus	1 V positive, 1 V negative

2.7.2 Date test started

The test was started on 22 December 1988.

2.7.3 Date test completion

The test was completed on 22 December 1998.

2.7.4 Test procedure

The test procedure specified that the test be conducted as indicated in the following steps:

1. Connect the test equipment per Figure 13.
2. With the AMSU-A1 instrument operating, adjust the transient generator to produce the spike of Figure 12 to the level specified in 2.7.1 above.
3. Apply the spike at a 10 pps rate for 5 minutes to the main power line.
4. Monitor the test sample for errors.
5. Reverse the spike polarity and level as indicated in 2.7.1. Repeat steps 3 through 4.

6. Record the completion of each test on TDS 6. If failures occur, record the pulse amplitude and polarity.

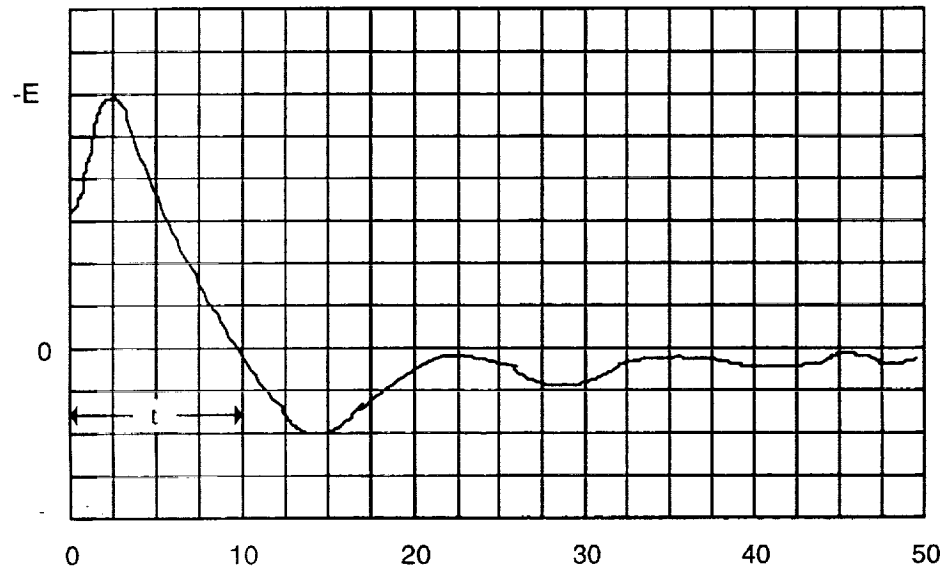
7. Repeat steps 1 through 6 on the other lines listed in 3.4.4.2.d (AE-26151/5D).

2.7.5 Test comment

The test was conducted in accordance to the above test plan, with no exceptions.

2.7.6 Test results

The AMSU-A1 instrument meets the requirement of test method CS06 without any exceptions. No malfunction or reduction of performance was noted during the entire conduct of this test. The same test level satisfies the METSAT and METOP requirements. See Test Data Sheet 6 in Section 3.



-E = AS SPECIFIED IN 3.4.9.2 (AE-26151/5D).
t = 10 MICROSECONDS.

Figure 12. CS06 Transient Waveform

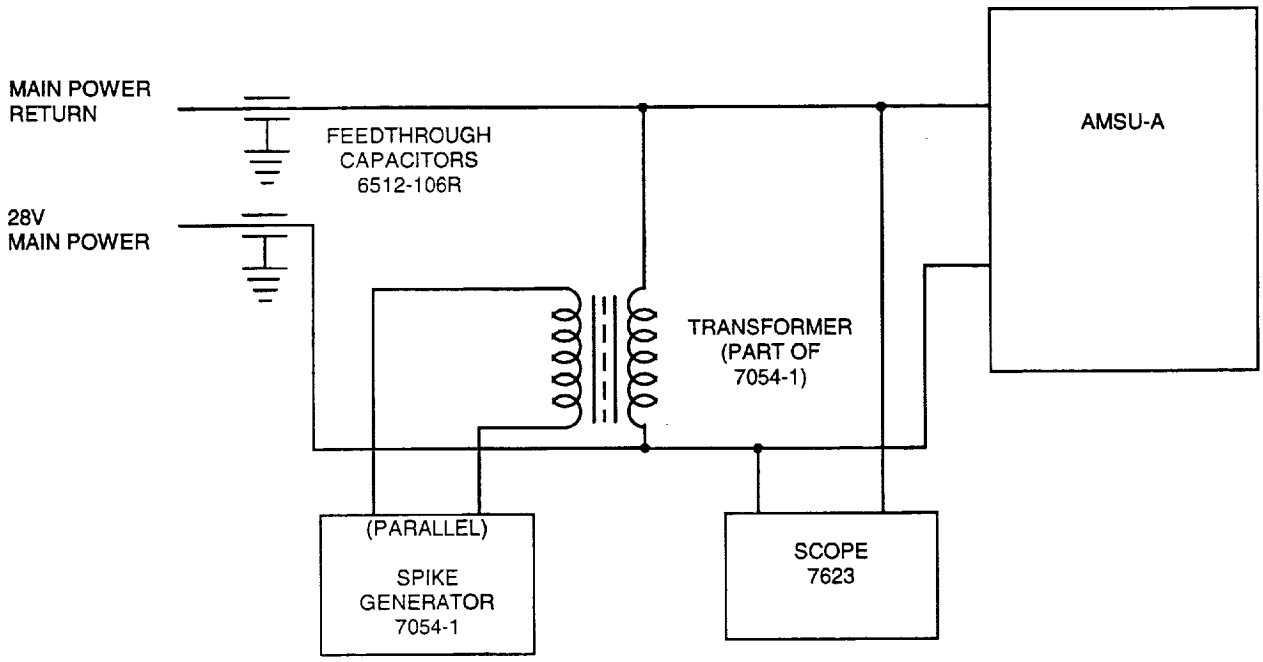


Figure 13. CS06 Test Setup

2.8 Radiated Susceptibility (RS03) test

2.8.1 Purpose of test

This test was performed to demonstrate that the test sample and associated cables are not susceptible to the radiated electric fields shown in Table V.

2.8.2 Date test started

The test began on 17 December 1998.

2.8.3 Date test completion

The test was completed on 21 December 1998.

2.8.4 Test procedure

The test procedure specified that the test be conducted as indicated in the following steps:

1. Power on all test equipment and allow a 15 minute warm-up time before continuing.
2. Set the generator level control to REAR ONLY.
3. Adjust the signal generator for a 160 mV output signal.
4. Adjust the Electric Field Monitor to read the generated electric field on all three orthogonal axes. Since the sensitivity presented on the monitor's digital display is 1.3 V/m, minimum, adjust the electric field level to read 2 V/m.

5. Adjust the level to that indicated in Table VI (AE-26151/5D) throughout the frequency range of 14 kHz to 1 MHz, in the following steps:

   14 - 100 kHz 100 - 500 kHz

   500 - 1000 kHz.

6. As the frequency range is being scanned at a 90 sec rate, check the leveling by varying the signal drive to the power amplifier.

7. At 1 MHz, switch the antenna FUNCTION switch to the 1 to 30 MHz range.

8. Adjust the level control to the power amplifier to the required level in the frequency range of 1 MHz to 30 MHz in the following steps:

   1 - 5 MHz 5 - 8 MHz 8 - 12 MHz 12 -20 MHz 20 - 30 MHz.

9. Monitor the Function Test for each channel by performing data collection test in accordance with Appendix C (AE-26151/5D). Record observation on TDS 7 and attach a printout of the monitored channels' performance data (obtain a baseline before starting the frequency scans, and ensure that the level is as low as possible).

10. Replace the broadband antenna with the biconical antenna.

11. With the frequency set at 30 MHz, adjust the output of the power amplifier for 2 volts per meter.

12. Operate the test equipment controls during the scan. Monitor the test sample for errors while scanning the frequency range between 25 and 200 MHz and recording the data as required in Step 9, using the following frequency ranges:

    30 - 50 MHz 50 - 100 MHz 100 - 200 MHz.

13. Repeat step 12 with the antenna in a different polarization.

14. Connect the test equipment as shown in Figure 18 (AE-26151/5D). Monitor the radiated level using the electric field monitor and antennas indicated in 3.4.6 (AE-26151/5D).

15. Adjust the gain of the amplifier for 2 volts per meter field strength at 200 MHz. Monitor the level with the electric field monitor.

16. If susceptibility occurs, reduce the output power of the amplifier and determine the susceptibility threshold. Record all pertinent information on TDS 7.

17. Connect the log conical (or horn) antenna as shown on in Figure 18 and connect to the appropriate amplifier.

18. Adjust the gain of the amplifier to the level indicated to produce 2 volts per meter from 200 to 500 MHz (18 GHz for the METOP instrument) or use the calibration procedure of step 14.

Table V Additional Test Frequencies

Frequency (MHz)	METSAT		METOP	
	AMSU-A1 (V/M)	AMSU-A2 (V/M)	AMSU-A1 (V/M)	AMSU-A2 (V/M)
137.35/137.77		5.0		
137.1 *	-	-	37	32
137.5/137.62	6.9	9.0	-	-
468 *	-	-	12	18
1544.5 *	10.5	22.5	14	31
1698.0	9.8	22.5	-	-
1701.3 *	-	-	38	52
1702.5	4.8	8.2	-	-
1707.0	18.4	13.1	-	-
2230.0 *	-	-	10	10
2247.5	4.3	10.3	-	-
5250.0 *	-	-	38	45
7800.0 *	-	-	8	13
14 kHz/500 MHz *	1	1	1	1
500 MHz/1 GHz *	-	-	1	1
1/18 GHz *	-	-	2	2

* Requires modulation of the applied electric field as indicated below:

14 kHz to 18 GHz	Amplitude modulated by a sine wave at 1 kHz with a modulation depth of 50%.
137.1 MHz	Pulsed at 38.25 kHz PRF, 50% duty cycle.
468 MHz	Pulsed at 1 kHz PRF, 50% duty cycle.
1,544.5 MHz	FM, 400 kHz peak, deviation modulation index M = 1.
1,701.3 MHz	Pulsed 2.25 MHz PRF, 50% duty cycle.
2,2230 MHz	Pulsed 4 kHz PRF, 50% duty cycle.
5,250.0 MHz	Pulsed width = 8.22 ms, chirp rate = -50 kHz/ms, PRF = 4.94 and pulsed width = 10.32, chirp rate = ±24 kHz/ms, PRF = 4.94.
7,800.0 MHz	Pulsed 35 MHz PRF, 50% duty cycle.

19. If susceptibility occurs, reduce the output power of the power amplifier and determine the susceptibility threshold. Record all pertinent information on TDS 7.

20. Using the appropriate antenna, repeat susceptibility testing at the specific levels and frequencies indicated in Table V, throughout the frequency range of 500 MHz to 1 GHz.

21. Record the completion of the frequency band and appropriate information in the event of a susceptibility indication.

22. Continue the test with the same setup throughout the frequency range of 500 MHz to 1 GHz at a 2 volts/meter level. Use the following frequency bands:

    500 - 700 MHz 700 - 1000 MHz

23. Using the horn antenna and the TWT amplifiers, cover the frequency range of 1 to 18 GHz. Use frequency range steps that provide a reasonably flat response of the amplifier.

24. Using the appropriate antenna and amplifier, perform the special frequency test indicated in Table V.

25. Calibrate the applied field with the two antenna methods.

26. Supply the indicated frequency at the required level for 90 seconds. At the mid interval of the applied time, rotate the antenna to the other polarization.

27. Record the completion of the frequency test and all appropriate information in the event of a susceptibility indication.

28. Repeat steps 24 through 27 for the other discrete frequencies.

2.8.5 Test comment

This test was conducted in accordance to the above test plan, with one exception. The special frequency 7.8 GHz was modulated with a pulsed 15 MHz PRF, 50% duty cycle, instead of the 35 MHz pulse required.

2.8.6 Test results

The AMSU-A1 instrument meets the electric field radiated susceptibility requirements of test method RS03 and the special frequencies, without exception. No malfunction and/or degradation of performance was noted during performance of this test. The special frequency of 7.8 GHz was modulated with a 15 MHz pulse, which was the maximum frequency obtained by the test instrumentation. This is a frequency that if induced into the sensitive channel, could provide a response. Since none was noted, the applied level did not cause susceptibility. See Test Data Sheet 7 in Section 3.

SECTION 3

SUPPLEMENTARY INFORMATION

3. SUPPLEMENTARY INFORMATION

This section contains Test Data Sheets, Plots, factors, and calculations.

AE-26151/5D
22 Sep 98

TEST DATA SHEET 1 (Sheet 1 of 4)
3.4.5: CE01/CE03 Test

Test Setup Verified: Kevin Thomas
Signature

3.4.5.3.1 Step 1: Test Equipment Log

Item	Manufacturer	Model/ Part No.	Aerojet Inventory No.	Calibration Date	Calibration Due Date
SYSTEM ANALYZER	H-P	3563A	53898	5/12/97	4/12/99
PLOTTER	H-P	7475A	47417	CNR	CNR
CURRENT PROBE	AILTECH	91550-2B	L-509571	4/23/97	10/23/99
LISN	NASA	N/A	N/A	N/A	N/A
25 PIN BREAKOUT BOX	AEROJET	SK1359704-2	7443-5910 02 C/N 005	N/A	N/A

3.4.5.3.2: Emission Measurements, 30 Hz to 20 kHz. (DM)

Step	Power Line	Band	Required	Emissions within limits? Yes	Emissions within limits? No	Comments/ Observations
4	+28V Main Bus	Narrow	See Figures 2 & 3	✓		Plot # 1
4	28V Main Bus Rtn	Narrow	See Figures 2 & 3	✓		2
7	+28V Telemetry Bus	Narrow	See Figures 2 & 3	✓		3
7	28V Telemetry Bus Rtn	Narrow	See Figures 2 & 3	✓		4
7	+28V PLB	Narrow	See Figures 2 & 3	✓		5
7	28V PLB Rtn	Narrow	See Figures 2 & 3	✓		6
7	+10V Interface Bus	Narrow	See Figures 2 & 3	✓		7
7	10V Interface Bus Ret	Narrow	See Figures 2 & 3	✓		8
7	Safety Heater	Narrow	See Figure 4	✓		9
7	Safety Heater Return	Narrow	See Figure 4	✓		10

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test logs, additional comments or observations, etc.) to this data sheet.

Signature/Date

Unit AMSU-A1/METSAT

Engineer: William H. Parker / 15 DEC 1998

Serial No. 105

Quality Control: (QA 258) 12/15/98

Shop Order 653932 Oper 0280000

Customer Representative: 12-16-98

TEST DATA SHEET 1 (Sheet 2 of 4)
3.4.5: CE01/CE03 Test

Test Setup Verified: Ken Stone (S SEIT) 12-15-98
Signature

3.4.5.3.2: Emission Measurements, 30 Hz to 20 kHz, (CM)

Step	Power Line	Band	Required	Emissions within limits? Yes	Emissions within limits? No	Comments Observations
4	+28V Main Bus	Narrow	See Figure 2	✓		Plot # 11
7	+28V Telemetry Bus	Narrow	See Figure 2	✓		12
7	+28V PLB	Narrow	See Figure 2	✓		13
7	+10V Interface Bus	Narrow	See Figure 2	✓		14

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test logs, additional comments or observations, etc.) to this data sheet.

Signature/Date

Unit AMSU-A1/METSAT
Serial No. 105
Shop Order 653932 Oper 280

Engineer: William G. Parker/15 DEC 1998
Quality Control: (TA 25) 12/15/98
Customer Representative: 12-16-98

AE-26151/5D
22 Sep 98

TEST DATA SHEET 1 (Sheet 3 of 4)
3.4.5: CE01/CE03 Test

Test Setup Verified: Ken Stern (6 DEC) 12-15-98
Signature

3.4.5.3.1 Step 1: Test Equipment Log

Item	Manufacturer	Model/ Part No.	Aerojet Inventory No.	Calibration Date	Calibration Due Date
SPECTRUM ANALYZER	H-P	8566B	R300680	8/13/98	8/13/99
PLOTTER	H-P	7475A	47417	CNR	CNR
AMPLIFIER	H-P	W/OPT H64 8447F	L200230	1/14/98	1/14/99
CURRENT PROBE	AILTECH	91550-2R	L509571	4/23/97	10/23/99
25 PIN BREAKOUT BOX	AEROJET	SK 1358704-2	743-5??C 02 C/N CC2	N/A	N/A

3.4.5.3.2: Emission Measurements, 20 kHz to 50 MHz. (DM)

Step	Power Line	Band	Required	Emissions within limits? Yes	Emissions within limits? No	Comments/ Observations
4	+28V Main Bus	Narrow	See Figures 2 & 3	✓		PLOT # 15
4	28V Main Bus Rtn	Narrow	See Figures 2 & 3	✓		16
7	+28V Telemetry Bus	Narrow	See Figures 2 & 3	✓		17
7	28V Telemetry Bus Rtn	Narrow	See Figures 2 & 3	✓		18
7	+28V PLB	Narrow	See Figures 2 & 3	✓		19
7	28V PLB Rtn	Narrow	See Figures 2 & 3	✓		20
7	+10V Interface Bus	Narrow	See Figures 2 & 3	✓		21
7	10V Interface Bus Ret	Narrow	See Figures 2 & 3	✓		22
7	Safety Heater	Narrow	See Figure 4	✓		23
7	Safety Heater Return	Narrow	See Figure 4	✓		24

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test logs, additional comments or observations, etc.) to this data sheet.

Signature/Date

Unit AMSU-A1/METSAT

Engineer: C. William E. Fowler 15 DEC 1998

Serial No. 105

Quality Control: 12/15/98

nop Order 653932 Oper 280

Customer Representative: 12-16-98

TEST DATA SHEET 1 (Sheet 4 of 4)
3.4.5: CE01/CE03 Test

Test Setup Verified: _____ (AMSU 6 BCIT) 12-15-98
Signature

3.4.5.3.1 Step 1: Test Equipment Log

Item	Manufacturer	Model/ Part No.	Aerojet Inventory No.	Calibration Date	Calibration Due Date
25 PIN BREAKOUT BOX	AEROJET	SK1358704-2	743-591C C2 C/N 002	N/A	N/A
RF CURRENT PROBE	AILTECH	91550-23	L-509571 SIN 774	4/23/97	10/23/98
LISN	(ESTEC-EMC TEST FACILITY) NASA	N/A	N/A	N/A	N/A
SPECTRUM ANALYZER	H-P	8566B	R3006806	8/12/98	5/3 NCR
AMPLIFIER	H-P	8447F W/OPT H64	L 2001 230	1/10/98	1/1[illegible]
PLOTTER	H-P	7475A	47417	CNR	CNR

3.4.5.3.2: Emission Measurements, 20 kHz to 50 MHz, (CM)

Step	Power Line	Band	Required	Emissions within limits? Yes	No	Comments/ Observations
4	+28V Main Bus	Narrow	See Figure 2-3	(AMSU 6 BCIT) ✓		PLOT # 25
7	+28V Telemetry Bus	Narrow	See Figure 2-3	(AMSU 5 BCIT) ✓		26
7	+28V PLB	Narrow	See Figure 2-3	(AMSU 5 BCIT) ✓		27
7	+10V Interface Bus	Narrow	See Figure 2-3	(AMSU 5 BCIT) ✓		28

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test logs, additional comments or observations, etc.) to this data sheet.

Signature/Date

Unit AMSU-A1/METSAT

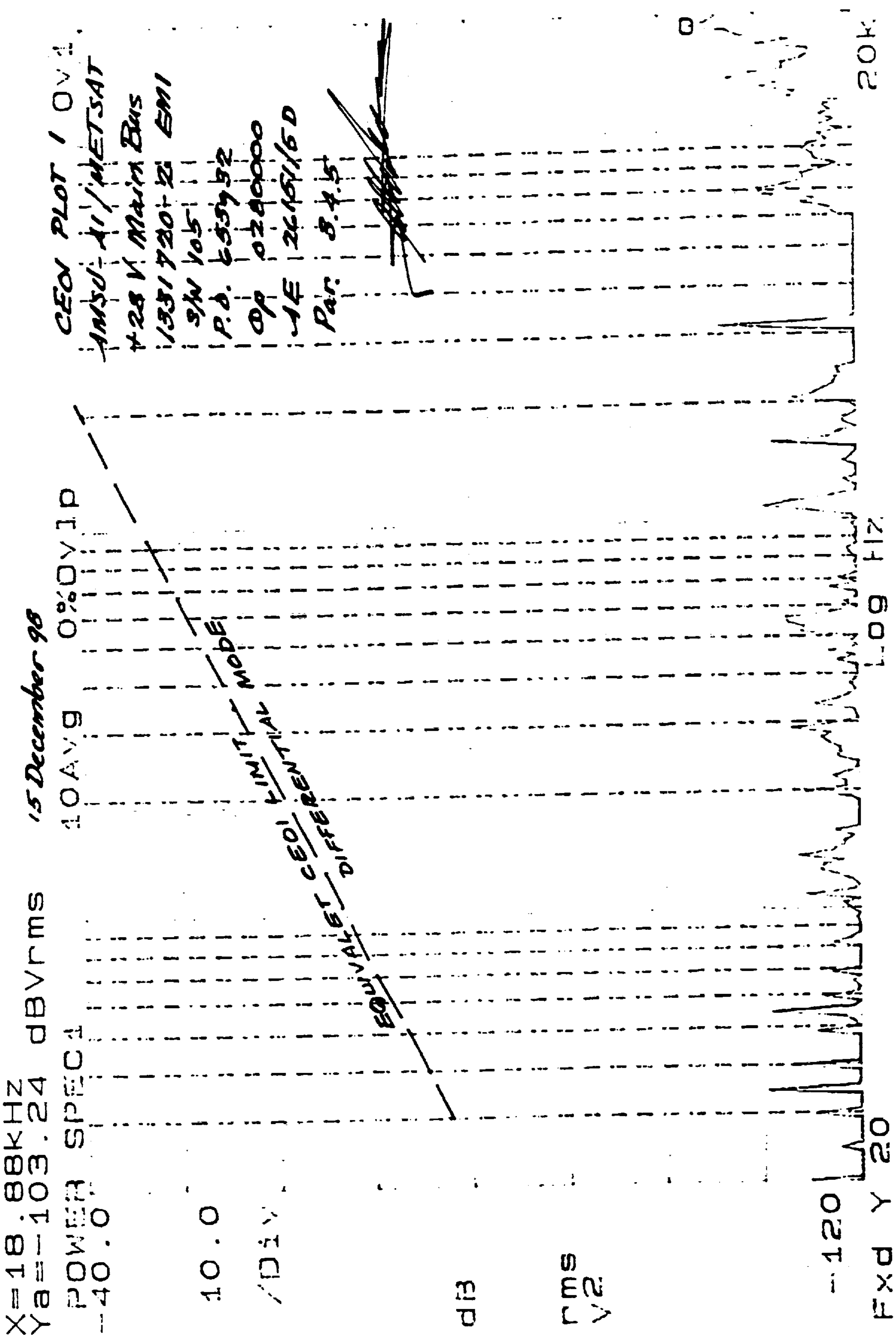
Engineer: William H. Parker /15DEC.1998

Serial No. 105

Quality Control: (7A 259) 12/15/98

Shop Order 653932 Oper 280

Customer Representative: (Boeing) 12-16-98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Ya=-103.24 dBVrms
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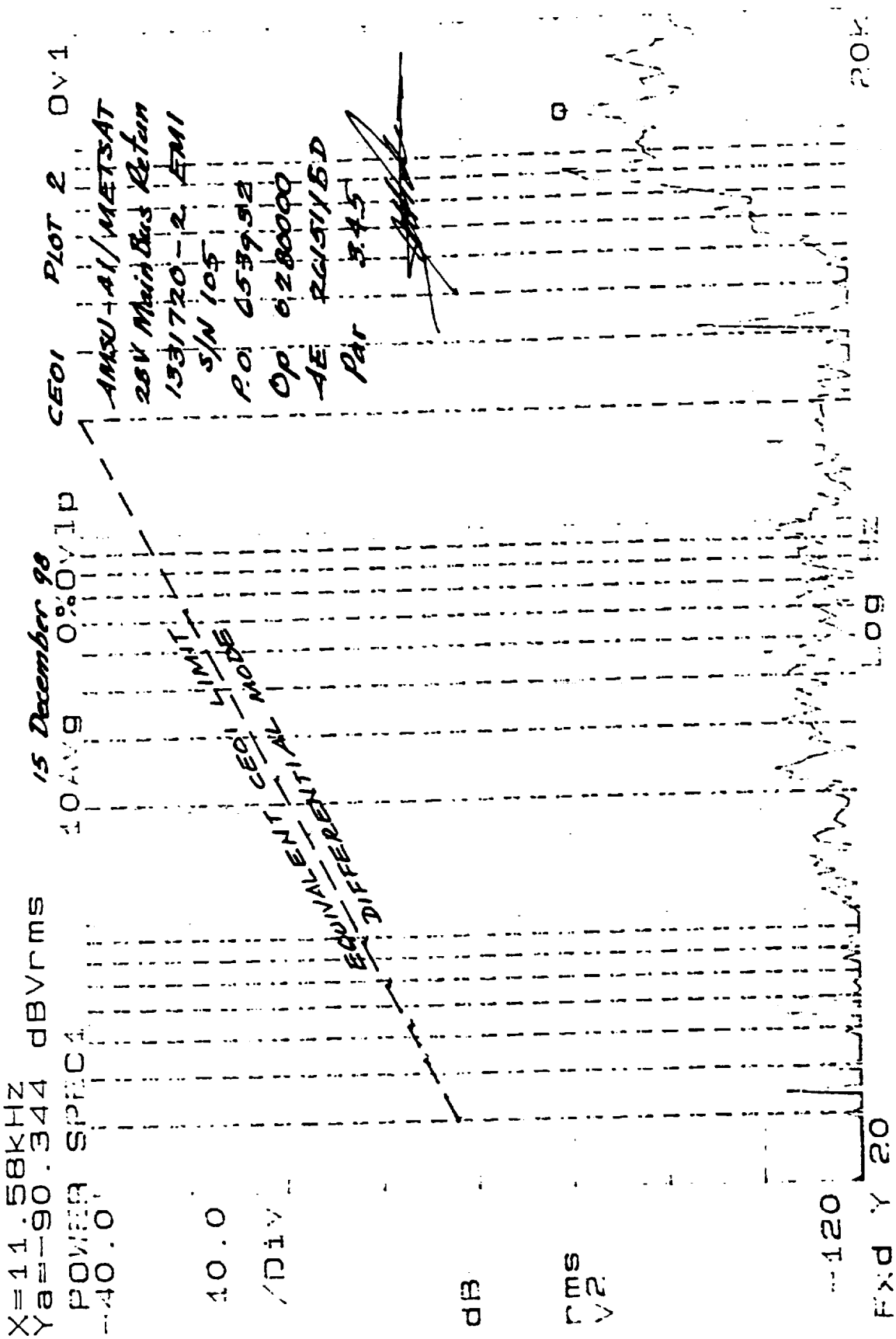
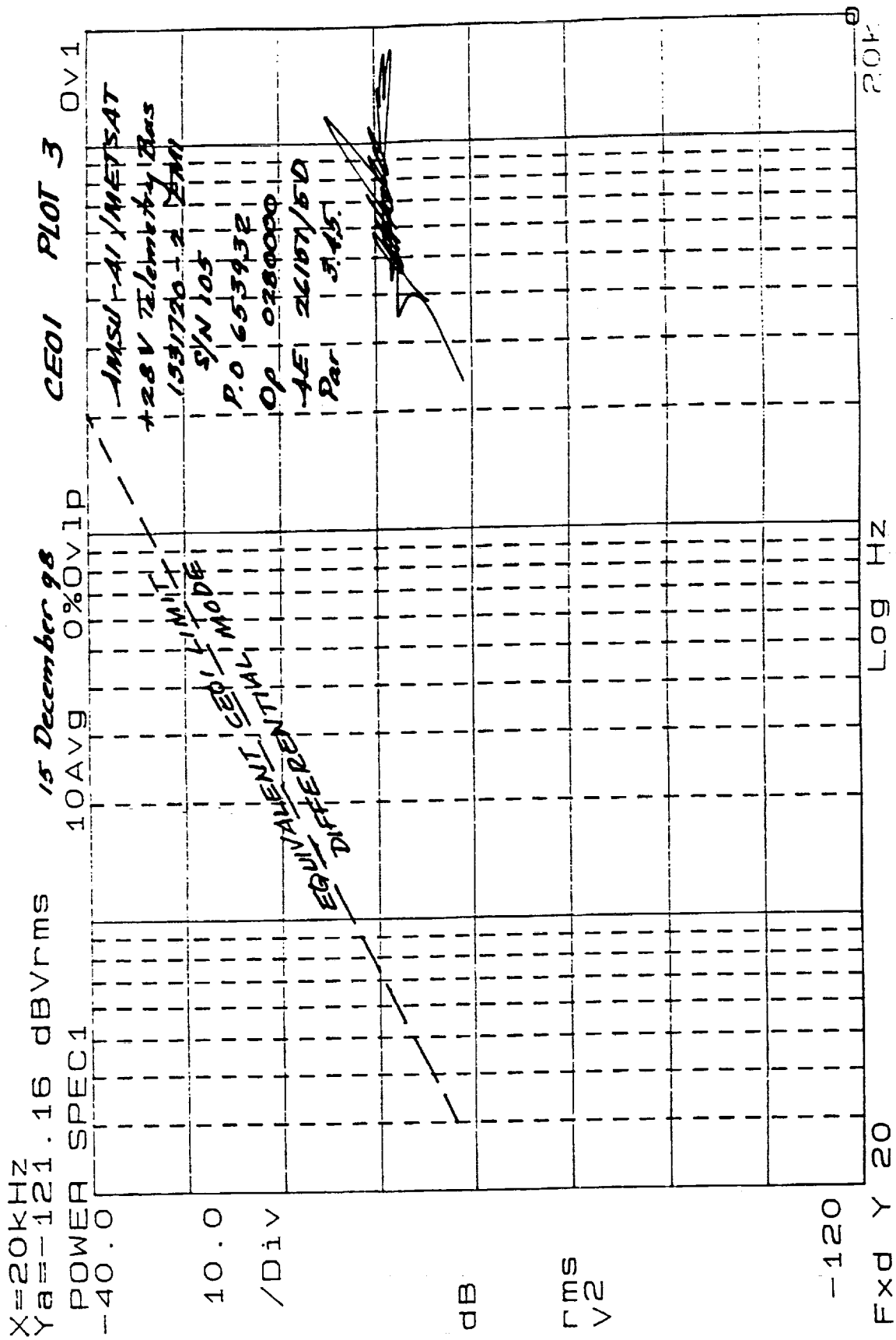
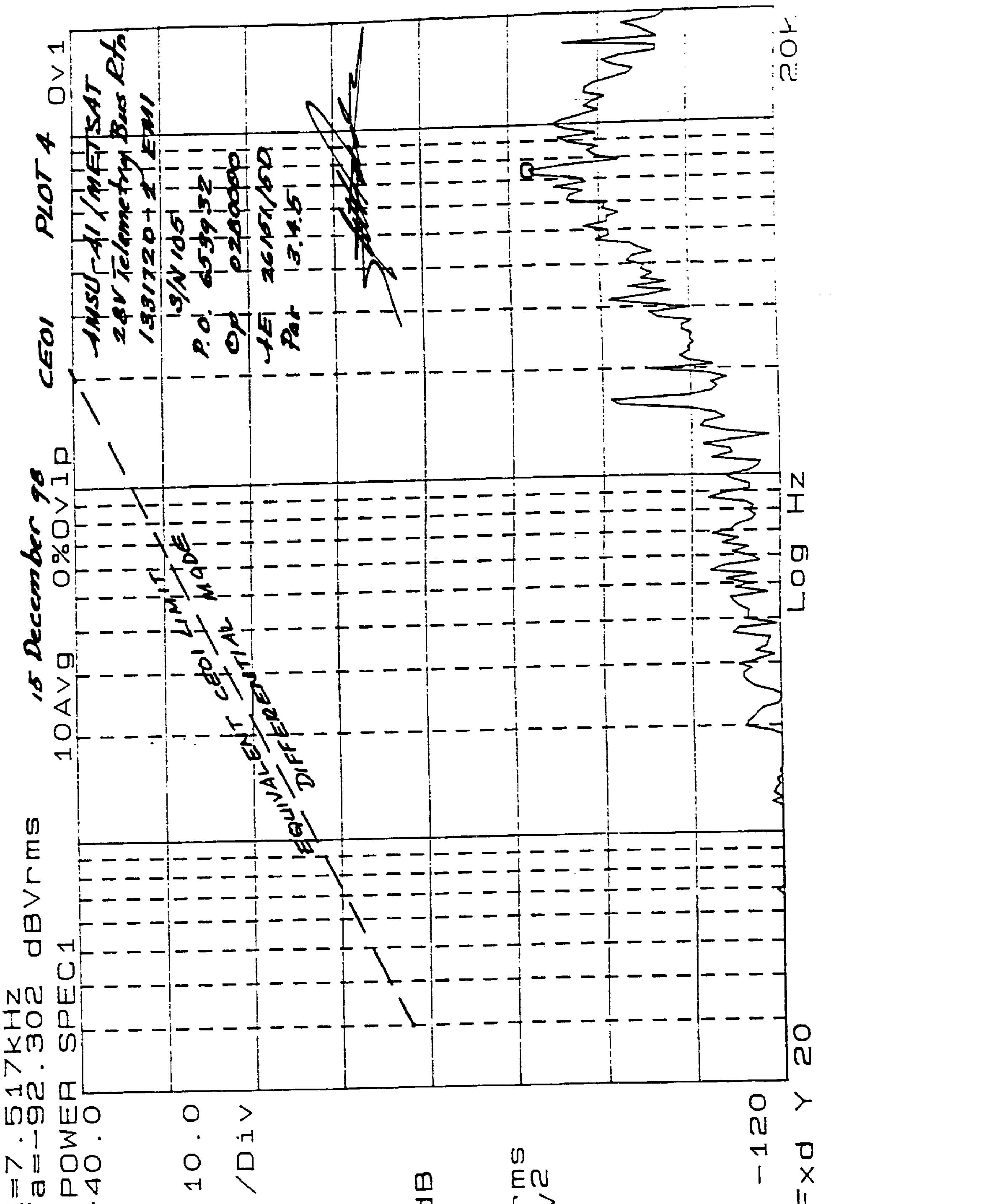
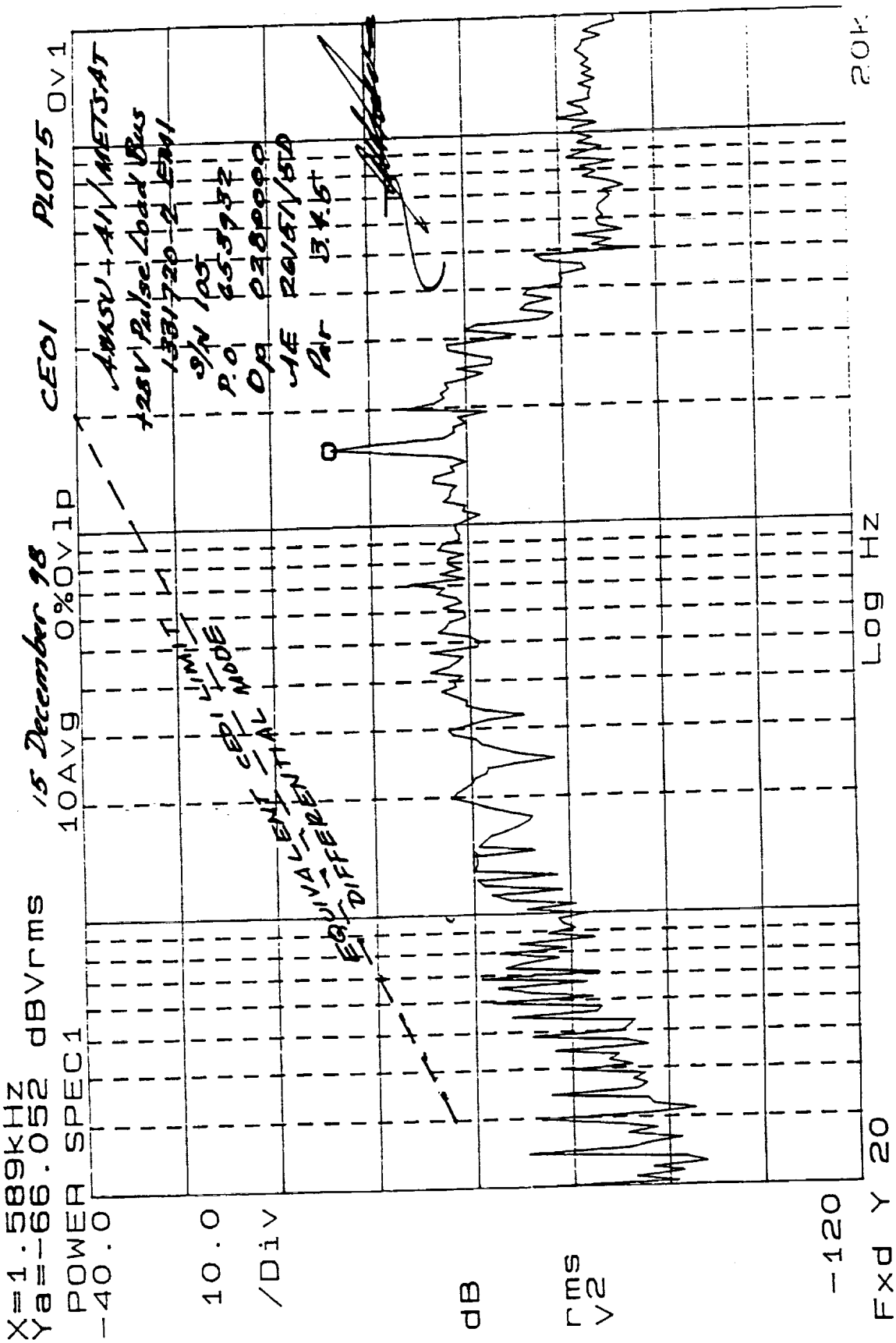
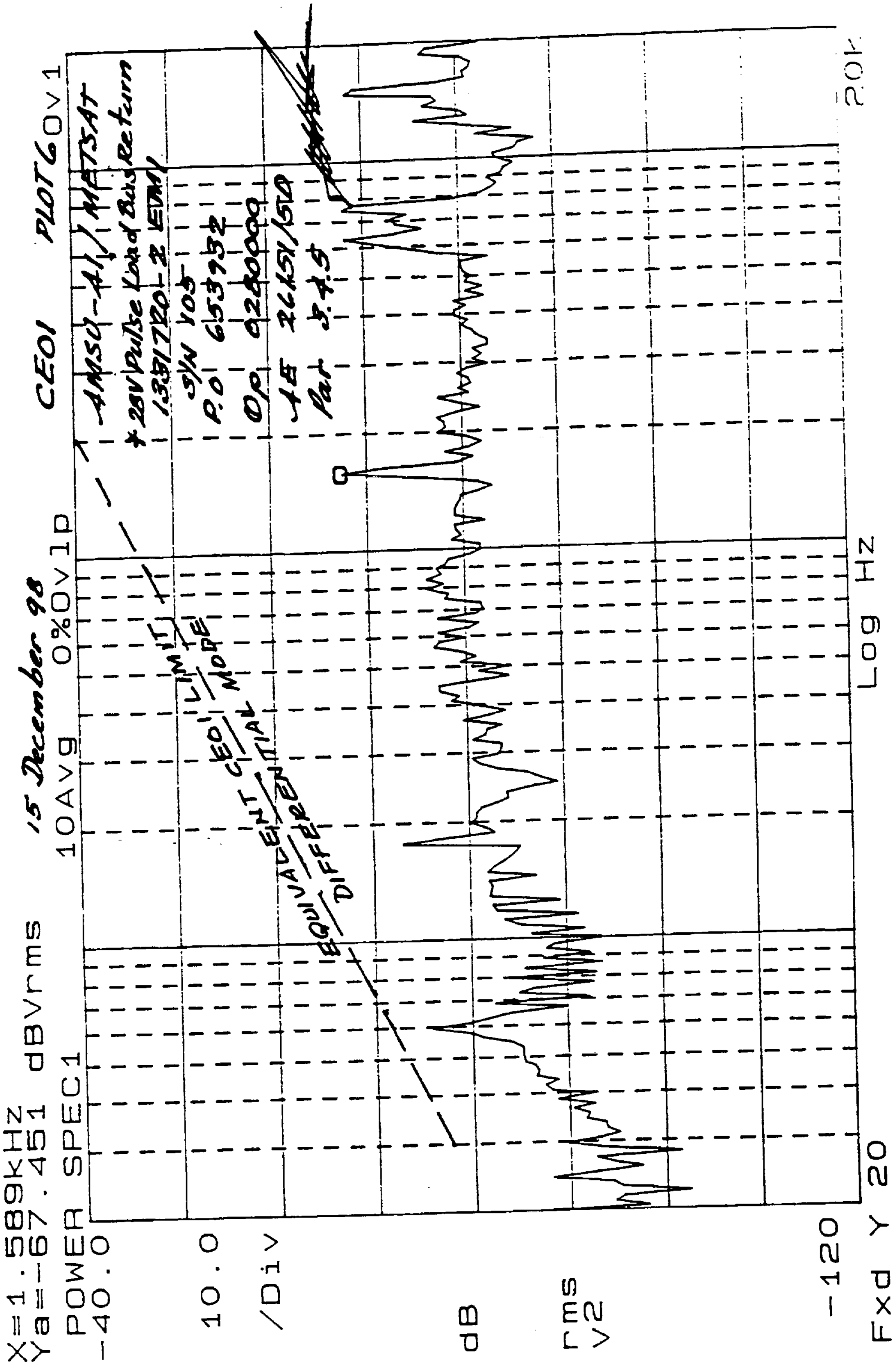
10Avg
0%Ov1P
-40.0
10.0
/DIV
dB
rms
V2
-120
Fxd Y 20
Log Hz
20k
15 December 98
CE01 PLOT 1 Ov1
AMSU-A1/METSAT
+28 V Main Bus
1331720-2 EMI
S/N 105
P.D. 655932
OP 0280000
AE 26151/6D
Par. 8.4.5
EQUIVALENT CE01 LIMIT
DIFFERENTIAL MODE

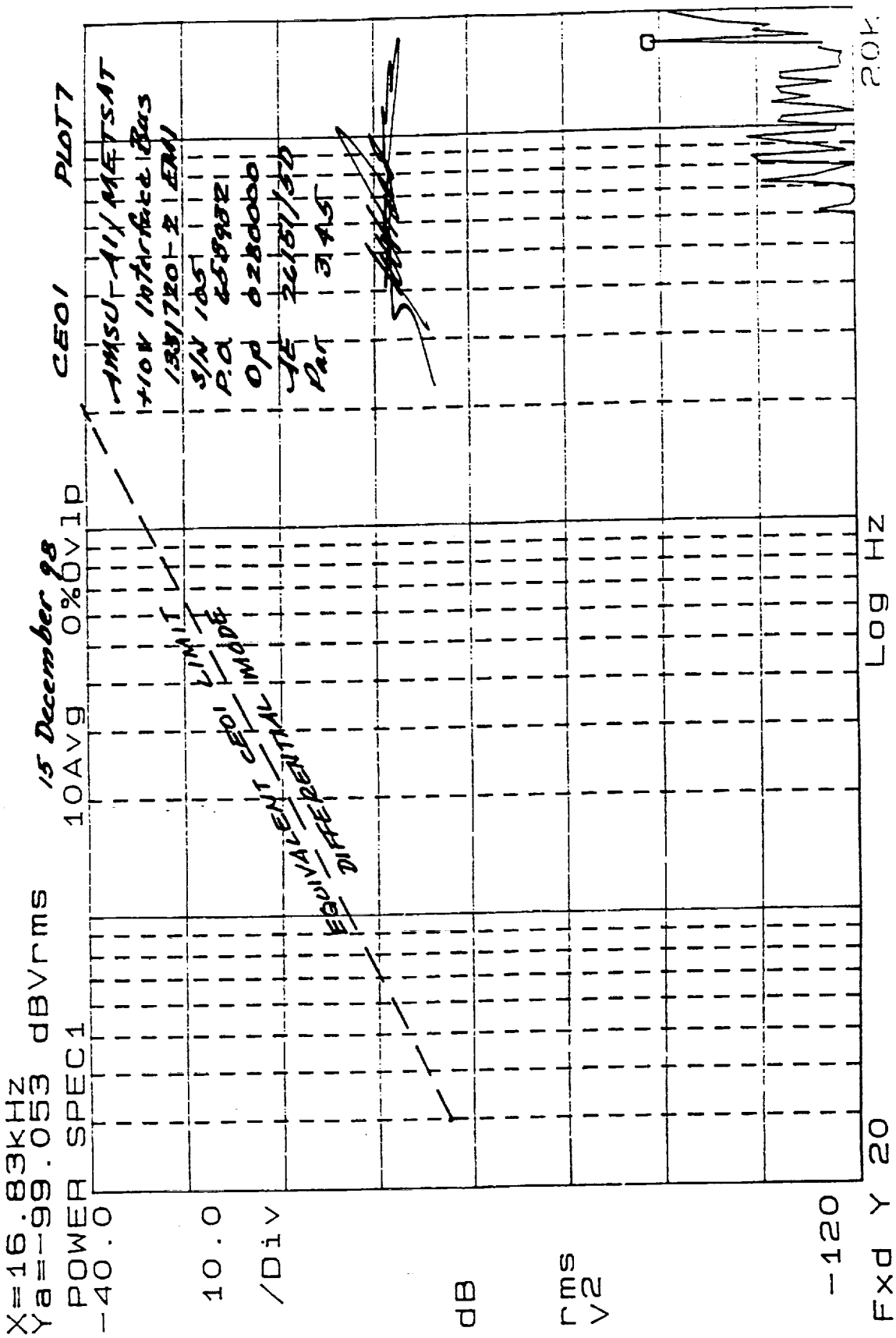

15 December 98
CE01 PLOT 2
1 AMSU+AI/METSAT
28V Main Bus Return
133/720-2 EMI
S/N 105
P.O. 453943
Op. 0280000
AE RQSTD
Par
EQUIVALENT DIFFERENTIAL
CE01 MODE
LIMIT
X=11.58kHz
Ya=-90.344 dBVrms
POWER SPEC
-40.0
10.0
/Div
dB
rms
-120
Fxd Y 20
20k
100

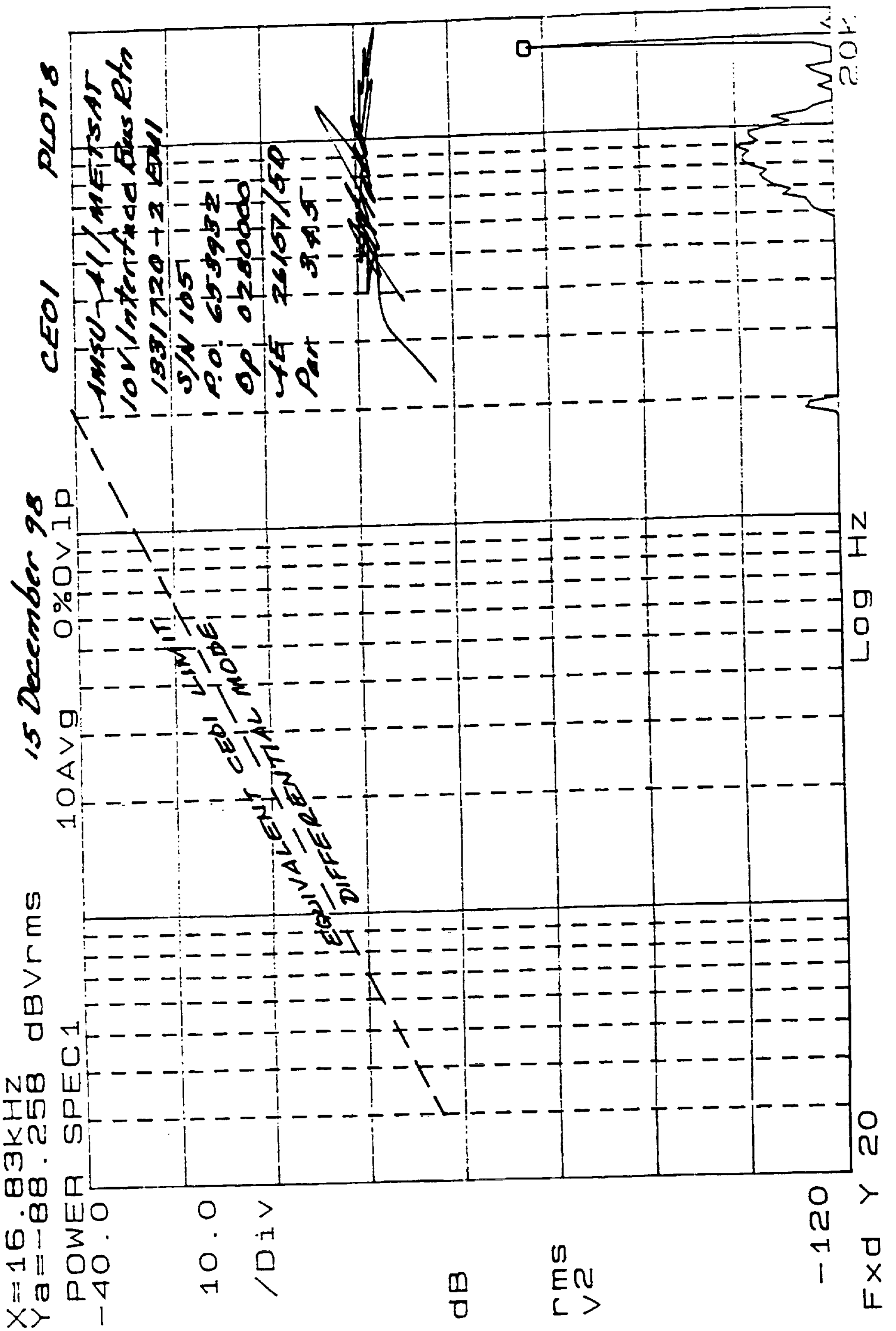

X=20kHz
Ya=-121.16 dBVrms
POWER SPEC1
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
Log Hz
20k
0
0%Ov1p
10Avg
Ov1
15 December 98
CE01 PLOT 3
EQUIVALENT DIFFERENTIAL
EQUIVALENT CE01 4 WIRE MODE

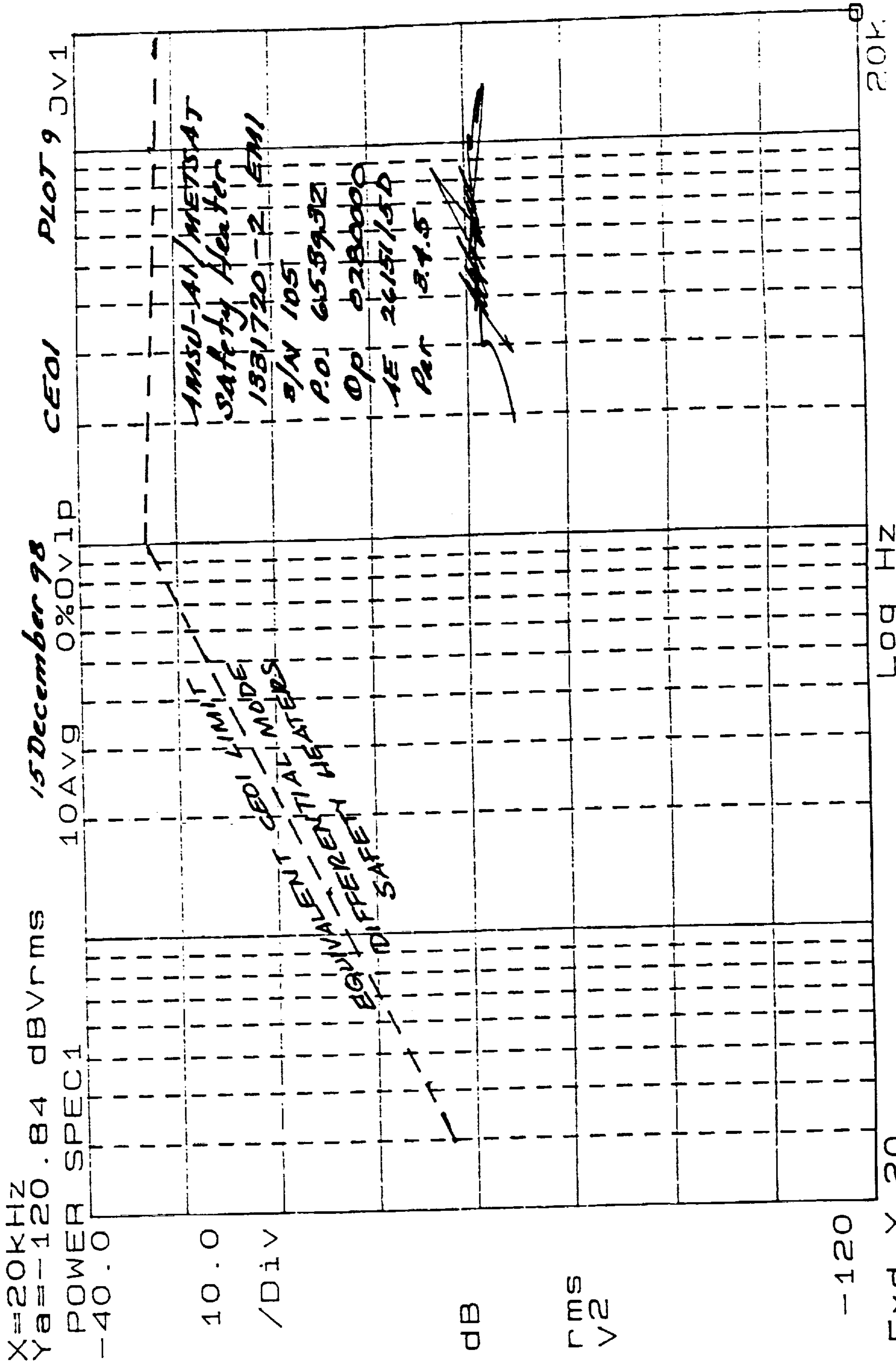

X=7.517kHz
Ya=-92.302 dBVrms
POWER SPEC1
10Avg 0%Ov1p Ov1
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20 Log Hz 20k
CE01 PLOT 4
15 December 98
EQUIVALENT CE01 LIMIT
DIFFERENTIAL MODE

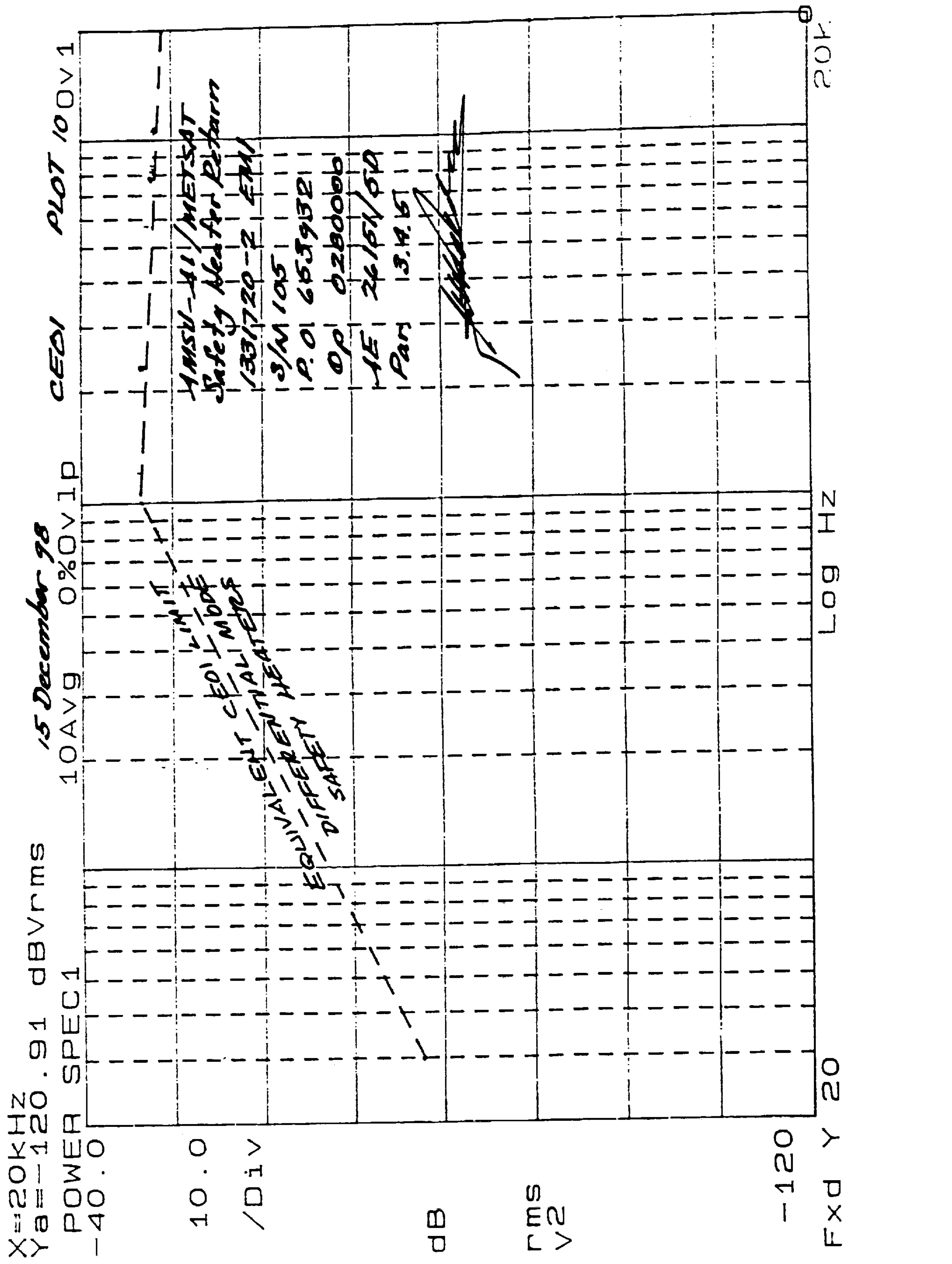

X=1.589kHz
Ya=-66.052 dBVrms
POWER SPEC1
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
Log Hz
20k
10Avg
0%Ovlp
15 December 98
CE01
PLOTS
Ov1
EQUIVALENT DIFFERENTIAL
CEP MODE
LIMIT

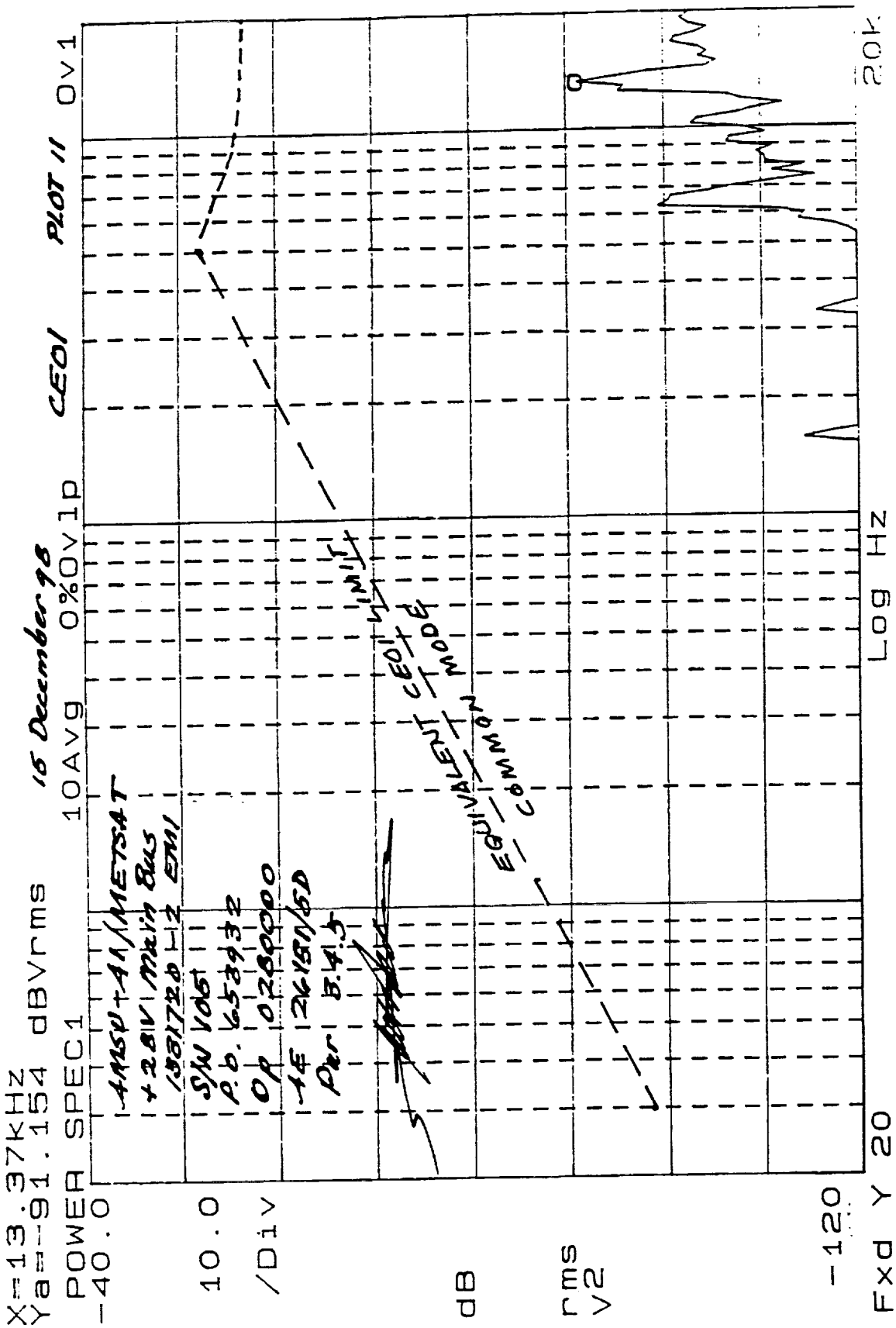

X=1.589kHz
Ya=-67.451 dBVrms
POWER SPEC1
10Avg 0%Ov1p
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
Log Hz
CE01
PLOT 6
15 December 98
EQUIVALENT CE01 LIMIT
DIFFERENTIAL MODE

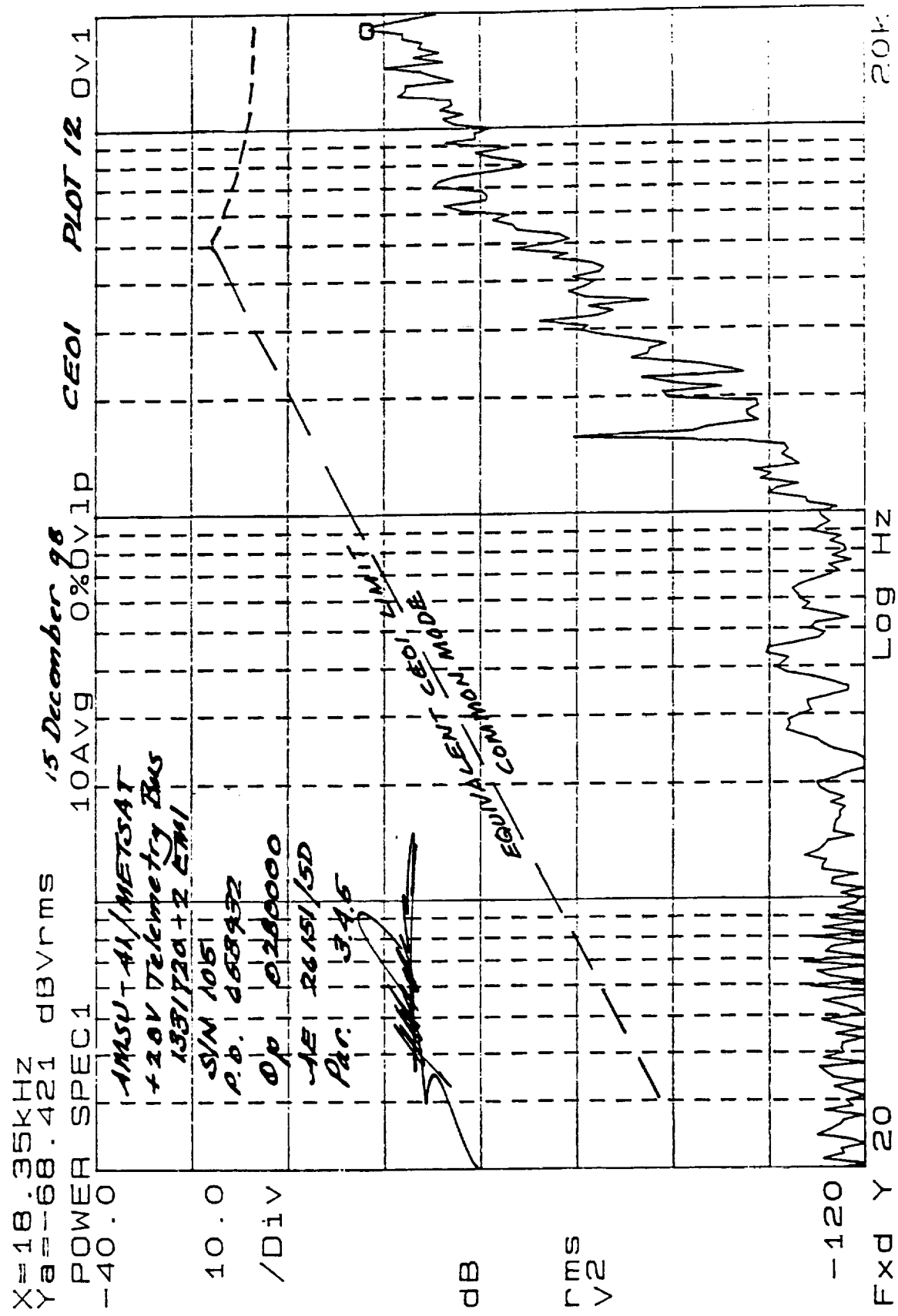

X=16.83kHz
Ya=-99.053 dBVrms
POWER SPEC1
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
Log Hz
20k
10Avg
0%OVlp
15 December 98
CE01
PLOT7
EQUIVALENT CE01 LIMIT
EQUIVALENT DIFFERENTIAL

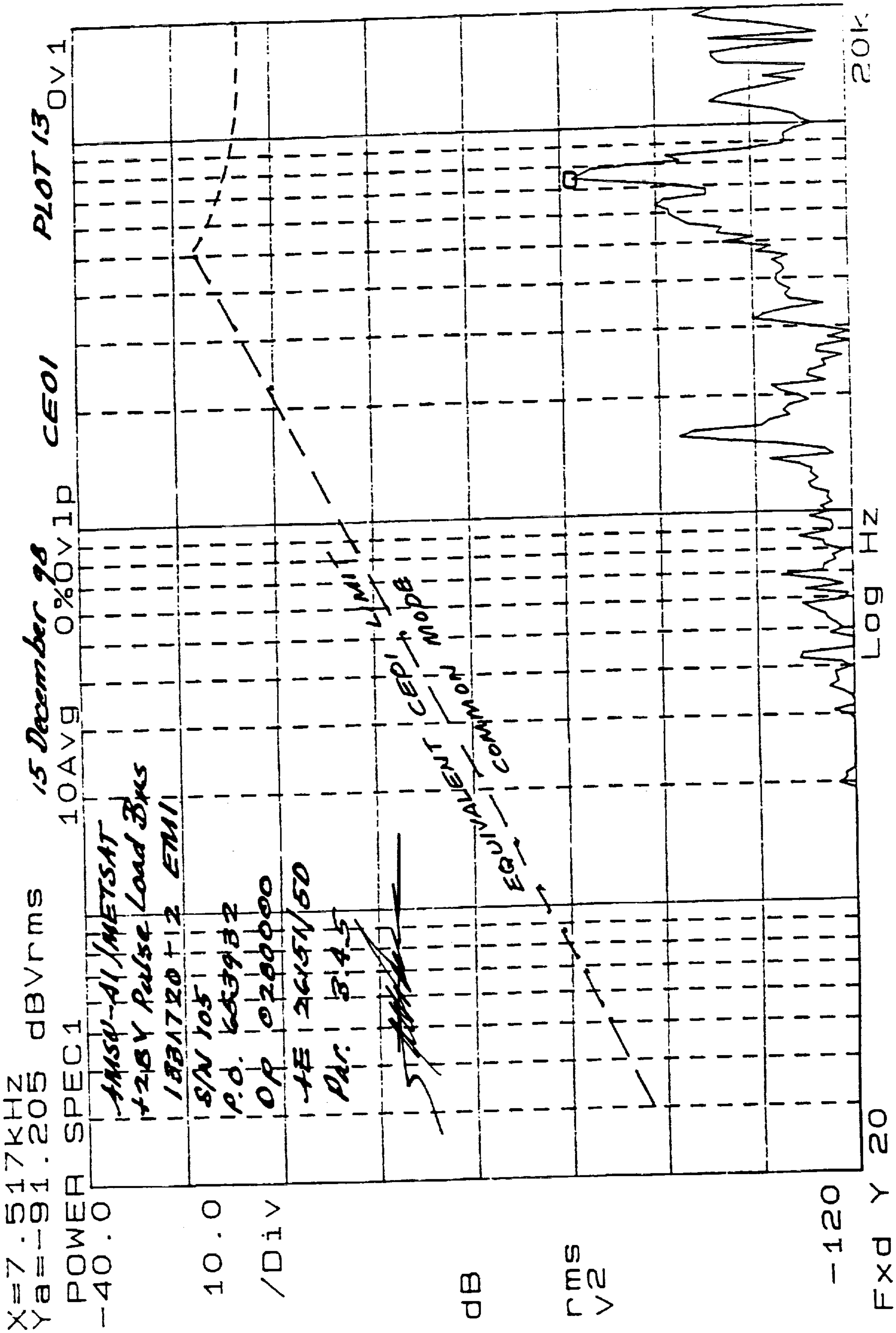

X=16.83kHz
Ya=-88.258 dBVrms
POWER SPEC1
10Avg
0%Ov1p
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
Log Hz
20k
15 December 98
CE01
PLOT 8
S/N 105
CE01 LIMIT
EQUIVALENT DIFFERENTIAL MODE

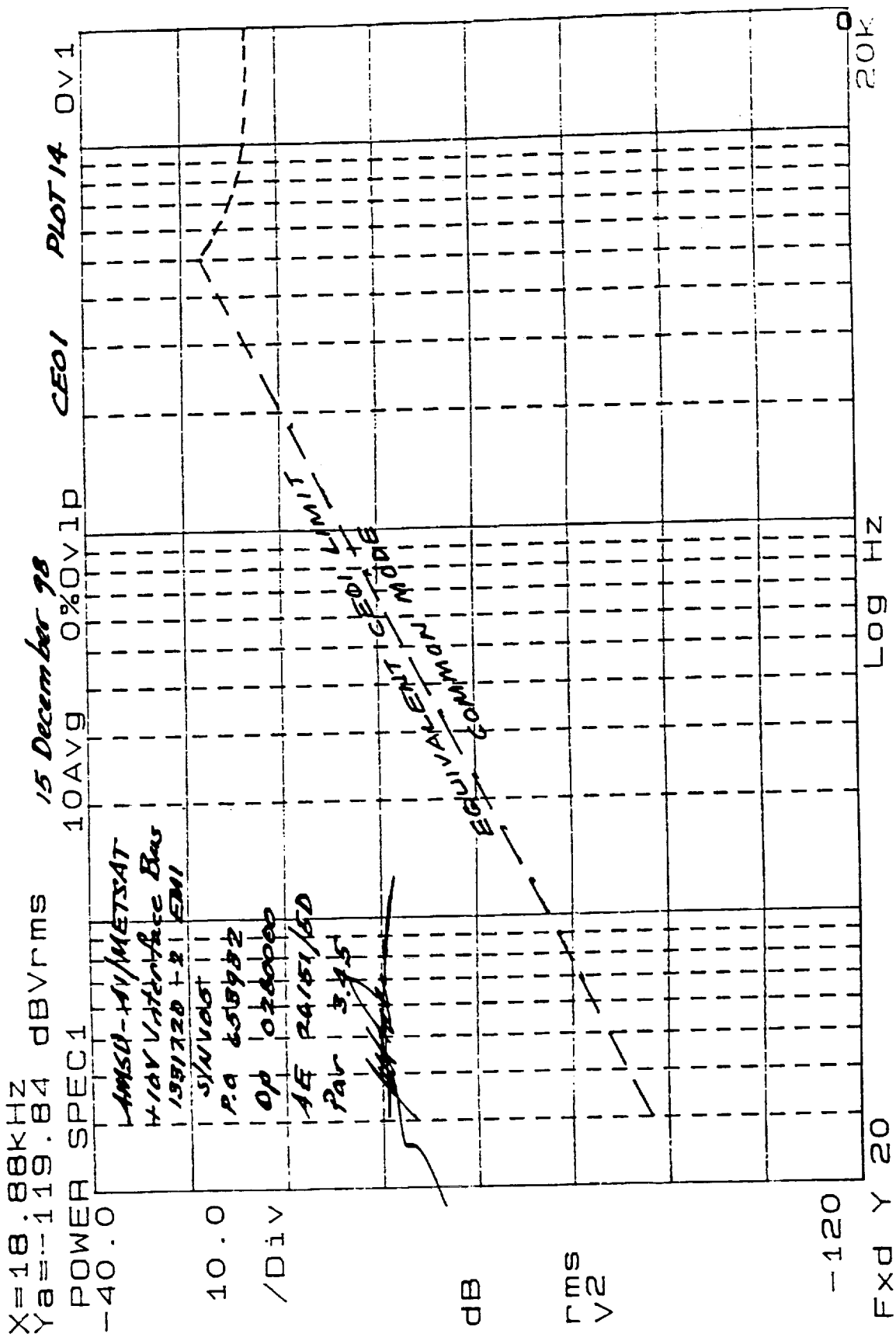

X=20kHz
Ya=-120.84 dBVrms
POWER SPEC1
10Avg
0%Ov1p
Ov1
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
Log Hz
20k
PLOT 9
CE01
15 December 98
AMSU-A1/METSAT
Safety Heater
1331720-2 EMI
S/N 105
CE01 LIMIT
EQUIVALENT DIFFERENTIAL MODE
SAFETY HEATERS

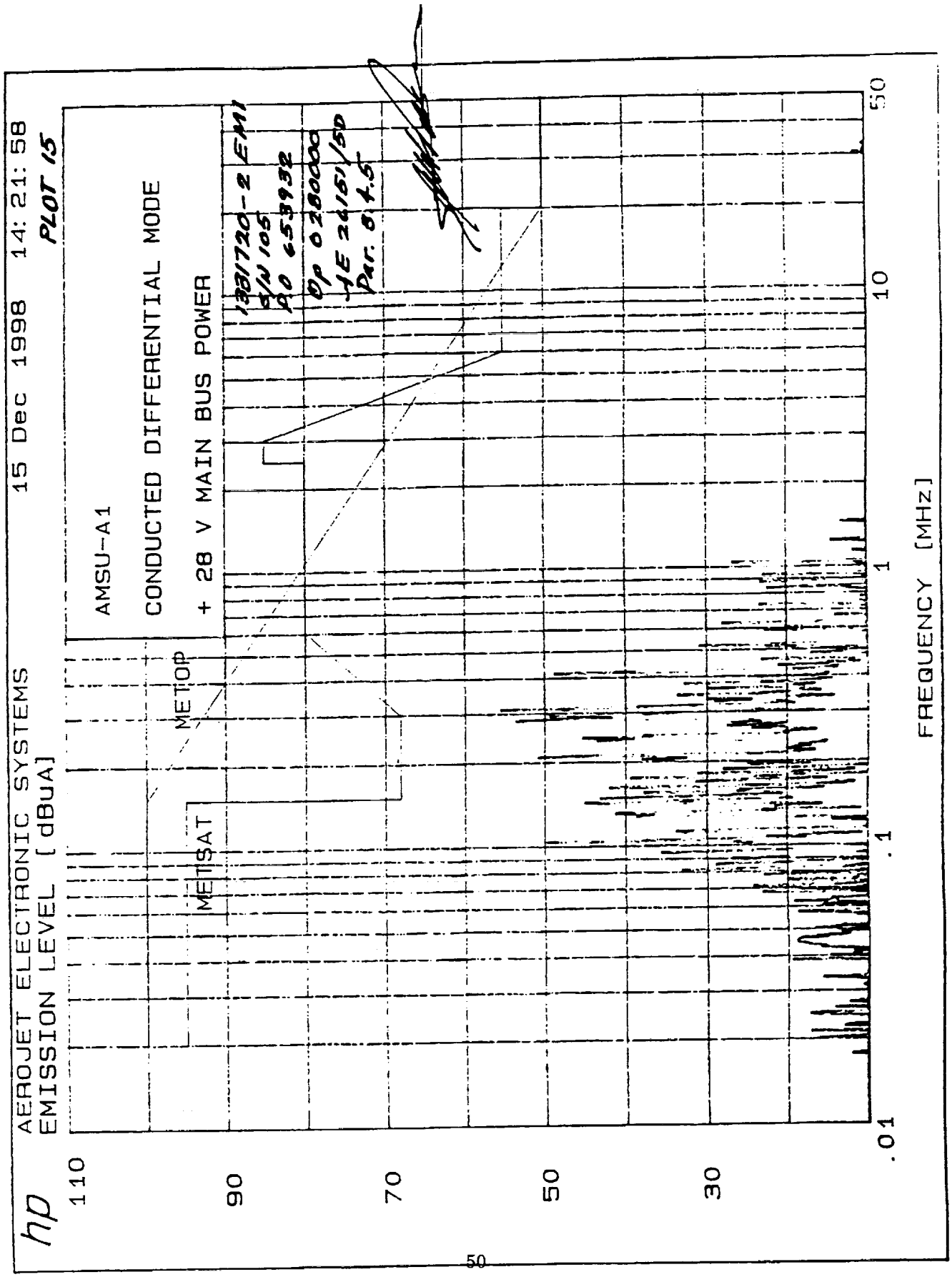

X=20kHz
Ya=-120.91 dBVrms
POWER SPEC1 10Avg 0%Ov1p
CE01 PLOT 10
15 December 98
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
Log Hz
20k

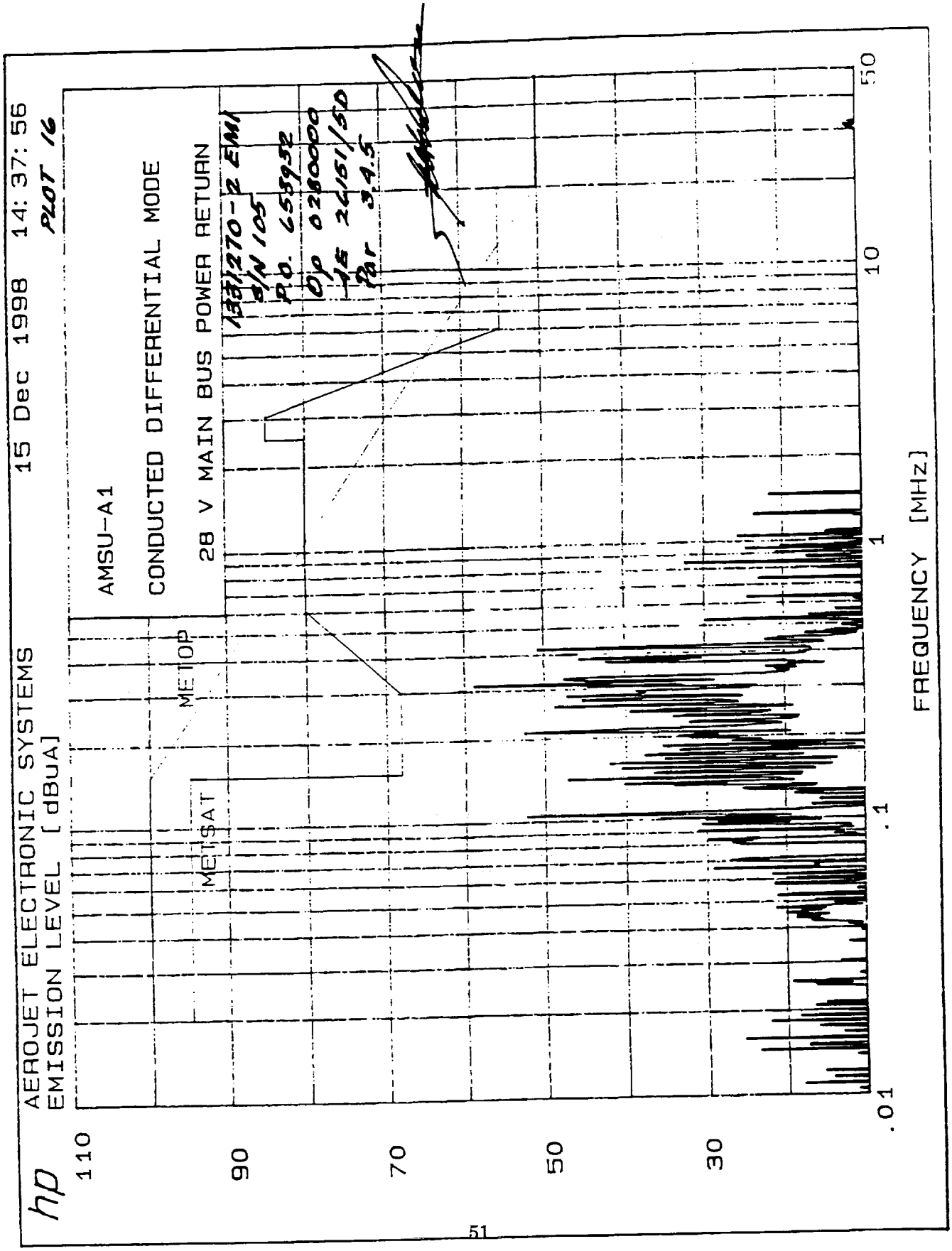

X=13.37kHz
Ya=-91.154 dBVrms
POWER SPEC1
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
10Avg
0%Ovlp
15 December 98
CE01
PLOT 11
Ov1
20k
Log Hz
EQUIVALENT CE01 MODE
COMMON

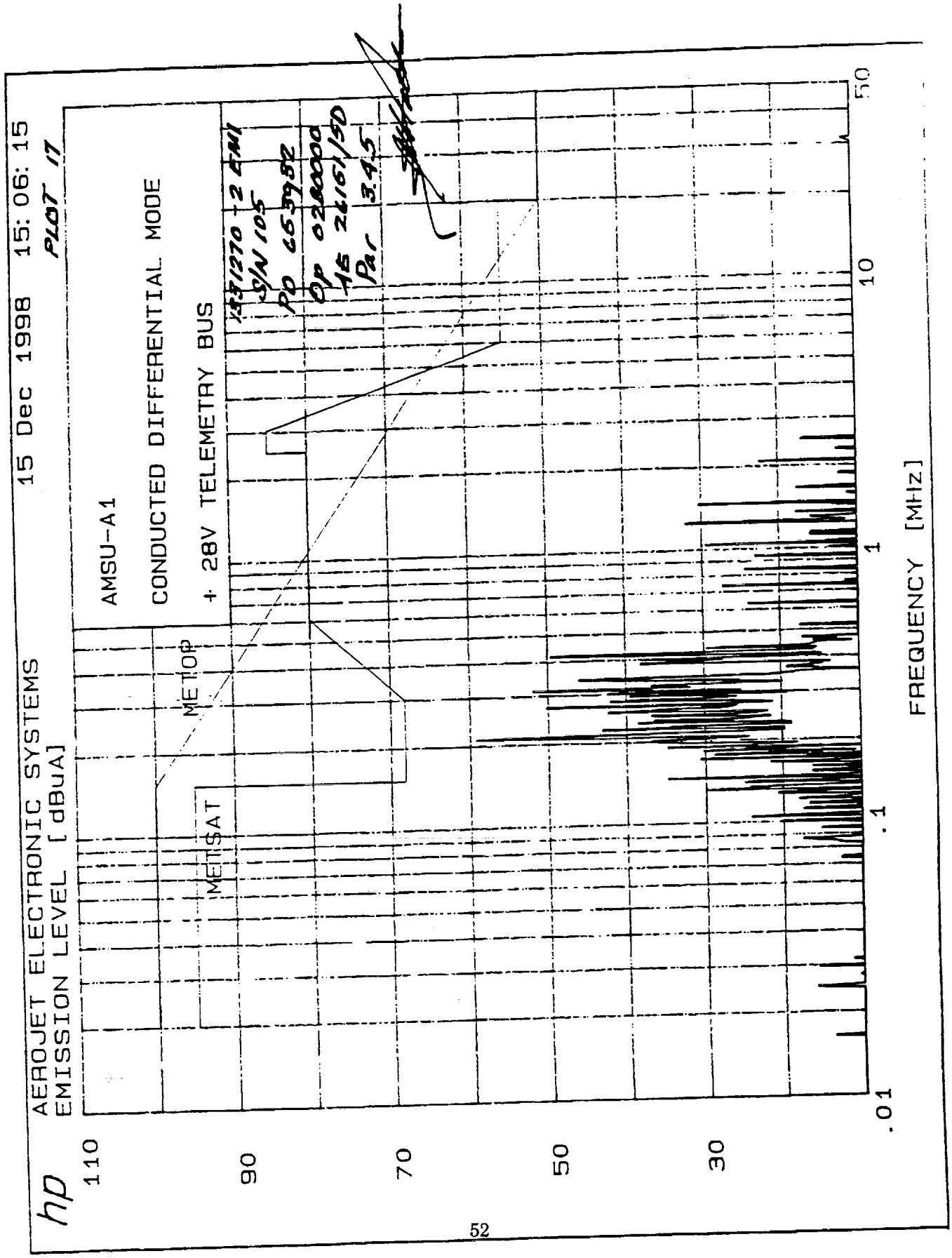

X=18.35kHz
Ya=-68.421 dBVrms
POWER SPEC1
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
10Avg
0%
Log Hz
20k
15 December 98
CE01
PLOT 12
INMSU+41/METSAT
+28V Telemetry Bus
1531/720+2 EMI
S/N 1051
P.O. 4568932
Op 0249000
AE 2615/SD
Par: 3.4.6
EQUIVALENT CE01 MODE
COMMON MONITOR
LIMIT

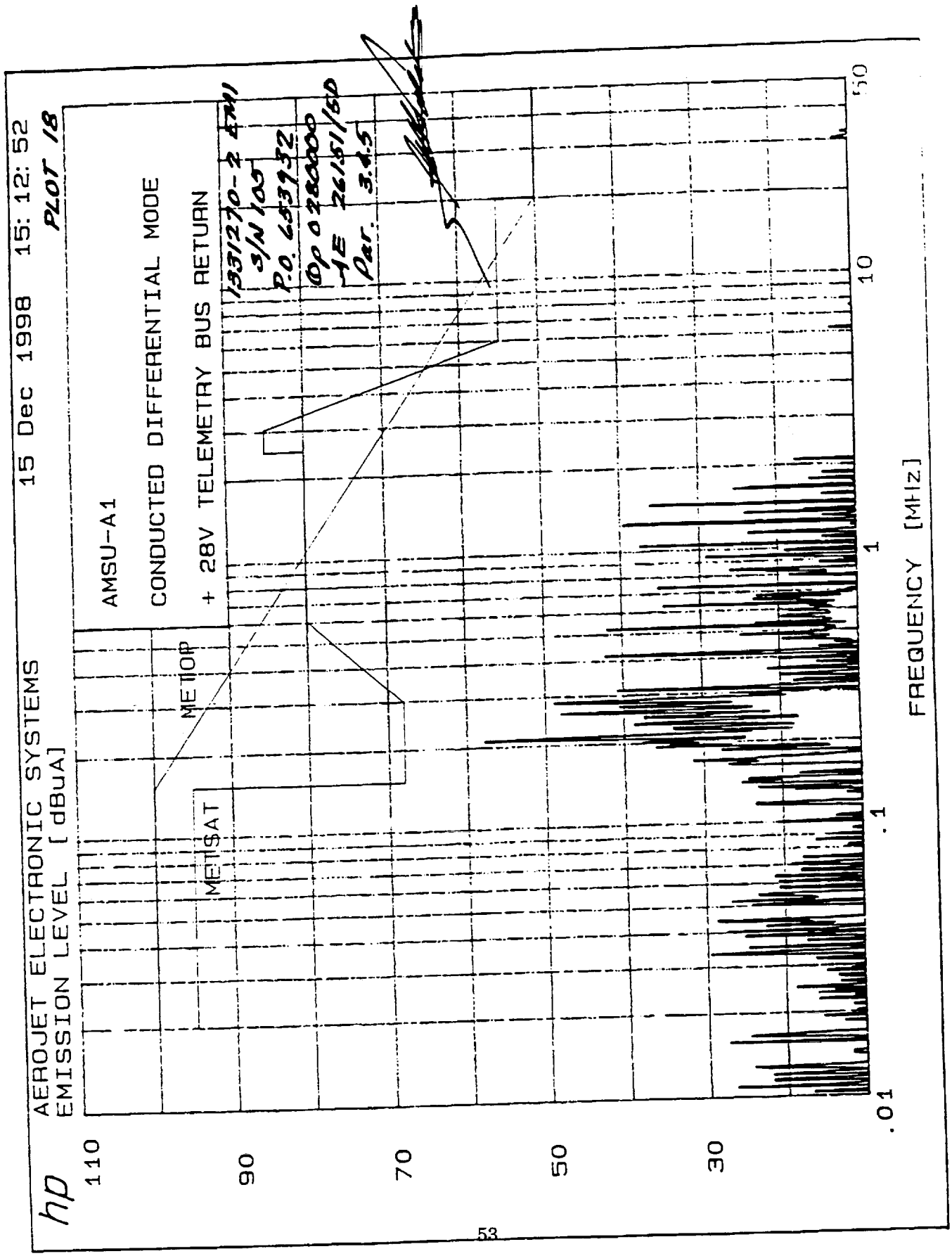

PLOT 13
CE01
15 December 98
X=7.517kHz
Ya=-91.205 dBVrms
POWER SPEC1
10Avg 0%Ov1p
Ov1
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
Log Hz
20k
AMSU-A1/METSAT
+28V Pulse Load Bus
1331720-2 EMI
S/N 105
P.O. 653982
OP 0280000
TE 26151/SD
Par. 3.4.5
EQUIVALENT CEP1 LIMIT
COMMON MODE

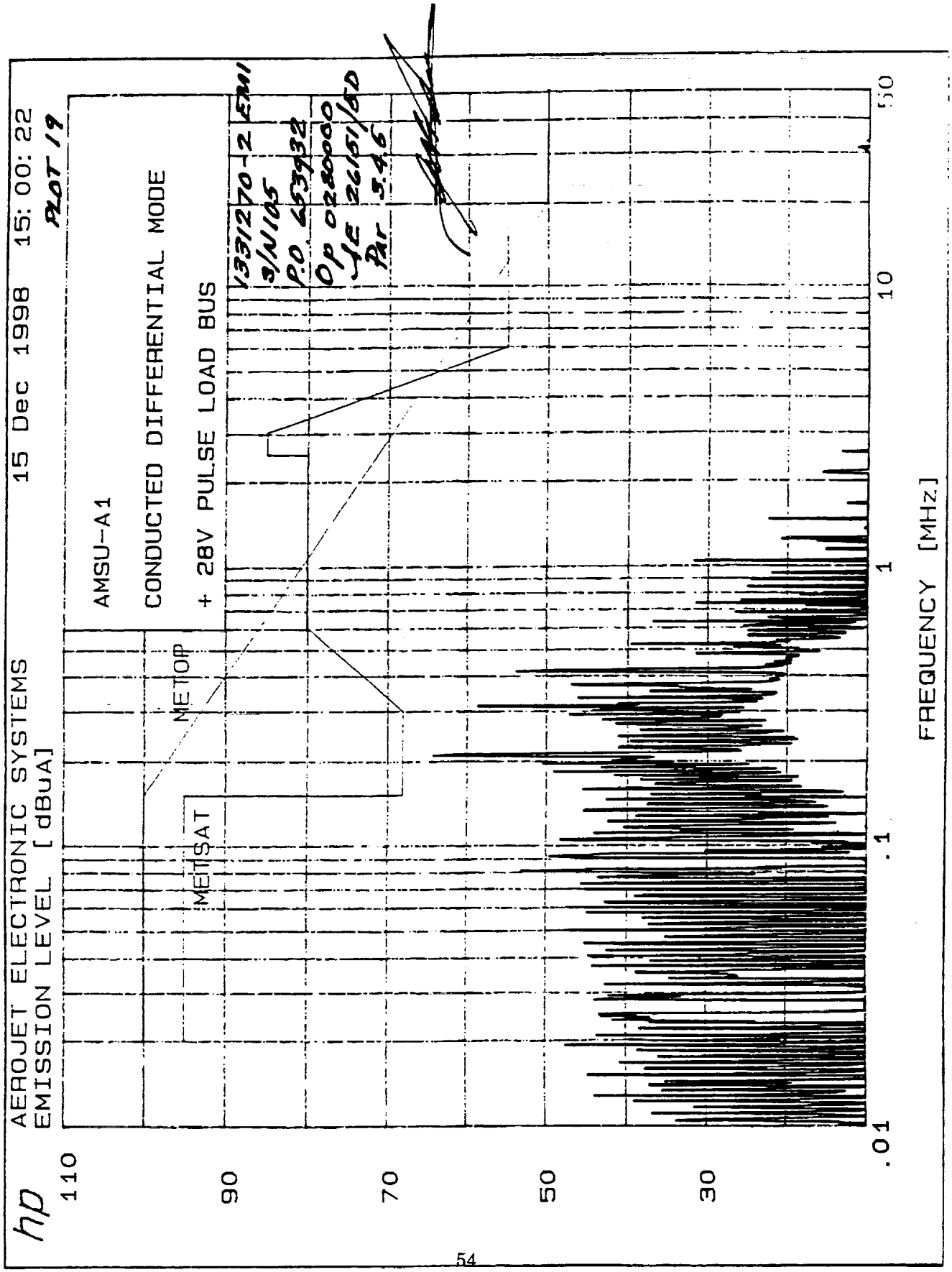

X=18.88KHz
Ya=-119.84 dBVrms
POWER SPEC1
-40.0
10.0
/Div
dB
rms
V2
-120
Fxd Y 20
10Avg
0%Ov1p
15 December 98
CE01
PLOT14 Ov1
20K
Log Hz
0
EQUIVALENT COMMAND MODE LIMIT

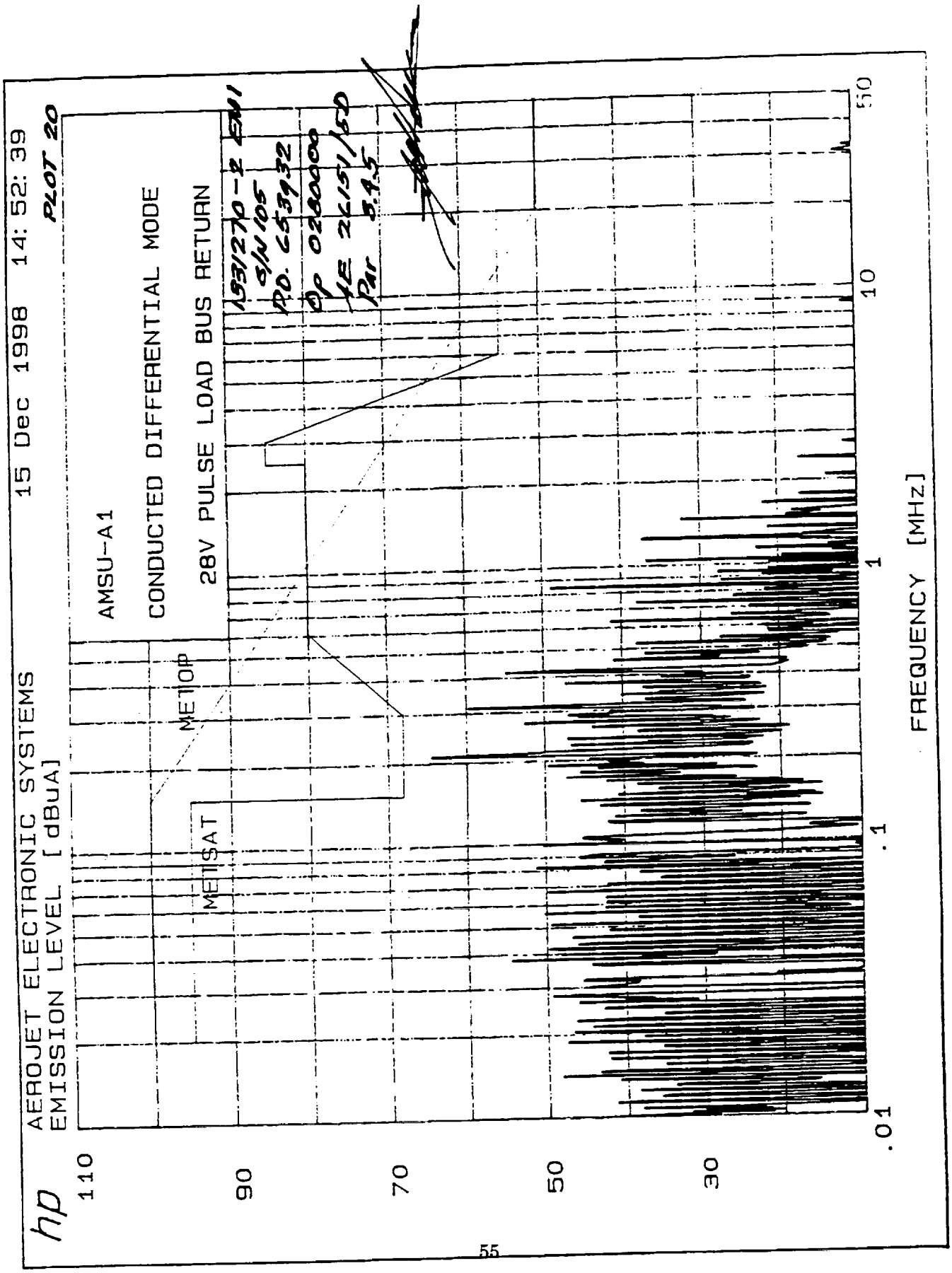

hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 14:21:58
PLOT 15
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
+ 28 V MAIN BUS POWER
METOP
METSAT
FREQUENCY [MHz]
110
90
70
50
30
.01
.1
1
10
50

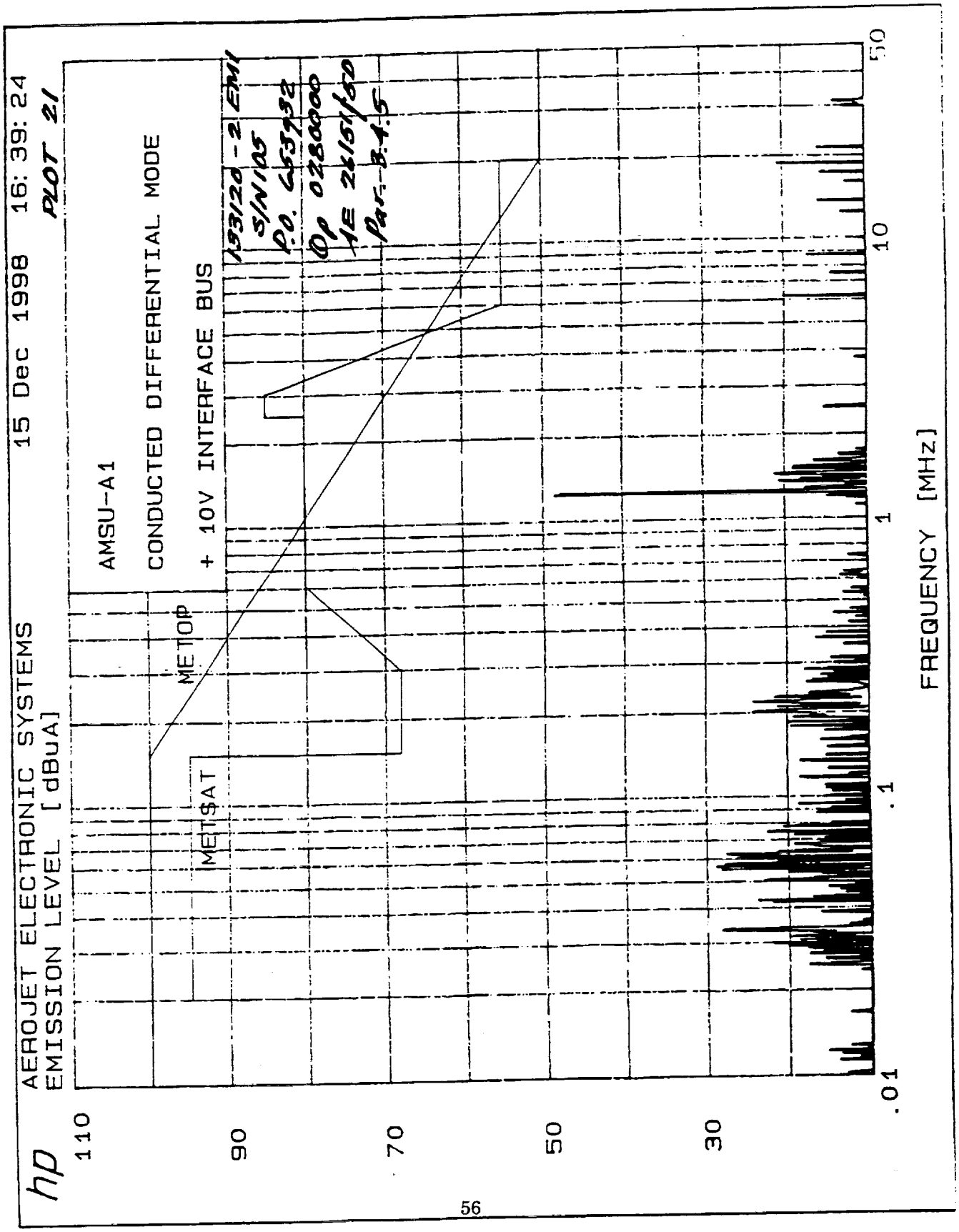

hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 14:37:56
PLOT 16
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
28 V MAIN BUS POWER RETURN
MET SAT
METOP
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]

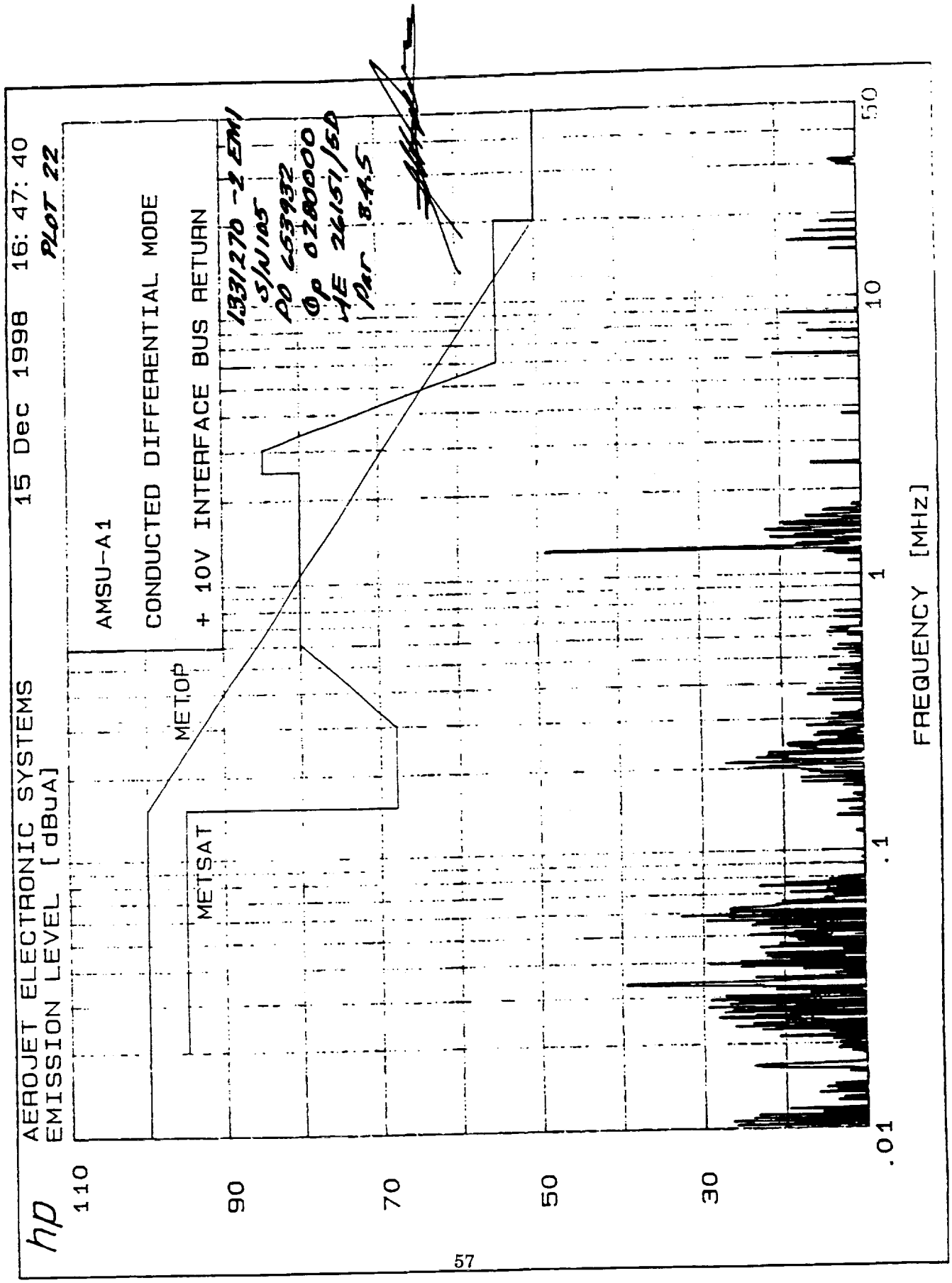

AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBUA]
15 Dec 1998 15: 06: 15
PLOT 17
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
+ 28V TELEMETRY BUS
METOP
METSAT
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]

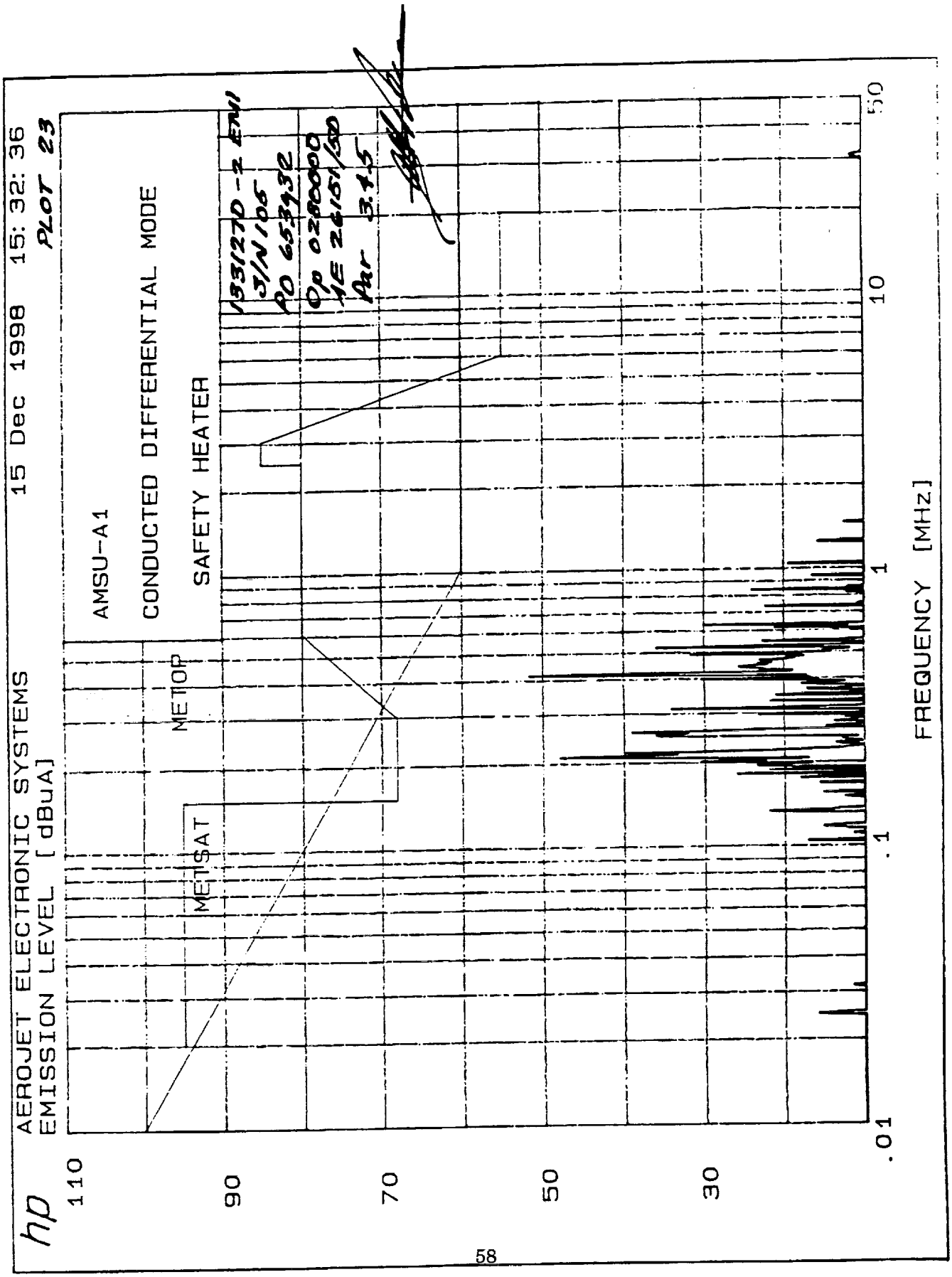

AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 15: 12: 52
PLOT 18
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
+ 28V TELEMETRY BUS RETURN
METOP
METSAT
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]

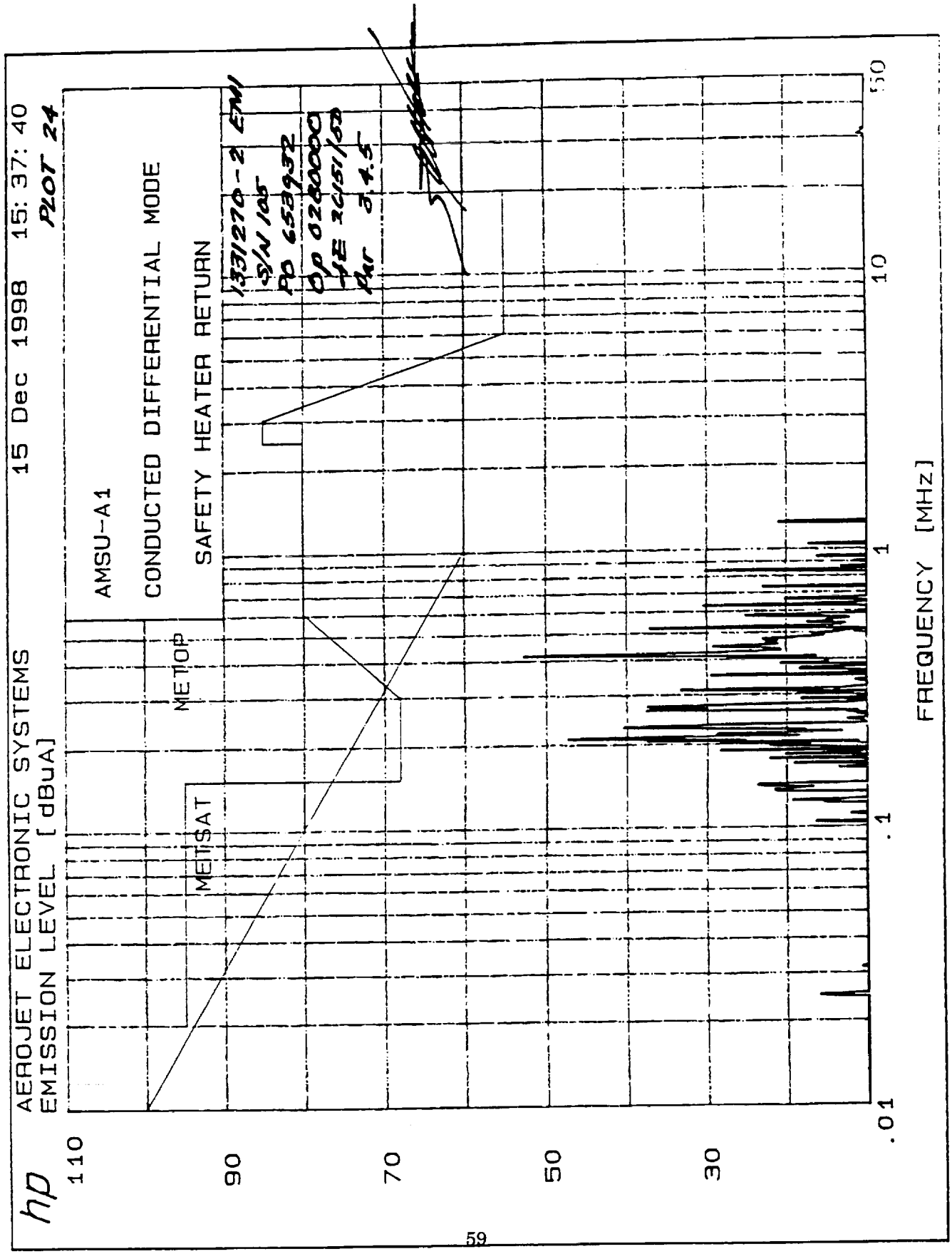

hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 15: 00: 22
PLOT 19
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
+ 28V PULSE LOAD BUS
METOP
METSAT
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]

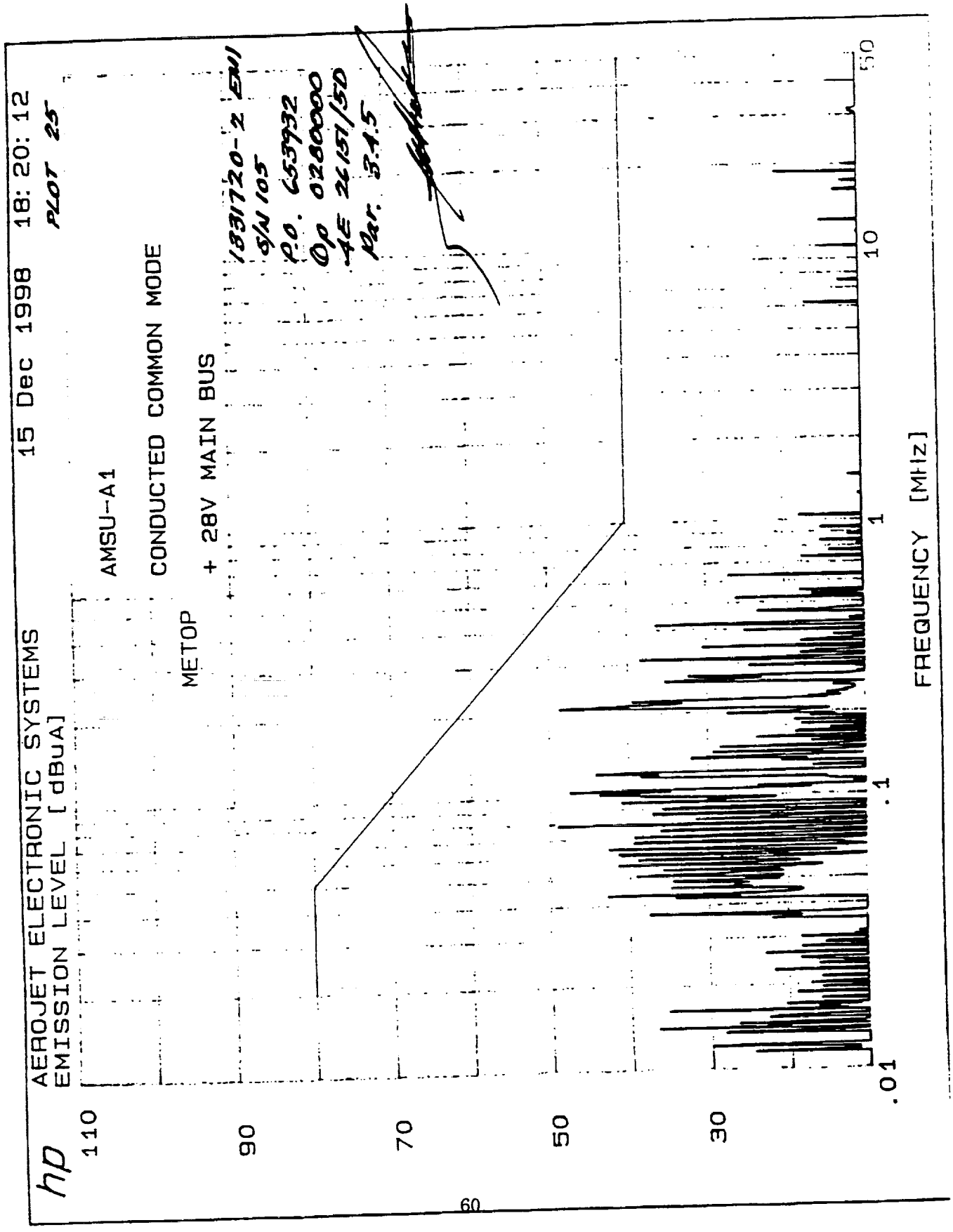

AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 14:52:39
PLOT 20
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
28V PULSE LOAD BUS RETURN
METOP
METSAT
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]

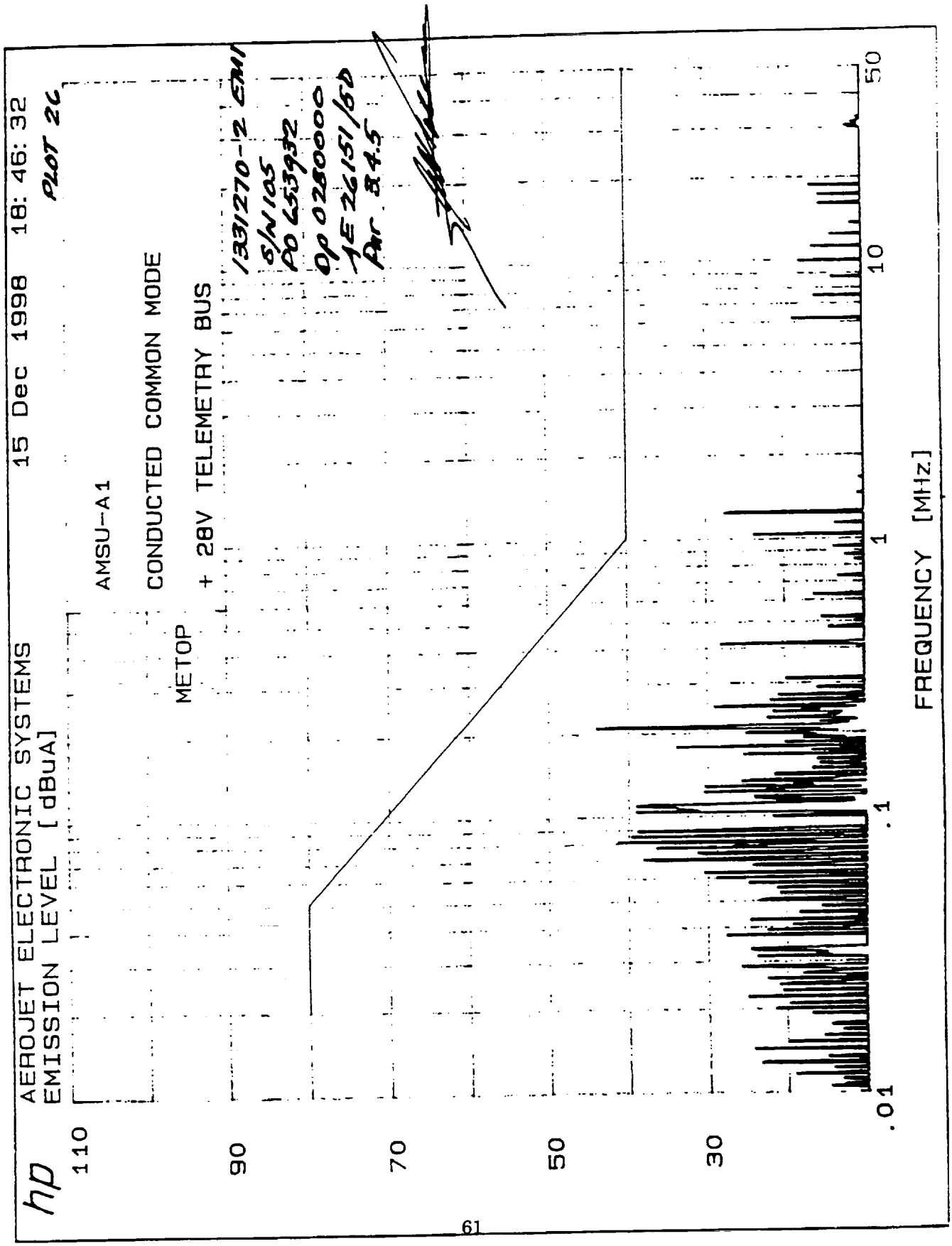

hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 16:39:24
PLOT 21
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
+ 10V INTERFACE BUS
METOP
METSAT
133120-2 EMI
S/N 105
P.O. 453733
Op 0280000
1E 2151/150
Par-3.4.5
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]

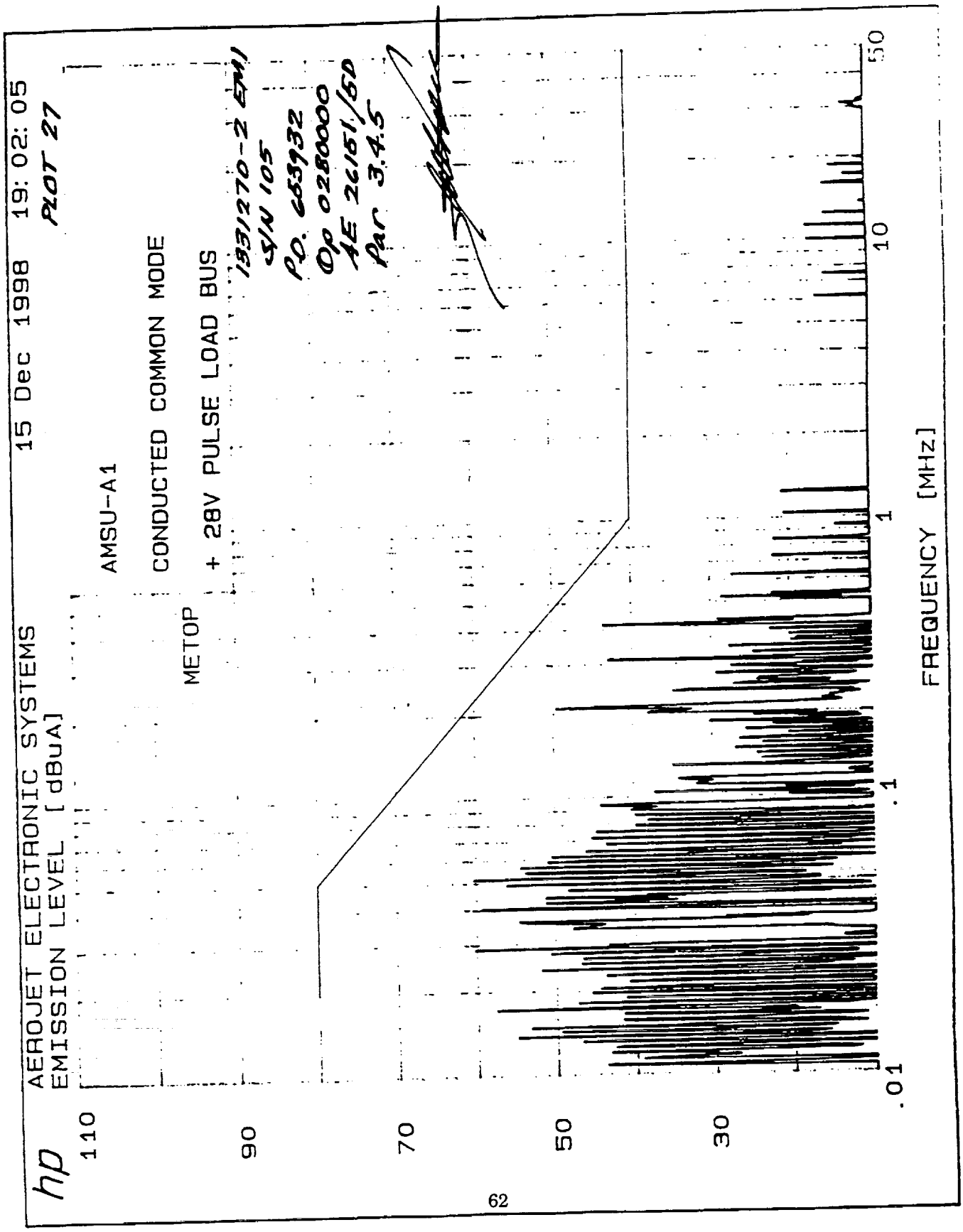

AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 16: 47: 40
PLOT 22
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
+ 10V INTERFACE BUS RETURN
METOP
METSAT
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]

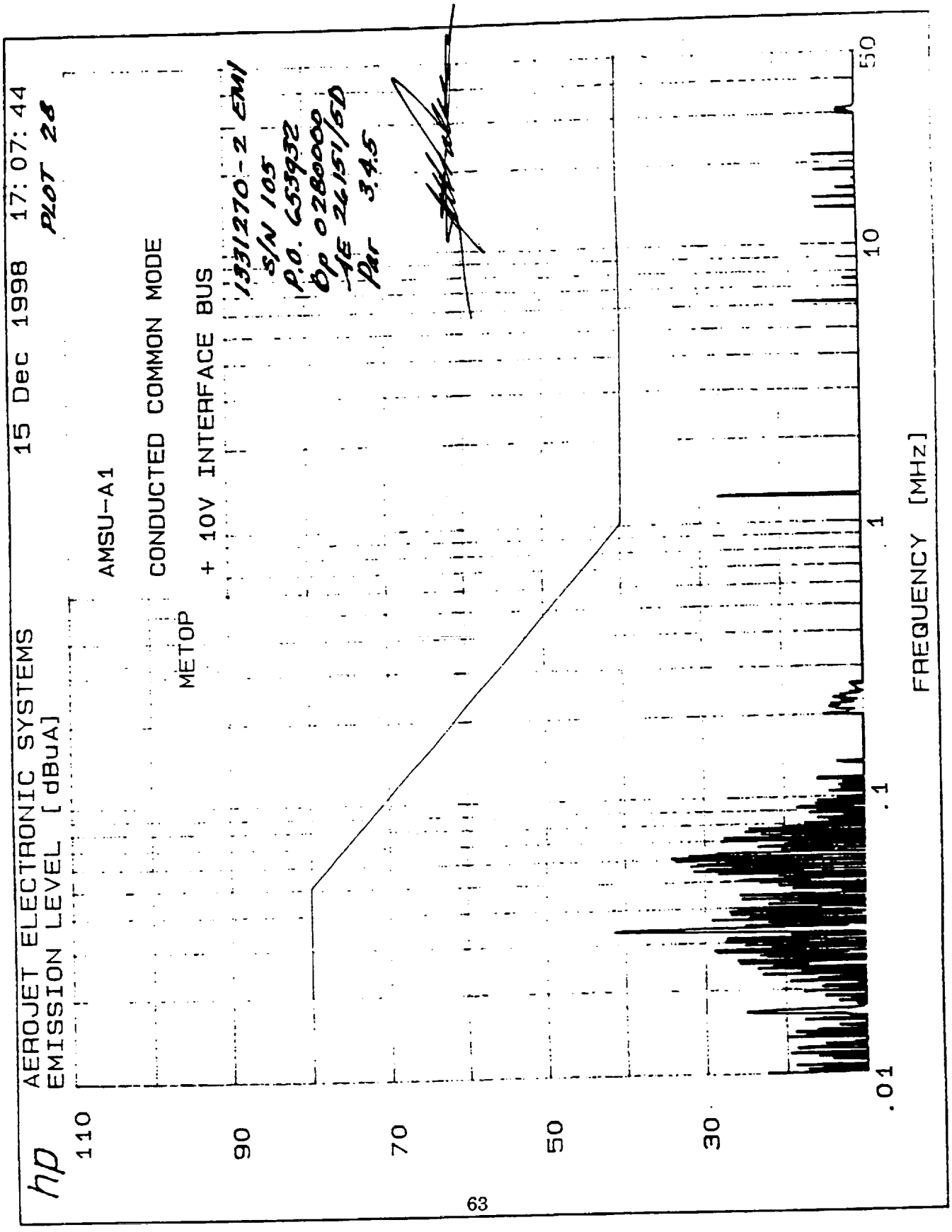

hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 15: 32: 36
PLOT 23
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
SAFETY HEATER
METOP
METSAT
FREQUENCY [MHz]
110
90
70
50
30
.01
.1
1
10
50


AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 15: 37: 40
PLOT 24
AMSU-A1
CONDUCTED DIFFERENTIAL MODE
SAFETY HEATER RETURN
METOP
METSAT
FREQUENCY [MHz]
110
90
70
50
30
.01
.1
1
10
150


hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBUA]
15 Dec 1998 18: 20: 12
PLOT 25
AMSU-A1
CONDUCTED COMMON MODE
METOP
+ 28V MAIN BUS
1331720-2 EM1
S/N 105
P.O. 453932
Op 0200000
4E 24151/50
Var. 3-4.5
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]


hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 18: 46: 32
PLOT 2C
AMSU-A1
CONDUCTED COMMON MODE
METOP
+ 28V TELEMETRY BUS
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]


hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 19: 02: 05
PLOT 27
AMSU-A1
CONDUCTED COMMON MODE
METOP
+ 28V PULSE LOAD BUS
1331270-2 EM1
S/N 105
PO. 053932
Op 0280000
ME 26181/80
Par 3.4.5
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]


AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuA]
15 Dec 1998 17:07:44
PLOT 28
AMSU-A1
CONDUCTED COMMON MODE
+ 10V INTERFACE BUS
METOP
1331270-2 EMI
S/N 105
P.O. 653932
Op 0280000
ME 24151/SD
Par 3.4.5
110
90
70
50
30
.01
.1
1
10
50
FREQUENCY [MHz]

AE-26151/5D
22 Sep 98

TEST DATA SHEET 2 (Sheet 1 of 3)
3.4.6: RE02 Test

Test Setup Verified: Ron Shane 12-15-98
Signature

3.4.6.3.1 Step 1: Test Equipment Log

Item	Manufacturer	Model/ Part No.	Aerojet Inventory No.	Calibration Date	Calibration Due Date
Spectrum Analyzer	HP	8566B	R300680	8-13-98	8-13-99
Amplifier	HP	8447F-H64	C200238	1-14-98	1-14-99
Plotter	HP	7475A	417417	CNR	N/A
Active Monopole	EMC	3301B	55363	10-22-98	10-22-99
Biconnical	HP	11955A	C200224	1-16-98	1-16-99
Log Periodic	HP	11956A	C200225	1-16-98	1-16-99
Active Monopole	EMC	3301B	R300691	07-17-98	11-17-99

12/15

Note: Active Monopole Antenna, EMC 3301B, is not operating properly and was sent to metrology for replacement. This antenna covers the 14kHz to 1 GHz frequency range. This frequency range will be completed ~~with~~ when the replacement is available.
12/17/98

AE-2015-51
22 Sep 15

TEST DATA SHEET 2 (Sheet 2 of 3)
3.4.6: RE02 Test (Cont)

Test Setup Verified: Jon Vandenburg 12/22/98 15 CIT
Signature

12/16/98 AMSU 4 BETT

3.4.6.3.2: Emission Measurements

Step	Antenna/Frequency	Band	Required	Emissions within limits?		Comments Observations
				Yes	No	
4	All except Horn 14 kHz to 1 GHz	Narrow	See Figure 6	✓		PLOTS 101, 103, & 106
6	All except Horn 14 kHz to 1 GHz	Broad	See Figure 7	✓		PLOTS 102, 104 & 105
12	Horn, RGA-180 1 to 2 GHz	Narrow	See Figure 8	✓		Plots 200 & 201
15	Biconical, EMCO 3104 121.5 MHz with Ampl	Narrow	No narrow-band freq. > -150 dBm	✓		Plots 113 & 139
16	Log Conical, EMCO 3101 243 MHz, 401.65 MHz, & 406.05 MHz with Ampl	Narrow	No narrow-band freq. > -150 dBm	✓		Plots 120 & 146 127 & 153 183 & 157
19	Horn, RGA-180 2010 to 2040 MHz with Ampl	Narrow	No narrow-band freq. > -120 dBm	✓		Plots 186 & 187
21	Biconical/Log Conical 59.458 to 751.944 MHz	Narrow	No narrow-band freq. > -60 dBm	✓		Plots 162 to 185
21	400 to 500 MHz	Narrow	-107.1dBm	✓		Plots 188 & 189
21	2 to 18 GHz	Narrow	Figure 3	✓		Plots 208 thru 211
21	1217 to 1227 MHz	Narrow	-111.8 dBm	✓		Plots 190 & 191
21	1565 to 1614 MHz	Narrow	-111.2 dBm	✓		Plots 192 & 193
21	2051.9 to 2055 MHz	Narrow	-126.7 dBm	✓		Plots 194 & 195
21	5254.7 to 5255.3 MHz	Narrow	-122.8 dBm	✓		Plots 196 & 197
21	5450 to 5825 MHz	Narrow	-80.7 dBm	✓		Plots 198 & 199

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test logs, additional comments or observations, etc.) to this data sheet.

AE-26151/5D
22 Sep 98

TEST DATA SHEET 2 (Sheet 3 of 3)
3.4.6: RE02 Test (Cont)

Test Setup Verified: Jon Brandenburg 12/22/98 (AMSU 1A FLT)
Signature

3.4.6.3.2: Emission Measurements

Step	Antenna*/Frequency Range (MHz)	Band	Radiation Limit (dBm)	Emissions within limits? Yes	Emissions within limits? No	Comments/ Observations
22	118.000 - 120.000	Narrow	-100 / Table IV	✓		Plots #'s 110 & 136
22	120.000 -121.450	Narrow	-125 / Table IV	✓		111 & 137
22	121.450 - 121.485	Narrow	-145 / Table IV	✓		112 & 138
22	121.515 - 121.550	Narrow	-145 / Table IV	✓		114 & 140
22	121.550 - 123.000	Narrow	-125 / Table IV	✓		115 & 141
22	123.000 - 125.000	Narrow	-100 / Table IV	✓		116 & 142
23	236.000 - 240.000	Narrow	-100 / Table IV	✓		117 & 143
23	240.000 - 242.925	Narrow	-125 / Table IV	✓		118 & 144
23	242.925 - 242.975	Narrow	-145 / Table IV	✓		119 & 146
23	243.025 - 243.075	Narrow	-145 / Table IV	✓		121 & 147
23	243.075 - 246.000	Narrow	-125 / Table IV	✓		122 & 148
23	246.000 - 250.000	Narrow	-100 / Table IV	✓		123 & 149
23	385.100 - 401.100	Narrow	-100 / Table IV	✓		124 & 150
23	401.100 - 405.900	Narrow	-125 / Table IV	✓		125 & 151
23	405.900 - 406.000	Narrow	-145 / Table IV	✓		126 & 152
23	406.1 00 - 406.200	Narrow	-145 / Table IV	✓		128 & 154
23	406.200 - 411.00	Narrow	-125 / Table IV	✓		129 & 155
23	411.000 - 425.000	Narrow	-100 / Table IV	✓		130 & 156
23	396.000 - 401.500	Narrow	-125 / Table IV	✓		131 & 157
23	401.500 - 401.600	Narrow	-145 / Table IV	✓		132 & 158
23	401.700 - 401.800	Narrow	-145 / Table IV	✓		134 & 160
23	401.800 - 406.000	Narrow	-125 / Table IV	✓		135 & 161

* All frequency ranges are to be performed with antenna in both vertical and horizontal polarization.

Signature/Date

Unit AMSU-A1/METSAT

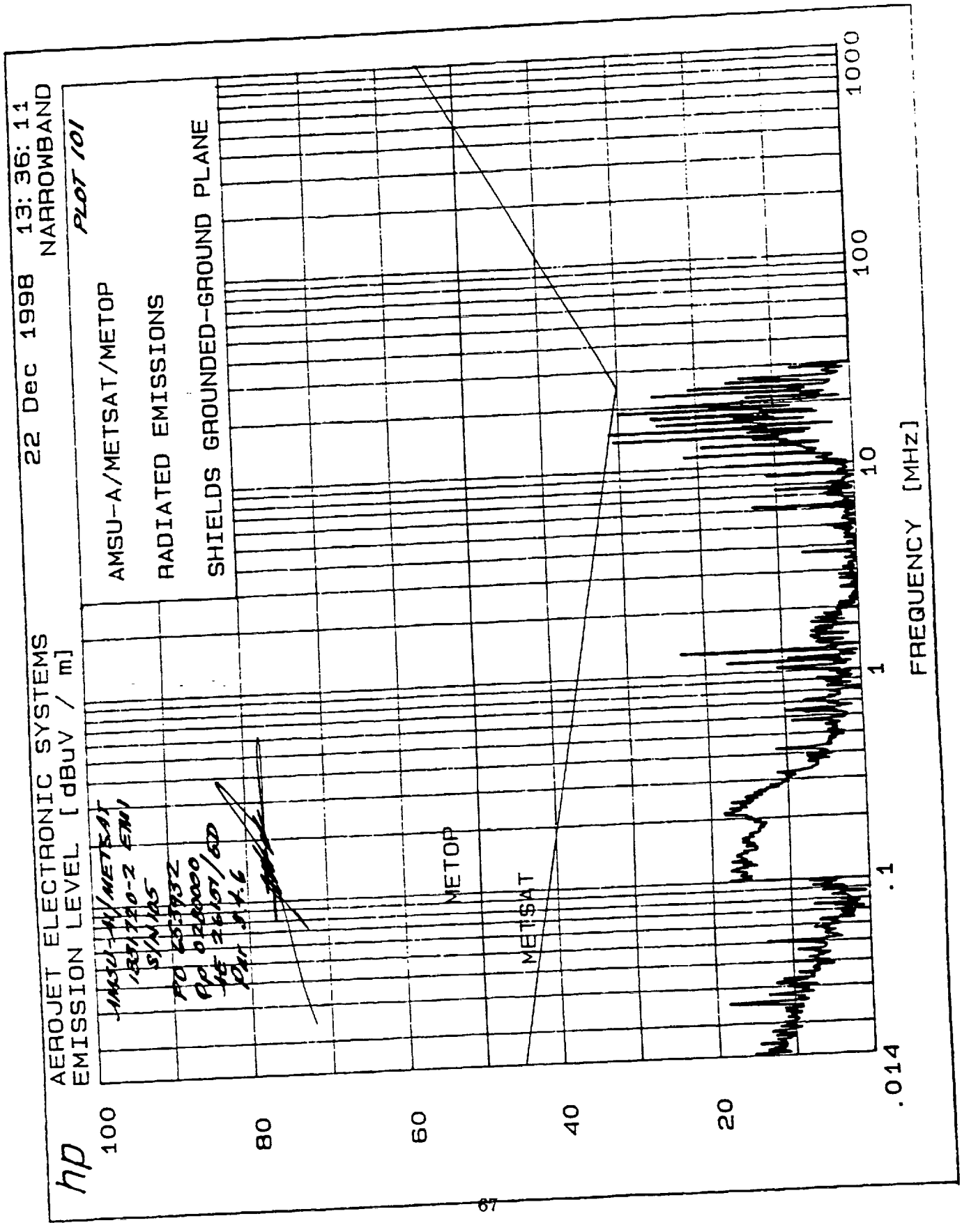
Serial No. 105

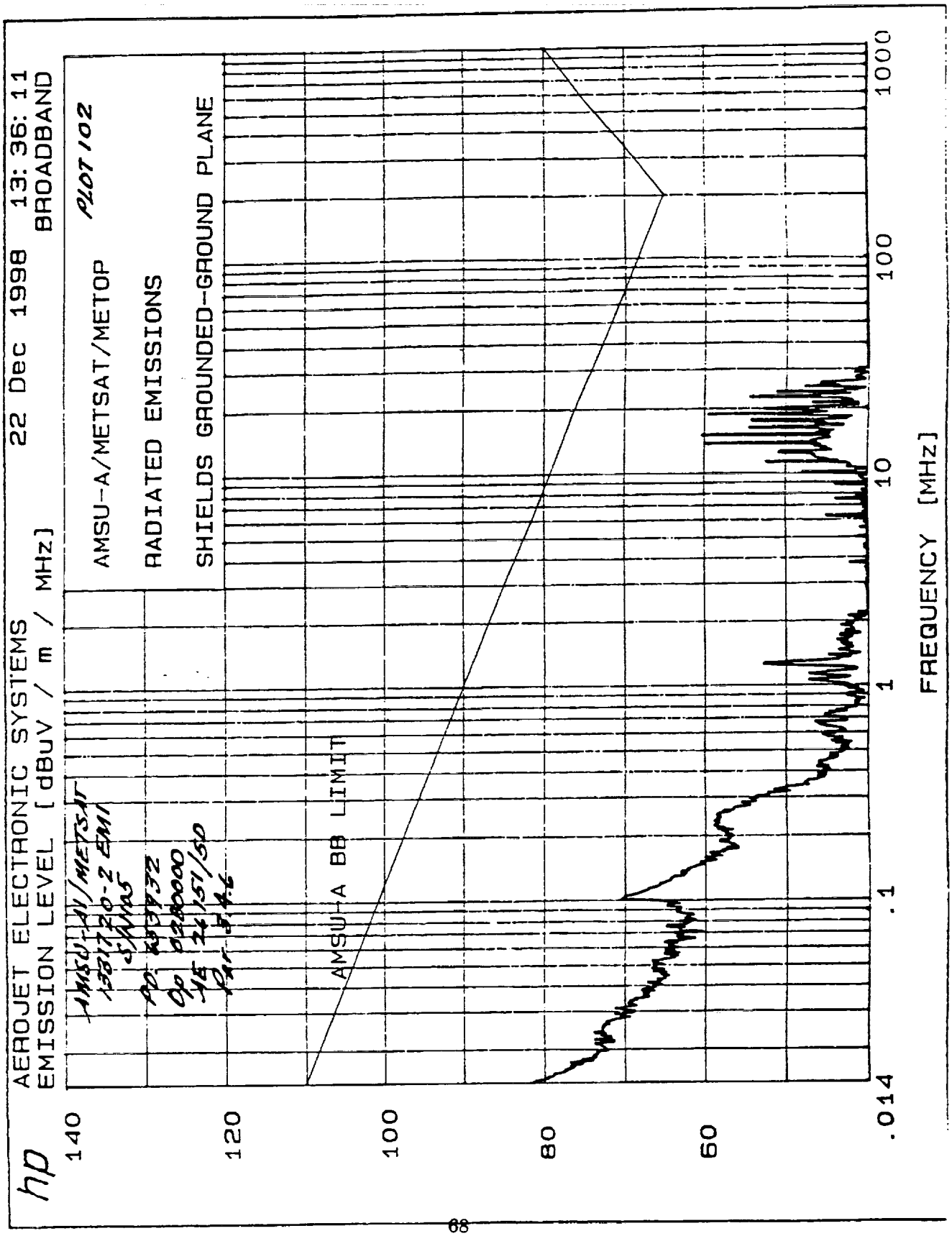
Shop Order 653932 Oper 0280000

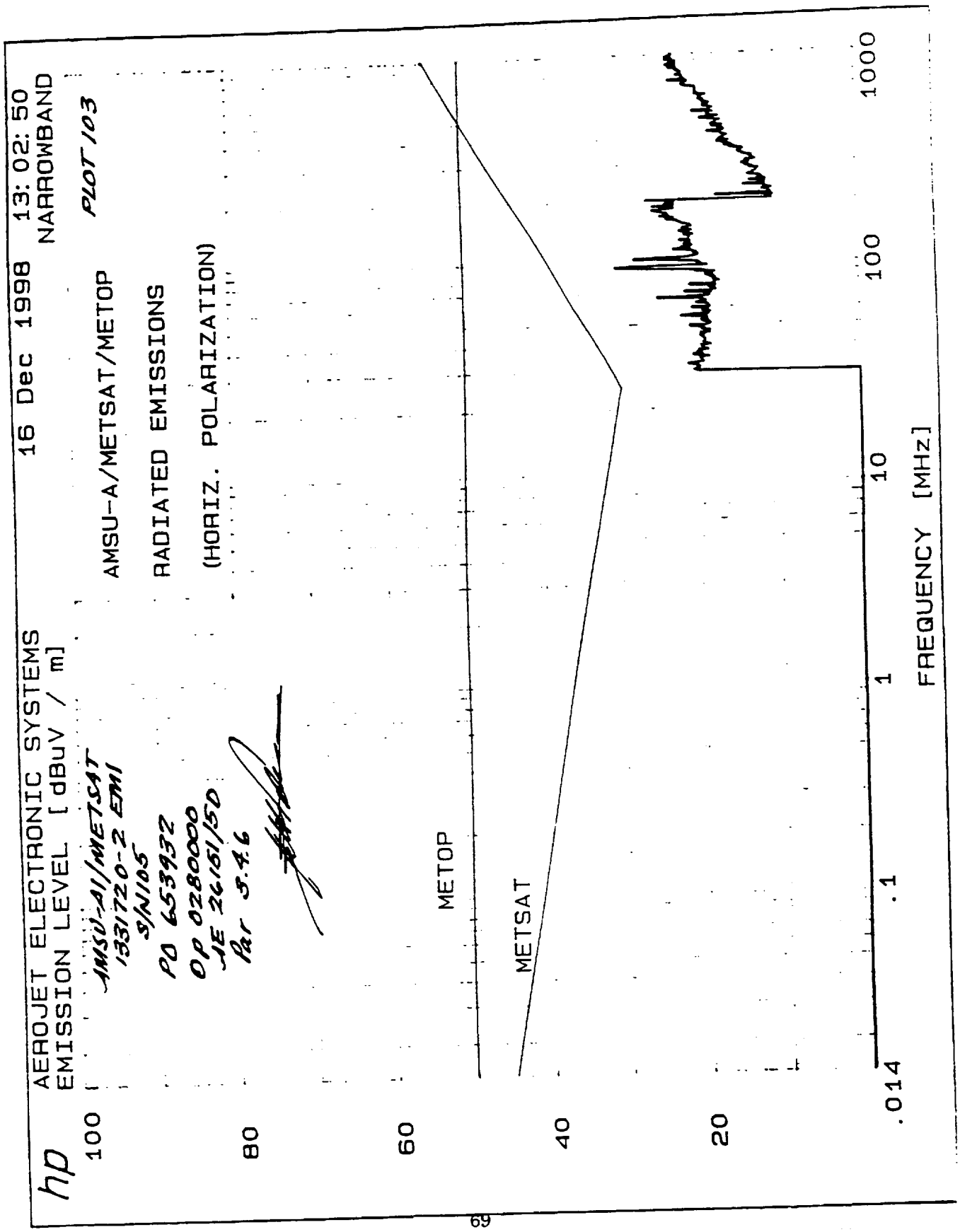
Engineer: 12/22/98

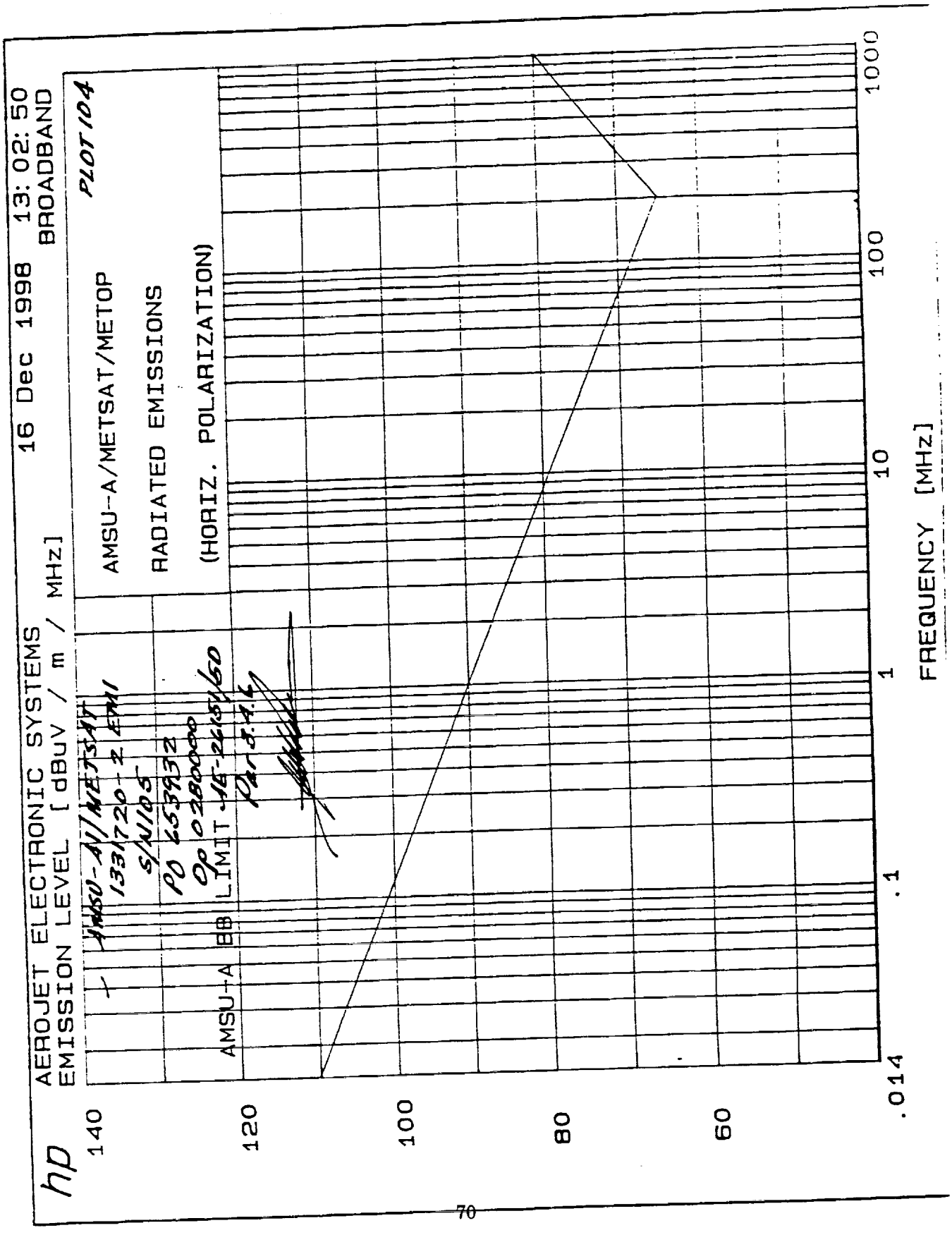
Quality Control: 12/22/98 (AMSU 1A FLT)

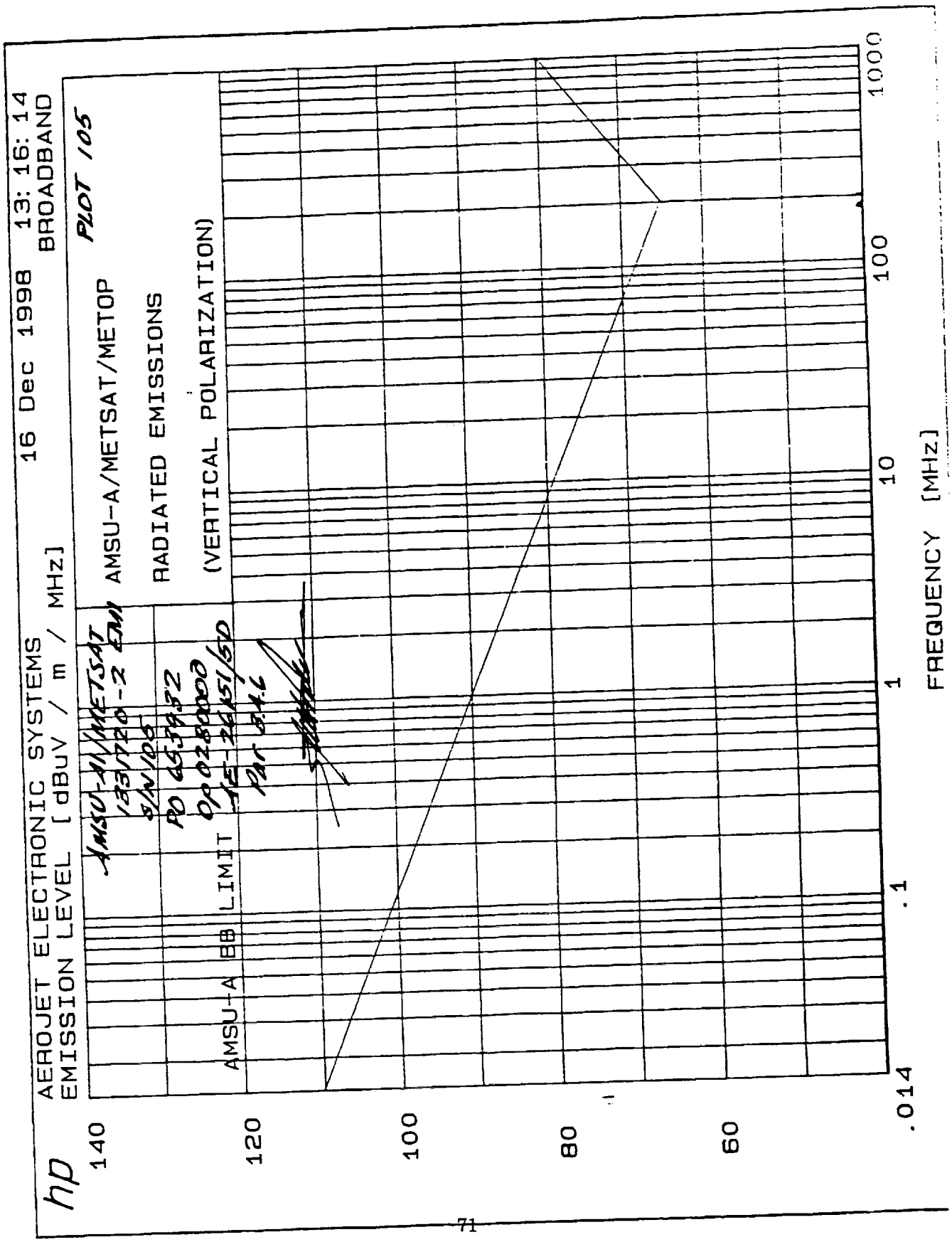
Customer Representative: 12-22-98

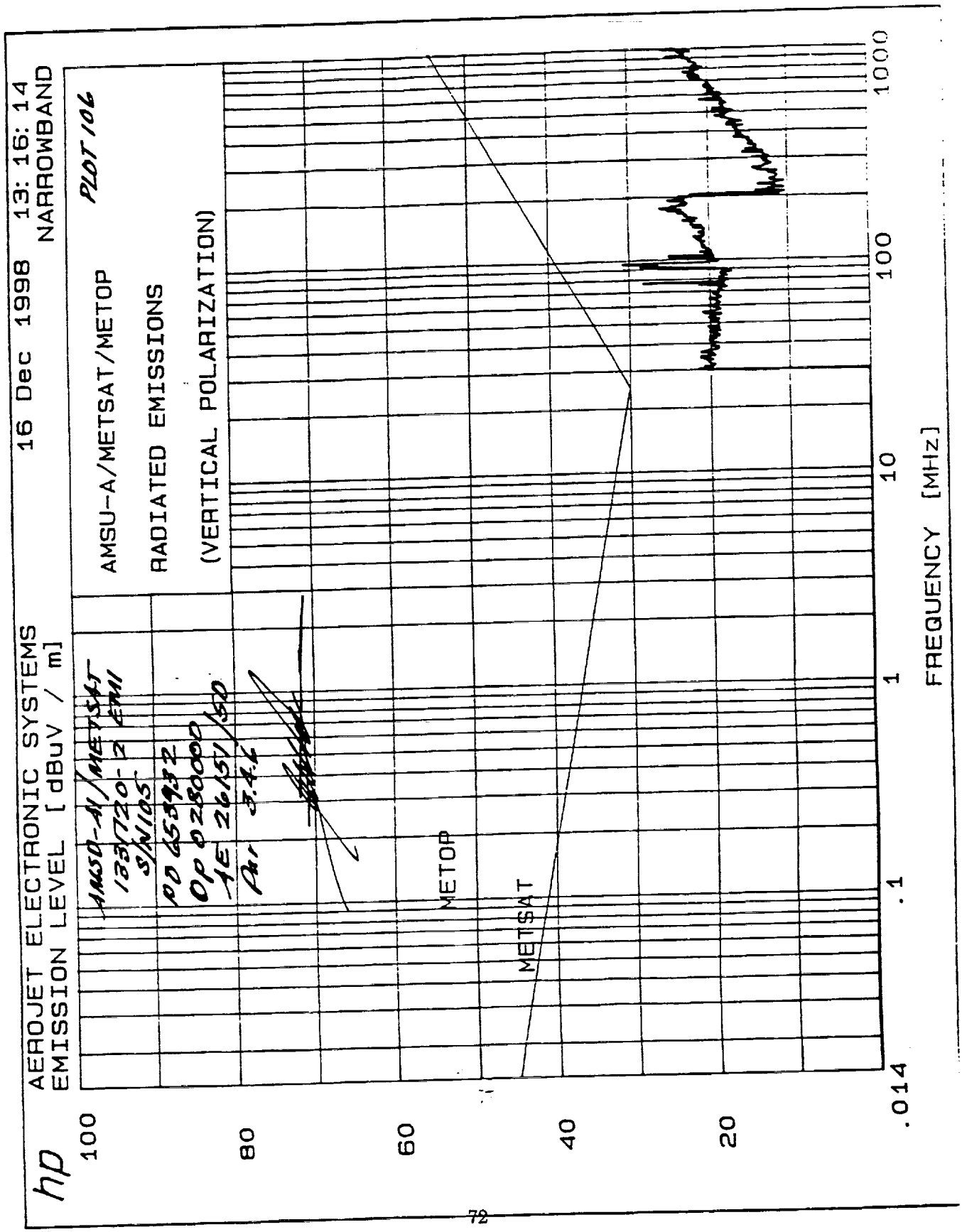

hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuV / m]
22 Dec 1998 13:36:11
NARROWBAND
PLOT 101
AMSU-A/METSAT/METOP
RADIATED EMISSIONS
SHIELDS GROUNDED-GROUND PLANE
METOP
METSAT
100
80
60
40
20
.014
.1
1
10
100
1000
FREQUENCY [MHz]


hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuV / m / MHz]
22 Dec 1998 13:36:11
BROADBAND
AMSU-A/METSAT/METOP
PLOT 102
RADIATED EMISSIONS
SHIELDS GROUNDED-GROUND PLANE
AMSU-A BB LIMIT
140
120
100
80
60
.014
.1
1
10
100
1000
FREQUENCY [MHz]


hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuV / m]
16 Dec 1998 13:02:50
NARROWBAND
PLOT 103
AMSU-A/METSAT/METOP
RADIATED EMISSIONS
(HORIZ. POLARIZATION)
AMSU-A1/METSAT
131720-2 EM1
S/N105
PO 653932
OP 0280000
JE 26161/50
Par 5.4.6
100
80
60
40
20
METOP
METSAT
.014
.1
1
10
100
1000
FREQUENCY [MHz]


hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuV / m / MHz]
16 Dec 1998 13: 02: 50
BROADBAND
PLOT 104
AMSU-A/METSAT/METOP
RADIATED EMISSIONS
(HORIZ. POLARIZATION)
AMSU-A
LIMIT
140
120
100
80
60
.014
.1
1
10
100
1000
FREQUENCY [MHz]


hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuV / m / MHz]
16 Dec 1998 13: 16: 14
BROADBAND
PLOT 105
AMSU-A/METSAT/METOP
RADIATED EMISSIONS
(VERTICAL POLARIZATION)
AMSU-A BB LIMIT
140
120
100
80
60
.014
.1
1
10
100
1000
FREQUENCY [MHz]


hp
AEROJET ELECTRONIC SYSTEMS
EMISSION LEVEL [dBuV / m]
16 Dec 1998 13: 16: 14
NARROWBAND
AMSU-A/METSAT/METOP
RADIATED EMISSIONS
(VERTICAL POLARIZATION)
PLOT 106
AMSU-A1/METSAT
123720-2 EMI
S/N105
RD 65932
OP 0250000
HE 26151/50
AR 3.42
METOP
METSAT
100
80
60
40
20
.014
.1
1
10
100
1000
FREQUENCY [MHz]

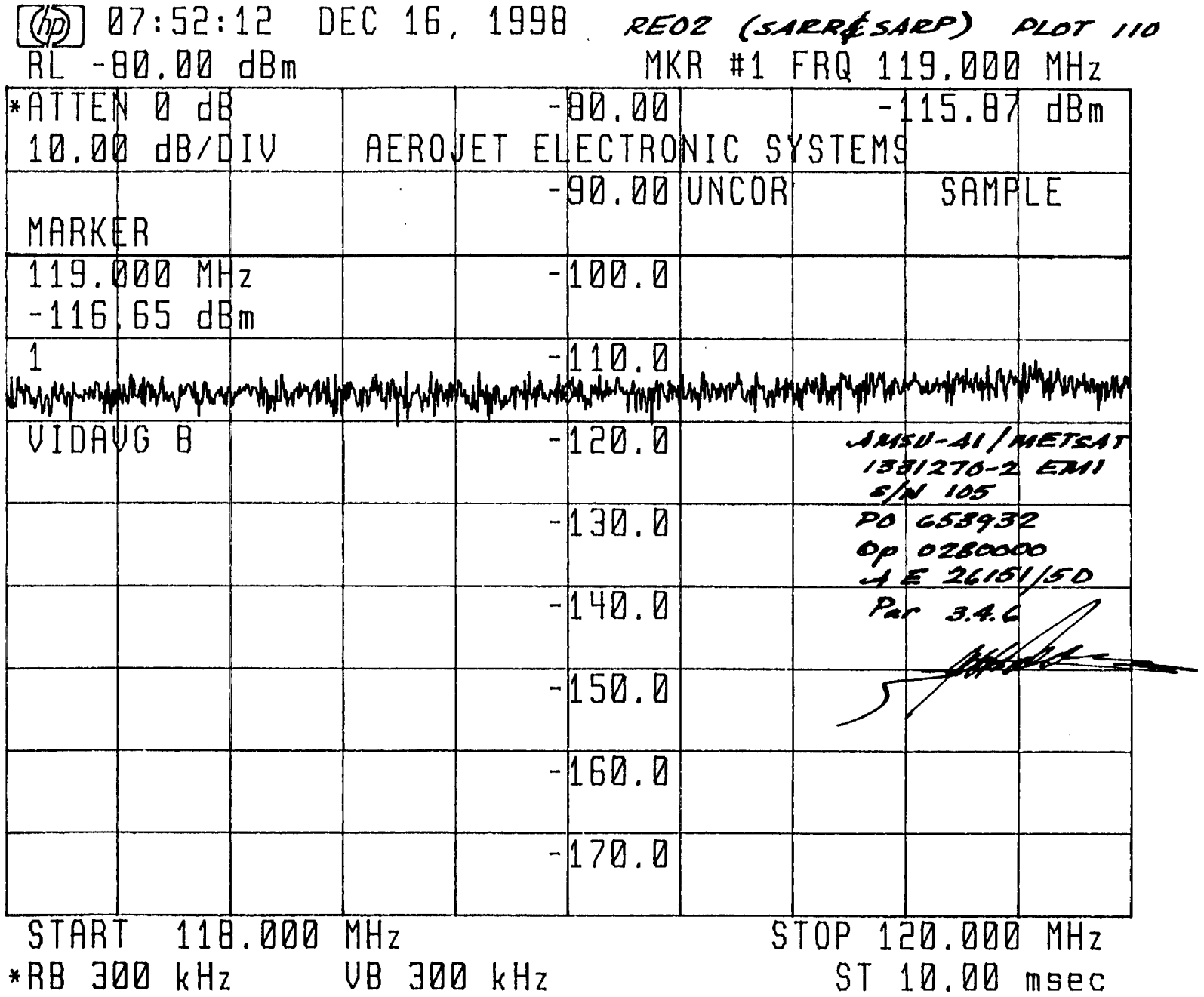
ROJET ELECTRONIC SYSTEMS 22 Dec 1998 13:36:11

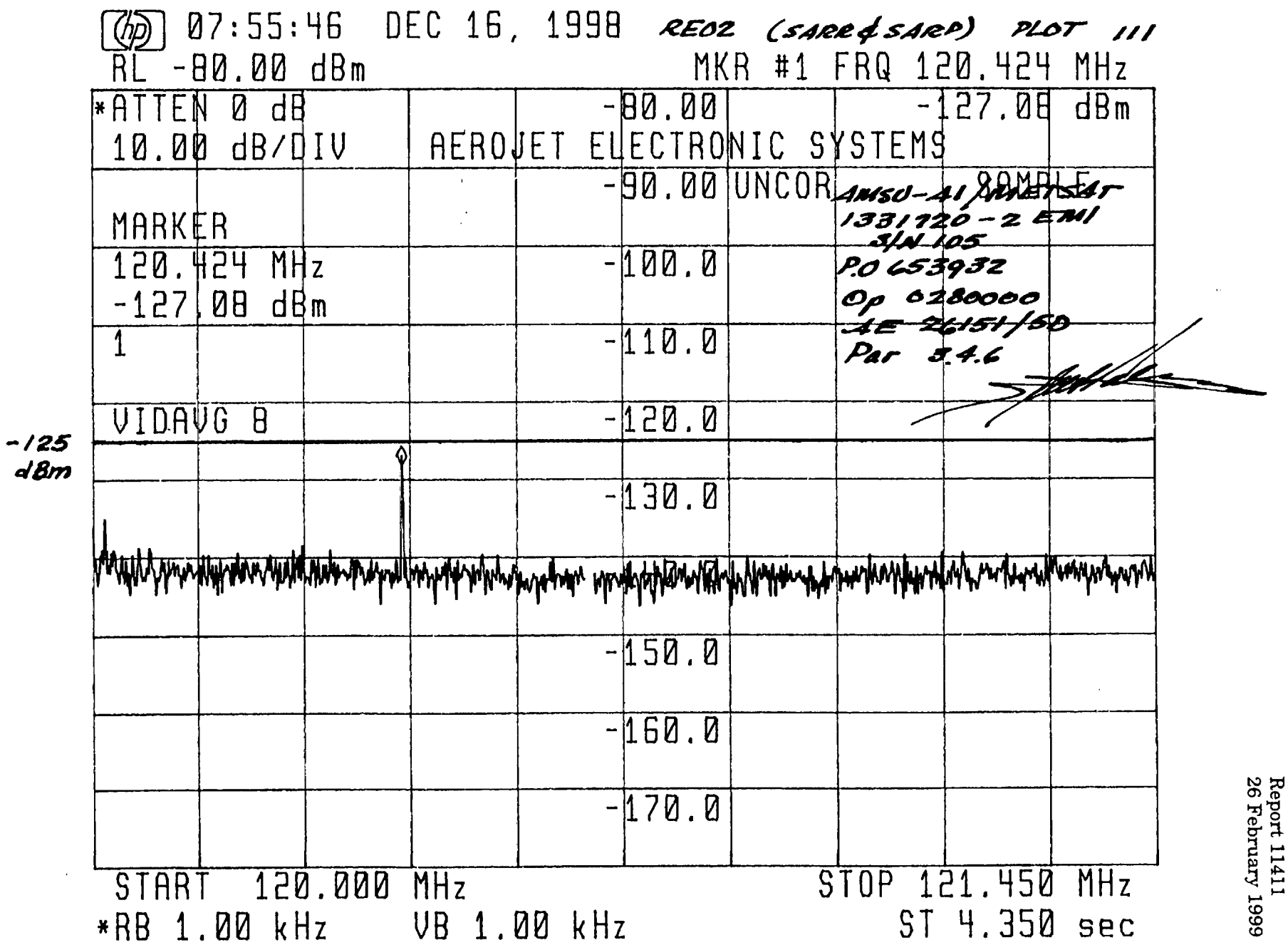
DIATED EMISSIONS
IELDS GROUNDED-GROUND PLANE

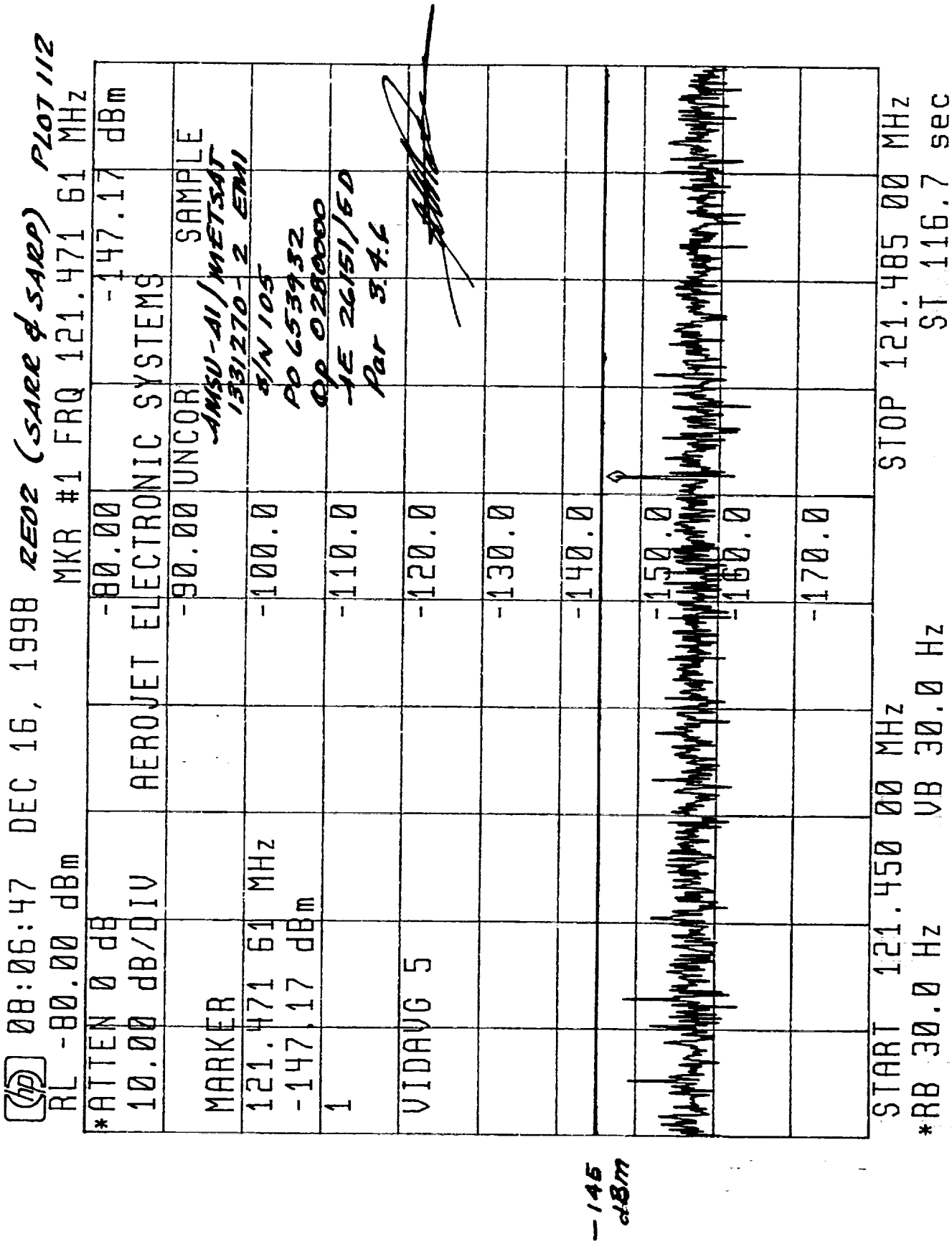
AMSU-A1/METSAT
1331720-2 EMI
S/N105
PO 653932
Op 0280000
AE 26151/50
Par 8.4.6

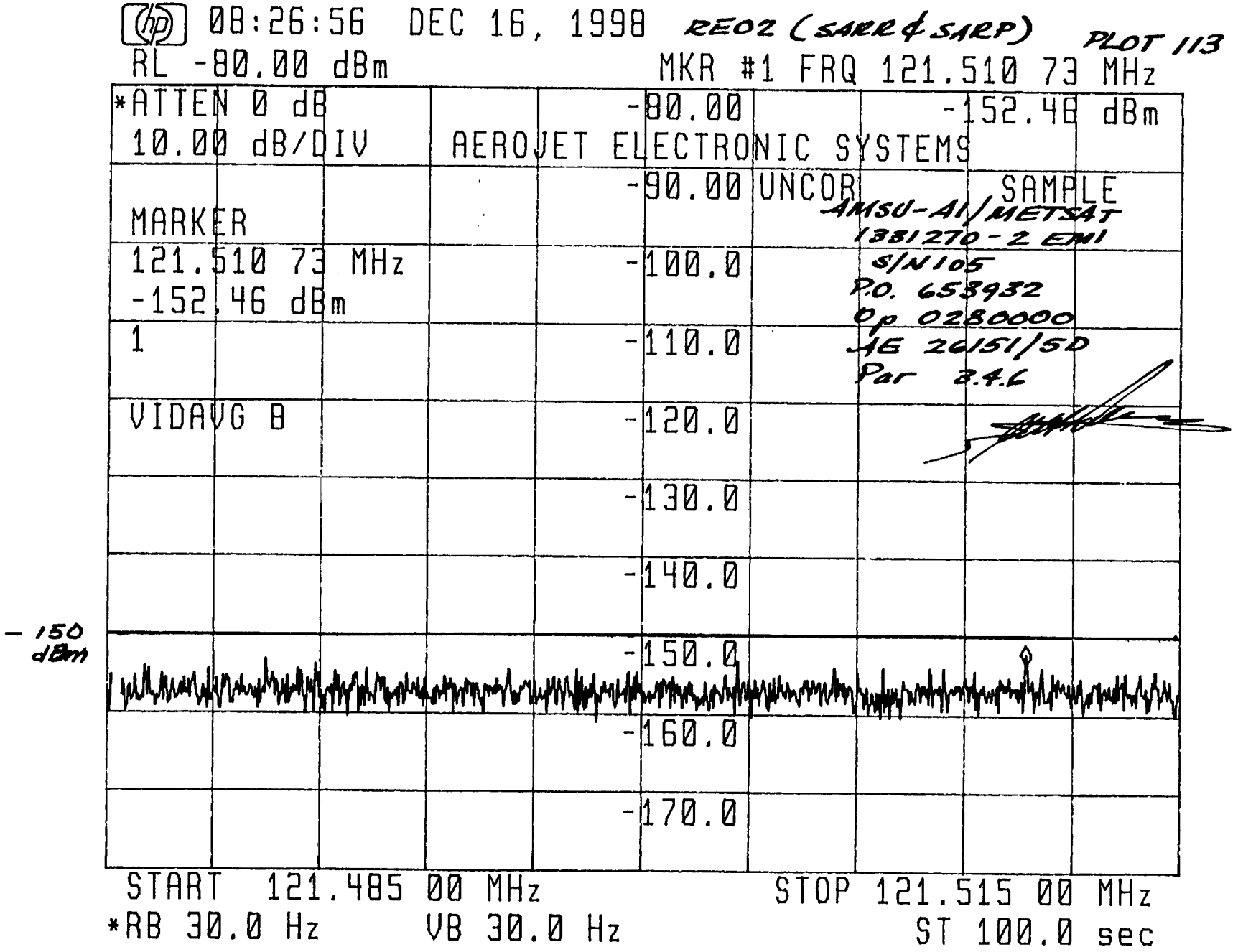
AKS FOUND ABOVE 10dBuV / m

AK#	FREQ (Hz)	AMPL(dBuV / m)
1	16.0E+03	15
2	18.3E+03	13
3	25.3E+03	18
4	27.7E+03	13
5	30.2E+03	11
6	31.6E+03	12
7	33.1E+03	11
8	40.0E+03	10
9	50.6E+03	13
0	10.1E+04	18
1	12.5E+04	17
2	21.3E+04	18
3	42.2E+04	11
4	10.4E+05	11
5	11.1E+05	17
6	12.6E+05	23
7	62.2E+05	13
8	75.2E+05	10
9	87.9E+05	11
0	99.4E+05	16
1	11.2E+06	22
2	12.4E+06	19
3	13.3E+06	13
4	13.7E+06	31
5	14.4E+06	13
6	15.0E+06	31
7	15.4E+06	14
8	16.2E+06	25
9	16.8E+06	15
0	17.6E+06	26
1	18.0E+06	12
2	18.8E+06	30
3	19.9E+06	25
4	21.2E+06	13
5	22.5E+06	25
6	23.7E+06	21
7	25.1E+06	16
8	26.3E+06	14

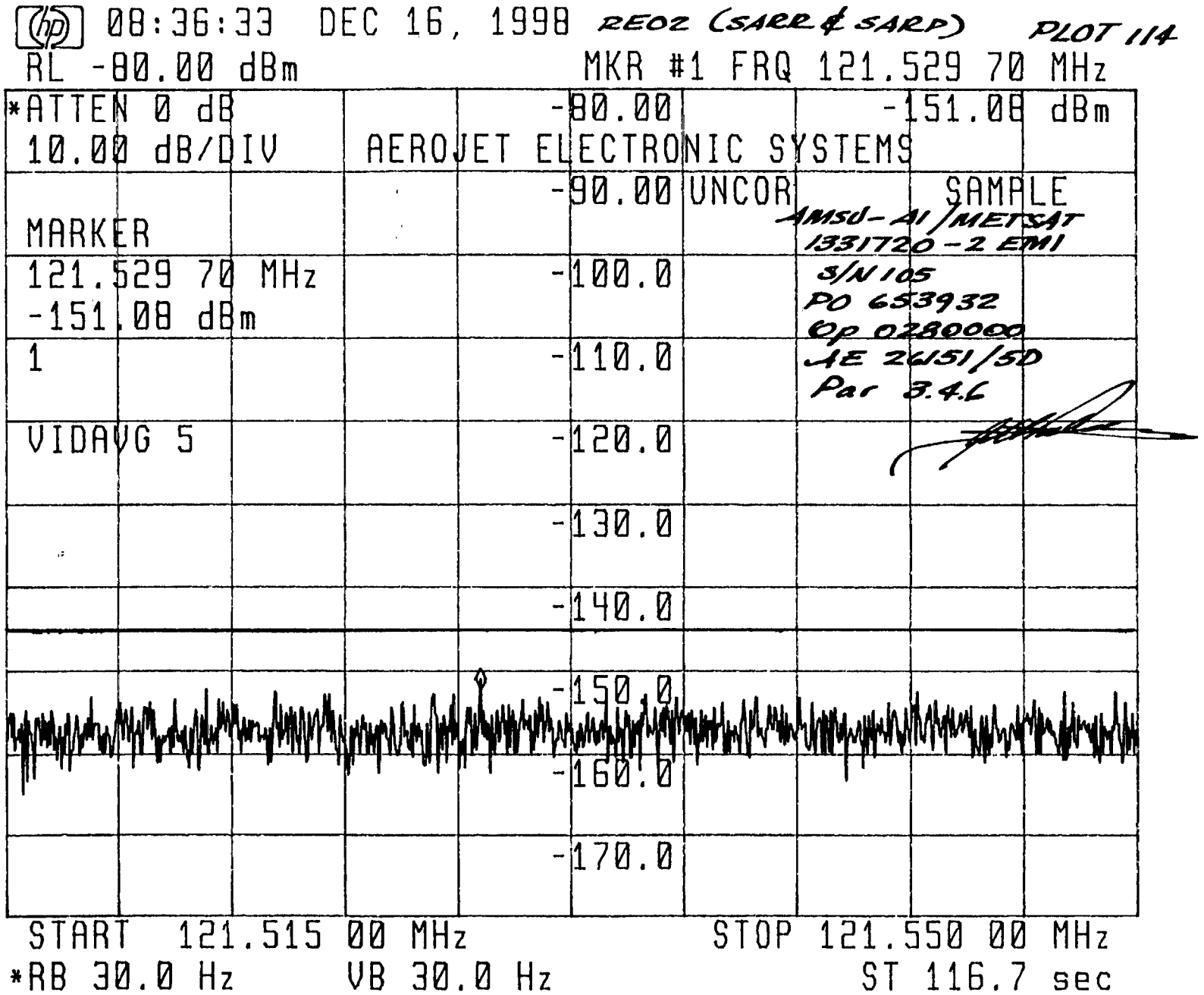

07:52:12 DEC 16, 1998
RE02 (SARR&SARP) PLOT 110
RL -80.00 dBm
MKR #1 FRQ 119.000 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-115.87 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
MARKER
119.000 MHz
-116.65 dBm
-100 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
AMSU-A1/METSAT
1331270-2 EMI
S/N 105
PO 653932
Op 0280000
AE 26151/50
Par 3.4.6
-130.0
-140.0
-150.0
-160.0
-170.0
START 118.000 MHz
STOP 120.000 MHz
*RB 300 kHz
VB 300 kHz
ST 10.00 msec

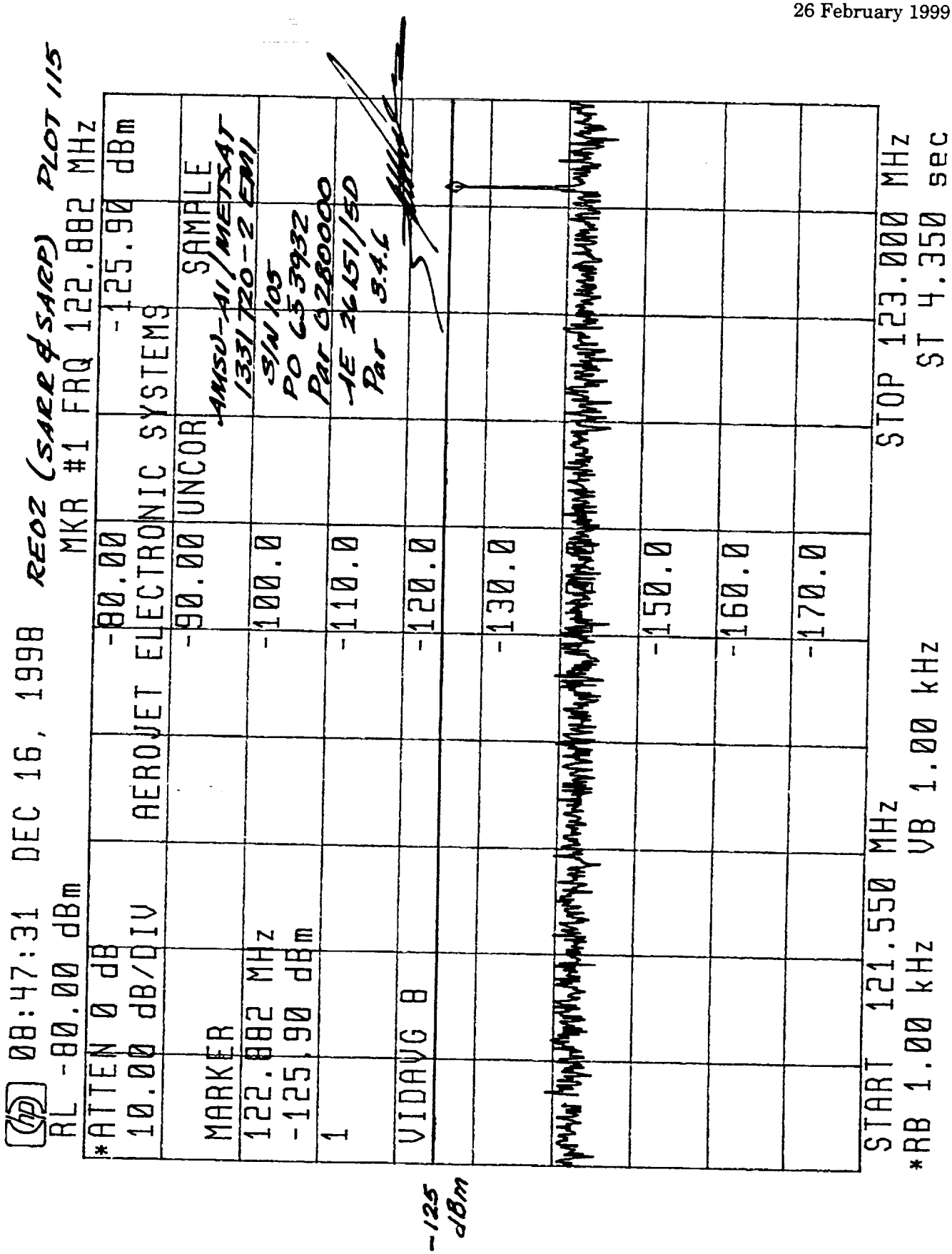

07:55:46 DEC 16, 1998 RE02 (SARE & SARP) PLOT 111
RL -80.00 dBm
MKR #1 FRQ 120.424 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-127.08 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
ANSI-41 MINISAT
1331720-2 EMI
S/N 105
P.O 453932
Op 0280000
AE 26151/50
Par 3.4.6
MARKER
120.424 MHz
-127.08 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
-125 dBm
-130.0
-150.0
-160.0
-170.0
START 120.000 MHz
STOP 121.450 MHz
*RB 1.00 kHz
VB 1.00 kHz
ST 4.350 sec

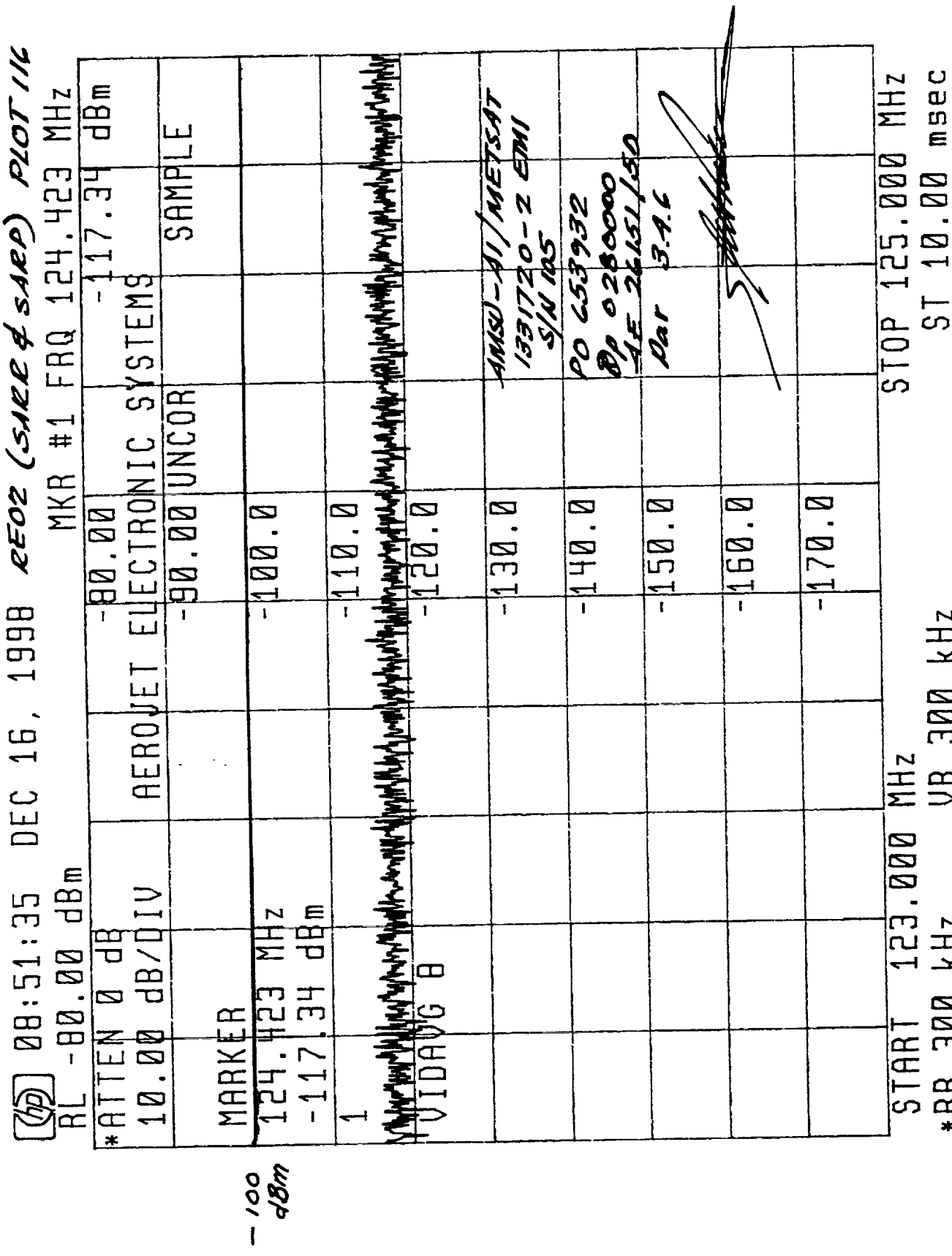

08:06:47 DEC 16, 1998 RE02 (SARE & SARD) PLOT 112
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
121.471 61 MHz
-147.17 dBm
1
VIDAVG 5
MKR #1 FRQ 121.471 61 MHz
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-147.17 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/METSAT
1331270-2 EMI
S/N 105
PO 653432
QP 0280000
4E 26151/60
Par 5.4.2
START 121.450 00 MHz
*RB 30.0 Hz
VB 30.0 Hz
STOP 121.485 00 MHz
ST 116.7 sec
-145 dBm

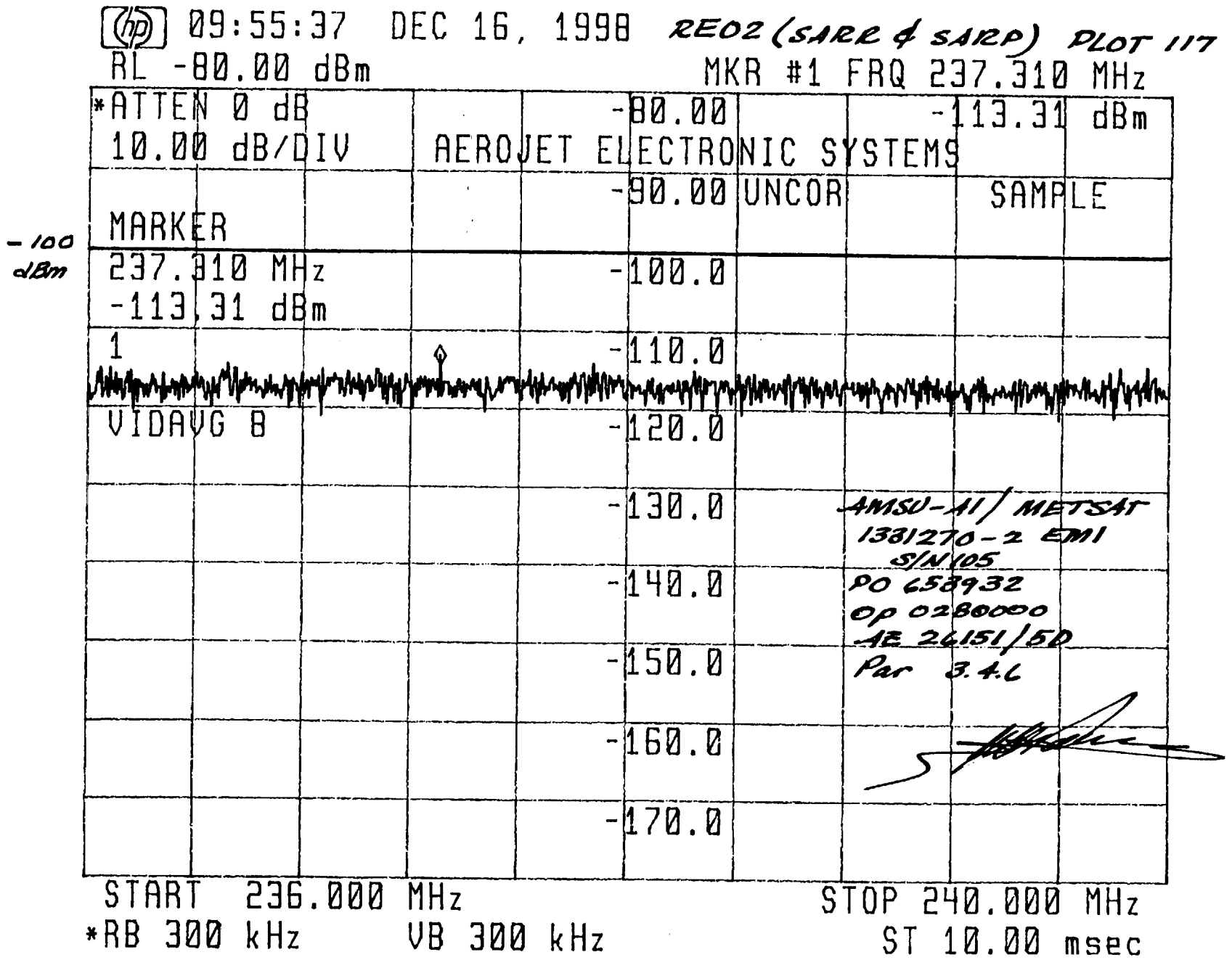

08:26:56 DEC 16, 1998
RE02 (SARR & SARP)
PLOT 113
RL -80.00 dBm
MKR #1 FRQ 121.510 73 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-152.46 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331270-2 EM1
S/N105
P.O. 653932
Op 0280000
AE 26151/5D
Par 3.4.6
MARKER
121.510 73 MHz
-152.46 dBm
-100.0
-110.0
1
VIDAVG 8
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
START 121.485 00 MHz
STOP 121.515 00 MHz
*RB 30.0 Hz
VB 30.0 Hz
ST 100.0 sec

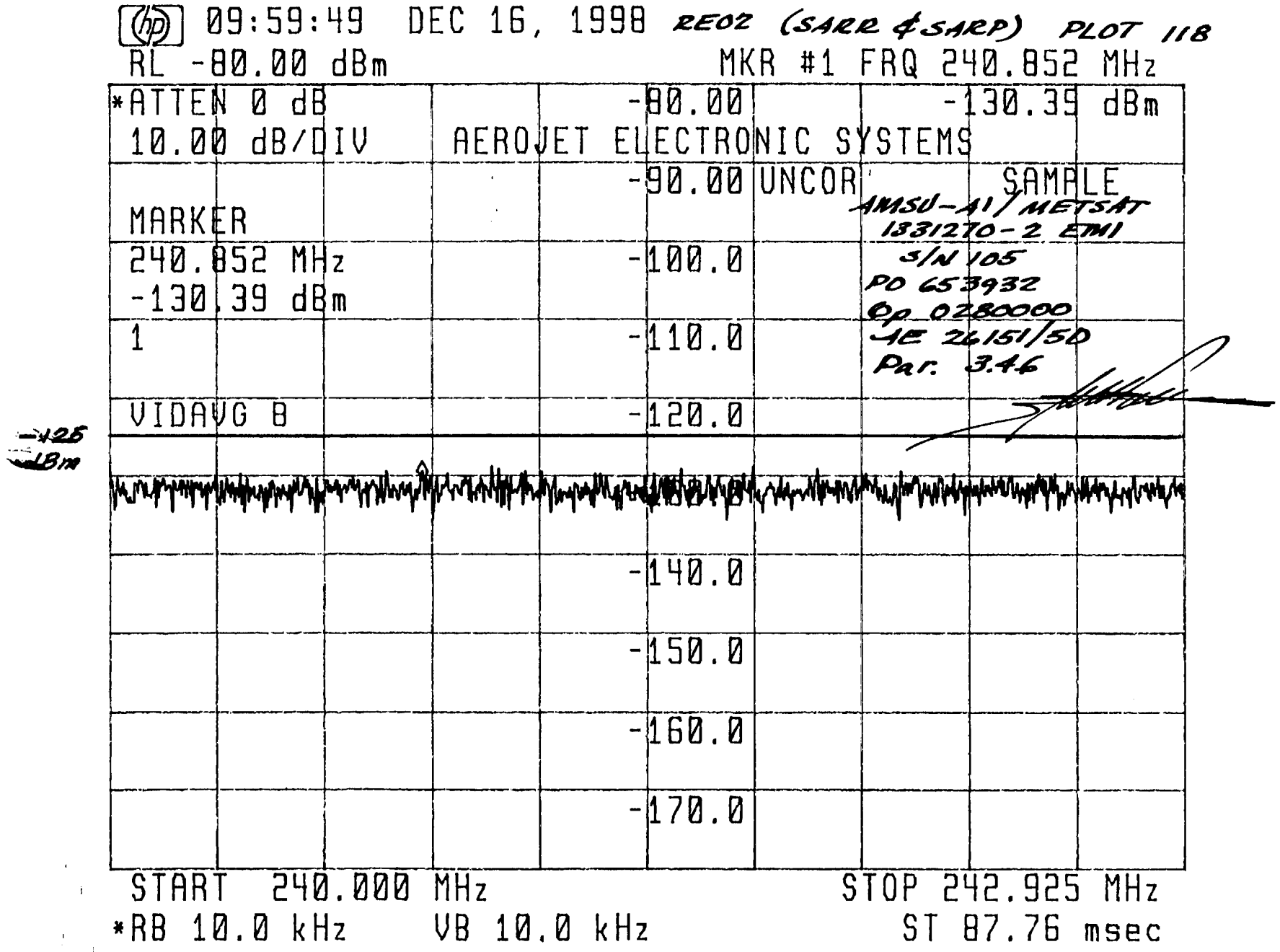
– 150 dBm

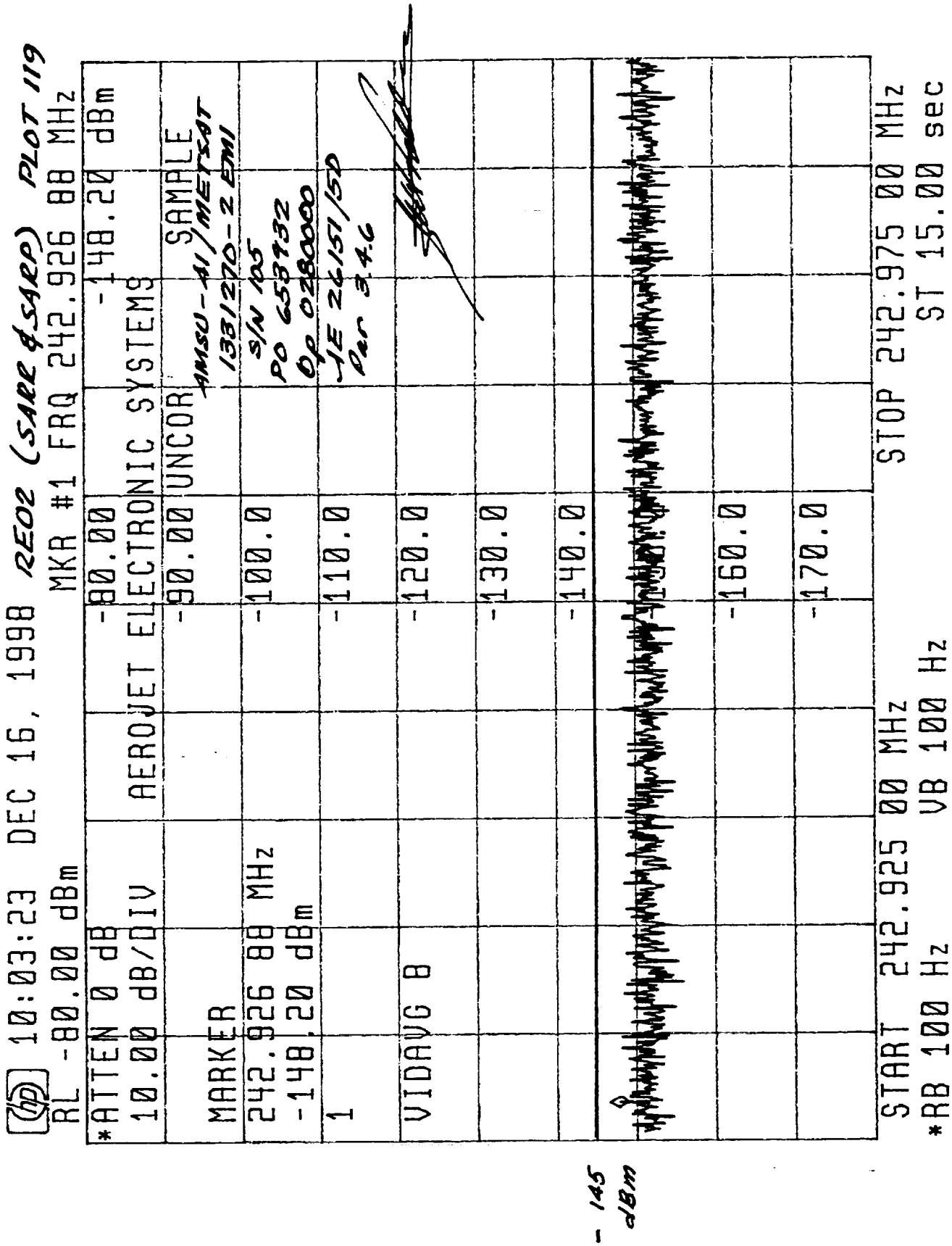

08:36:33 DEC 16, 1998 RE02 (SARR & SARP) PLOT 114
RL -80.00 dBm
MKR #1 FRQ 121.529 70 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-151.08 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 653932
Op 0280000
AE 24151/5D
Par 3.4.6
MARKER
121.529 70 MHz
-151.08 dBm
-100.0
1
-110.0
VIDAVG 5
-120.0
-130.0
-140.0
-145 dBm
-150.0
-160.0
-170.0
START 121.515 00 MHz
STOP 121.550 00 MHz
*RB 30.0 Hz
VB 30.0 Hz
ST 116.7 sec

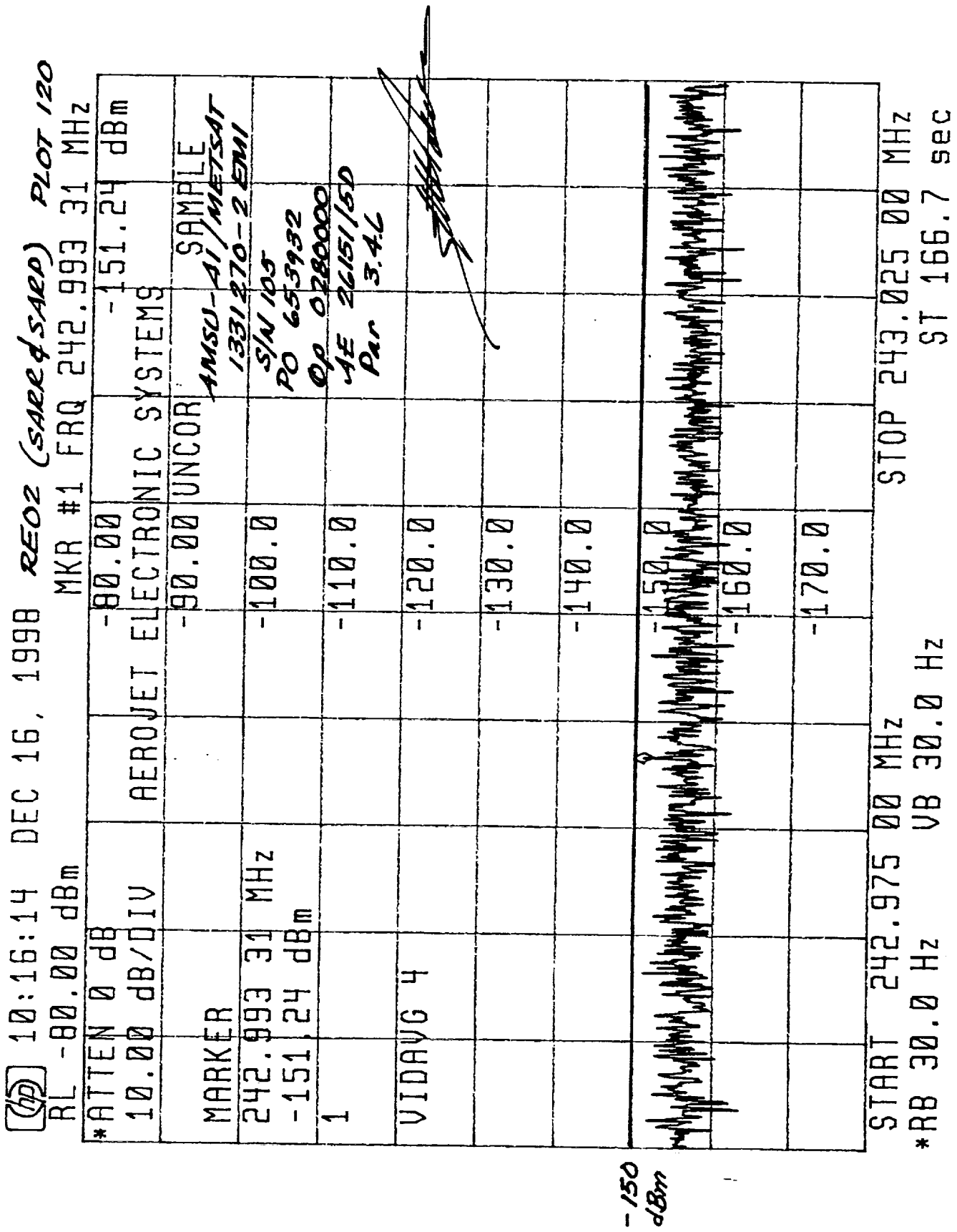

08:47:31 DEC 16, 1998 RE02 (SAEE & SAED) PLOT 115
MKR #1 FRQ 122.882 MHz
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
122.882 MHz
-125.90 dBm
1
VIDAVG 8
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-125.90 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
-125.90 dBm
SAMPLE
AMSU-A1/METSAT
133720-2 EMI
S/N 105
PO 653932
Par 0280000
1E 26151/SD
Par 3.4.6
START 121.550 MHz
*RB 1.00 kHz
VB 1.00 kHz
STOP 123.000 MHz
ST 4.350 sec

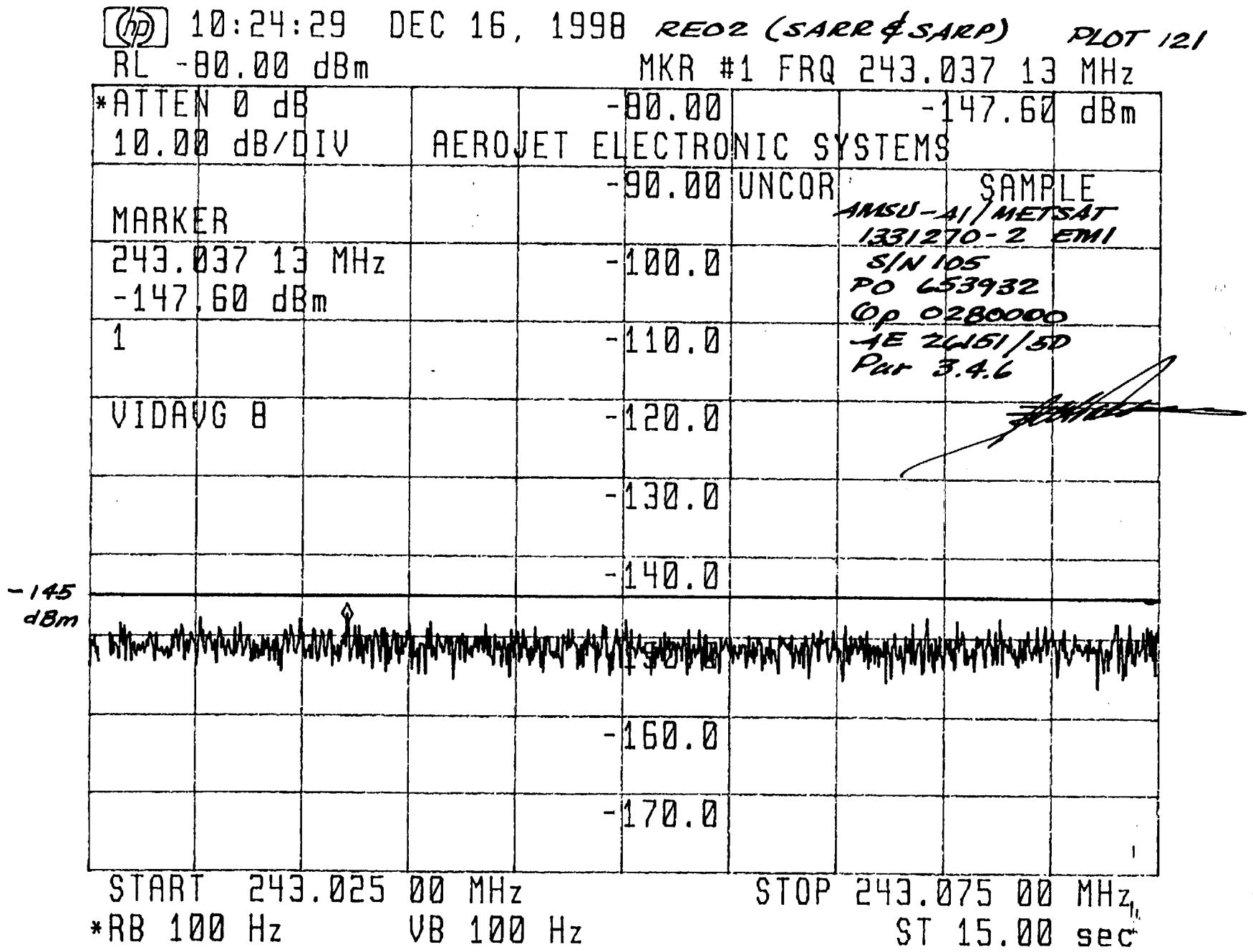

08:51:35 DEC 16, 1998 RE02 (SAEE & SAED) PLOT 116
MKR #1 FRQ 124.423 MHz
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
124.423 MHz
-117.34 dBm
1
VIDAVG B
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-117.34 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/METSAT
133720-2 EMI
S/N 105
PO 653932
Rp 0280000
AE 26151/150
Par 3.4.6
START 123.000 MHz
*RB 300 kHz
VB 300 kHz
STOP 125.000 MHz
ST 10.00 msec
-100 dBm

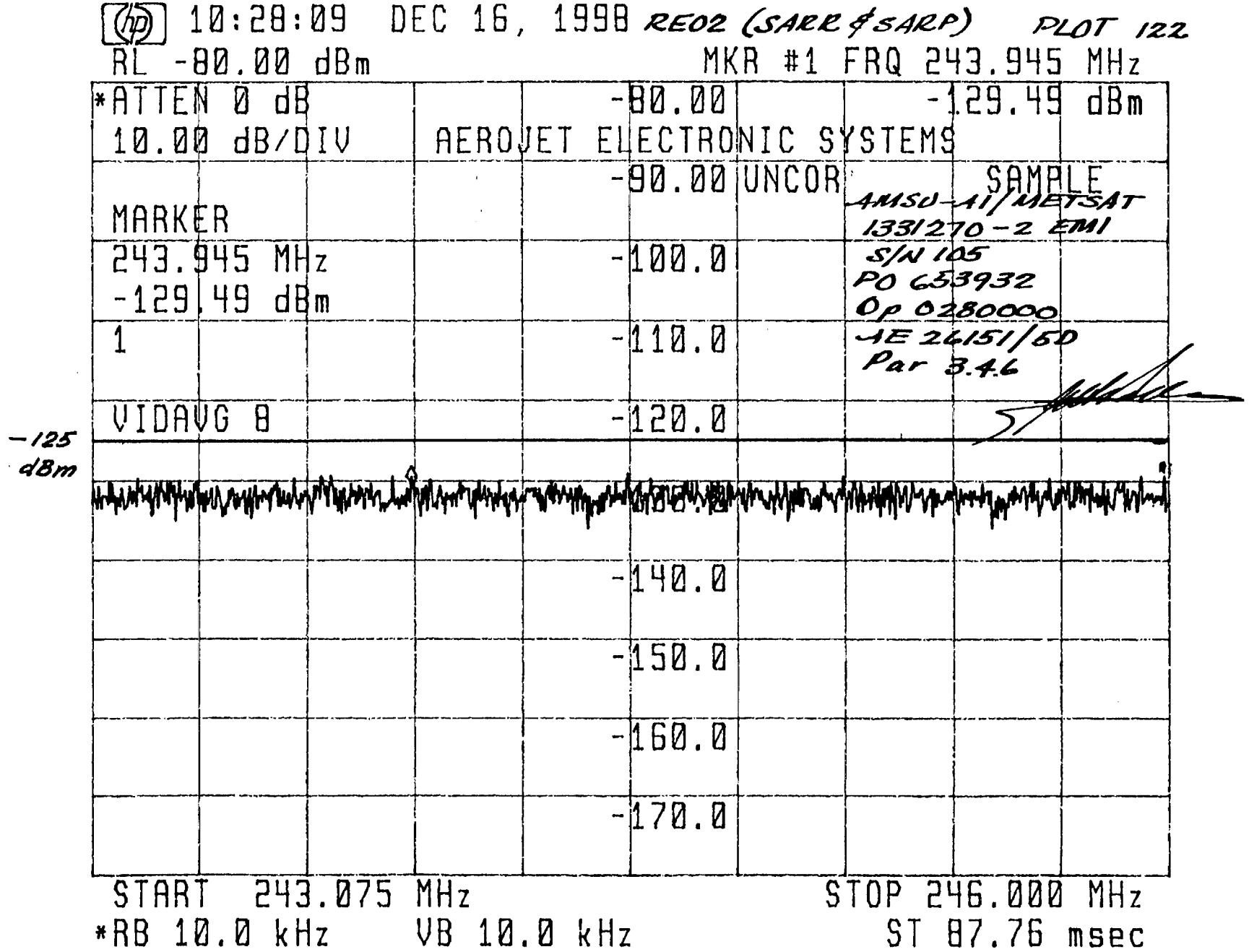

09:55:37 DEC 16, 1998
RE02 (SARR & SARP) PLOT 117
RL -80.00 dBm
MKR #1 FRQ 237.310 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-113.31 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
237.310 MHz
-113.31 dBm
-100 dBm
-100.0
-110.0
1
VIDAVG 8
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
AMSU-A1 / METSAT
1381270-2 EMI
S/N105
PO 458932
Op 0280000
AE 24151/5D
Par 3.4.6
START 236.000 MHz
STOP 240.000 MHz
*RB 300 kHz
VB 300 kHz
ST 10.00 msec

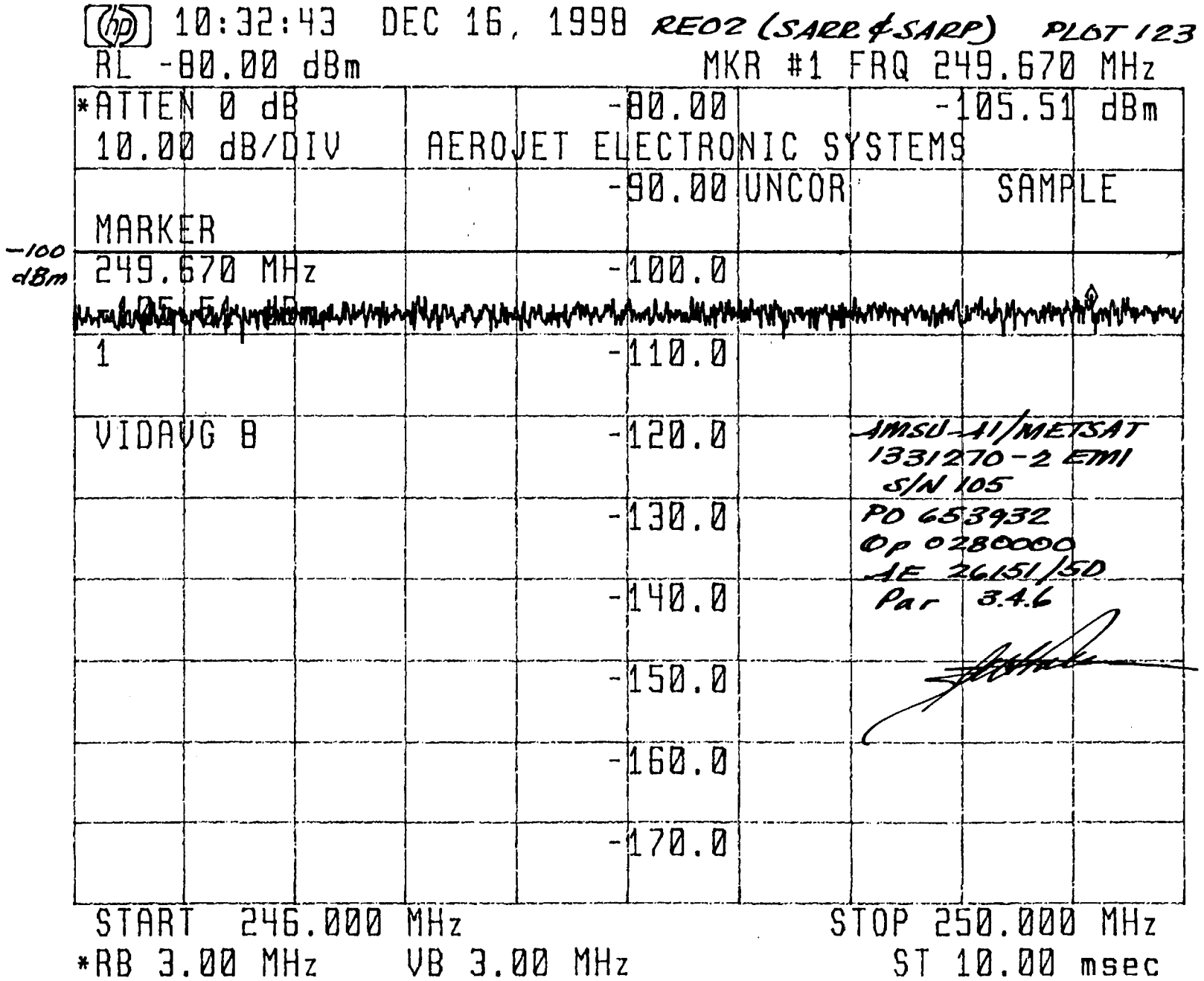

09:59:49 DEC 16, 1998 RE02 (SARR & SARP) PLOT 118
RL -80.00 dBm
MKR #1 FRQ 240.852 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-130.39 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
133270-2 EMI
S/N 105
PO 653932
Op 0280000
JE 26151/50
Par. 3.46
MARKER
240.852 MHz
-130.39 dBm
1
VIDAVG 8
-100.0
-110.0
-120.0
-125 dBm
-140.0
-150.0
-160.0
-170.0
START 240.000 MHz
STOP 242.925 MHz
*RB 10.0 kHz
VB 10.0 kHz
ST 87.76 msec

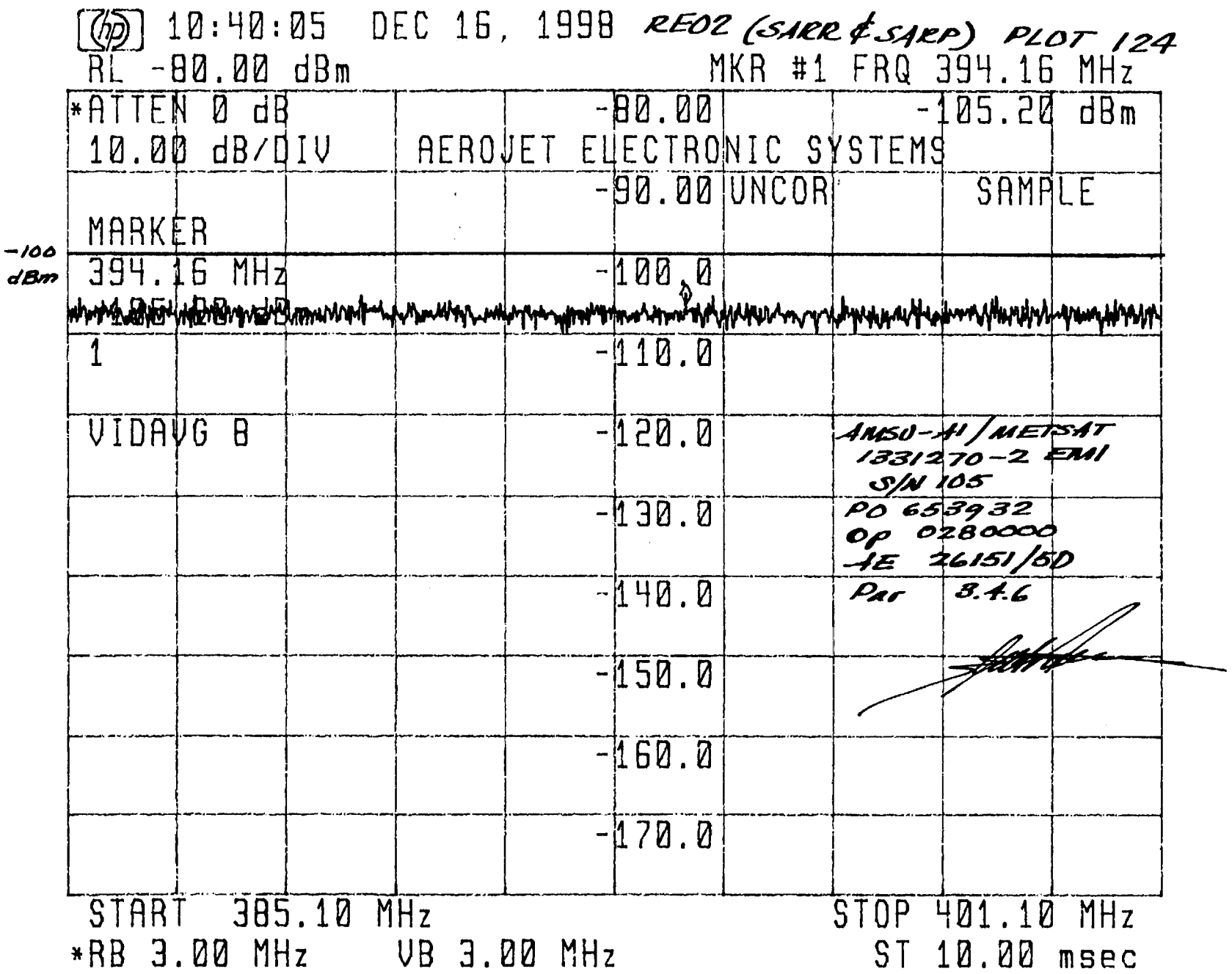

10:03:23 DEC 16, 1998 RE02 (SARE & SARD) PLOT 119
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
242.926 88 MHz
-148.20 dBm
1
VIDAVG B
MKR #1 FRQ 242.926 88 MHz
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-148.20 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/METSAT
1381270-2 EM1
S/N 105
PO 453432
Op 0280000
JE 24151/SD
Par 3.4.6
START 242.925 00 MHz
*RB 100 Hz
VB 100 Hz
STOP 242.975 00 MHz
ST 15.00 sec
-145 dBm

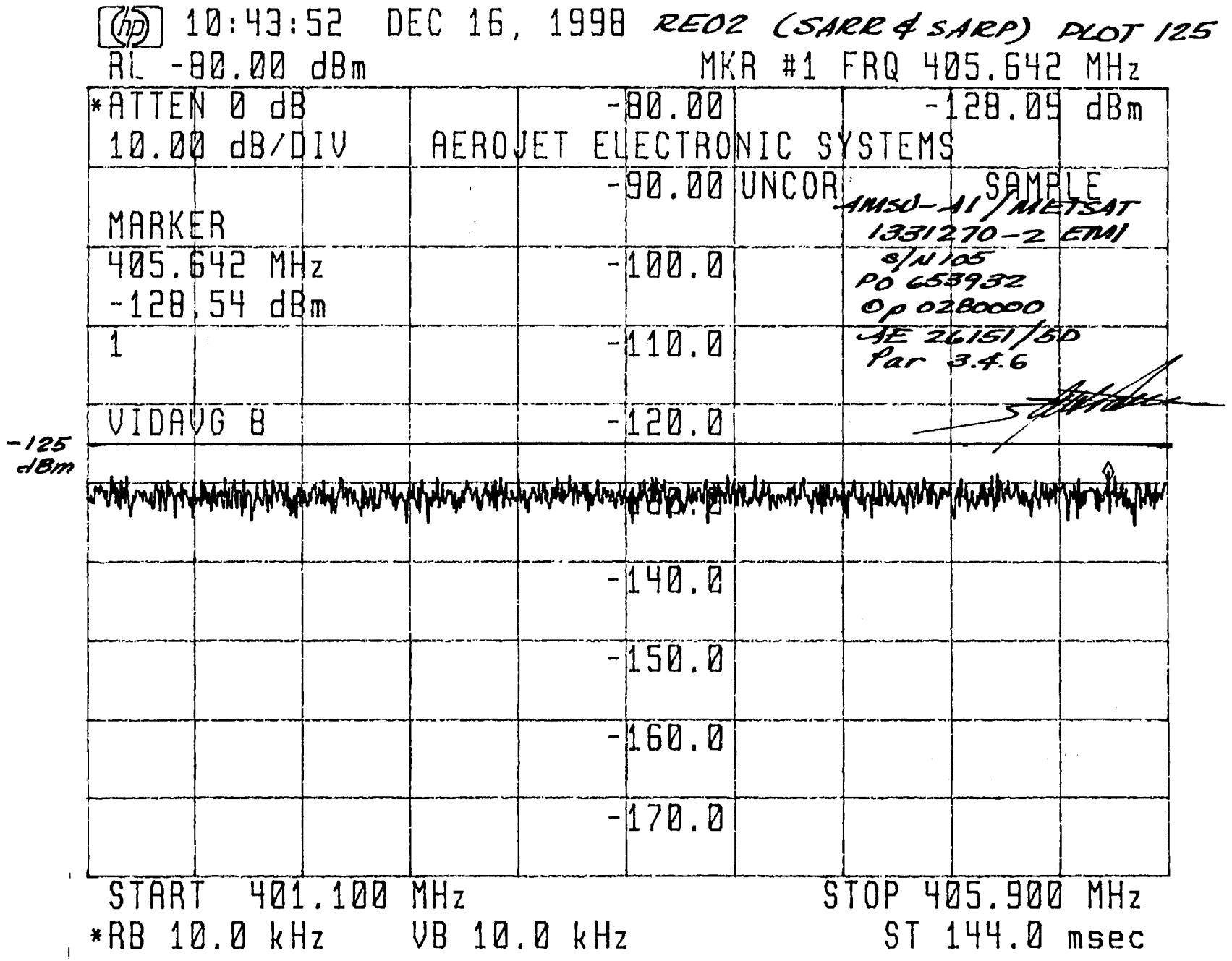

10:16:14 DEC 16, 1998 RE02 (SAE4/SAE0) PLOT 120
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
242.993 31 MHz
-151.24 dBm
1
VIDAVG 4
MKR #1 FRQ 242.993 31 MHz
-151.24 dBm
AEROJET ELECTRONIC SYSTEMS
SAMPLE
AMSU-A1/METSAT
1331270-2 EMI
S/N 105
PO 653932
Op 0280000
AE 26151/50
Par 3.4.2
-80.00
-90.00 UNCOR
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-150 dBm
START 242.975 00 MHz
*RB 30.0 Hz
VB 30.0 Hz
STOP 243.025 00 MHz
ST 166.7 sec

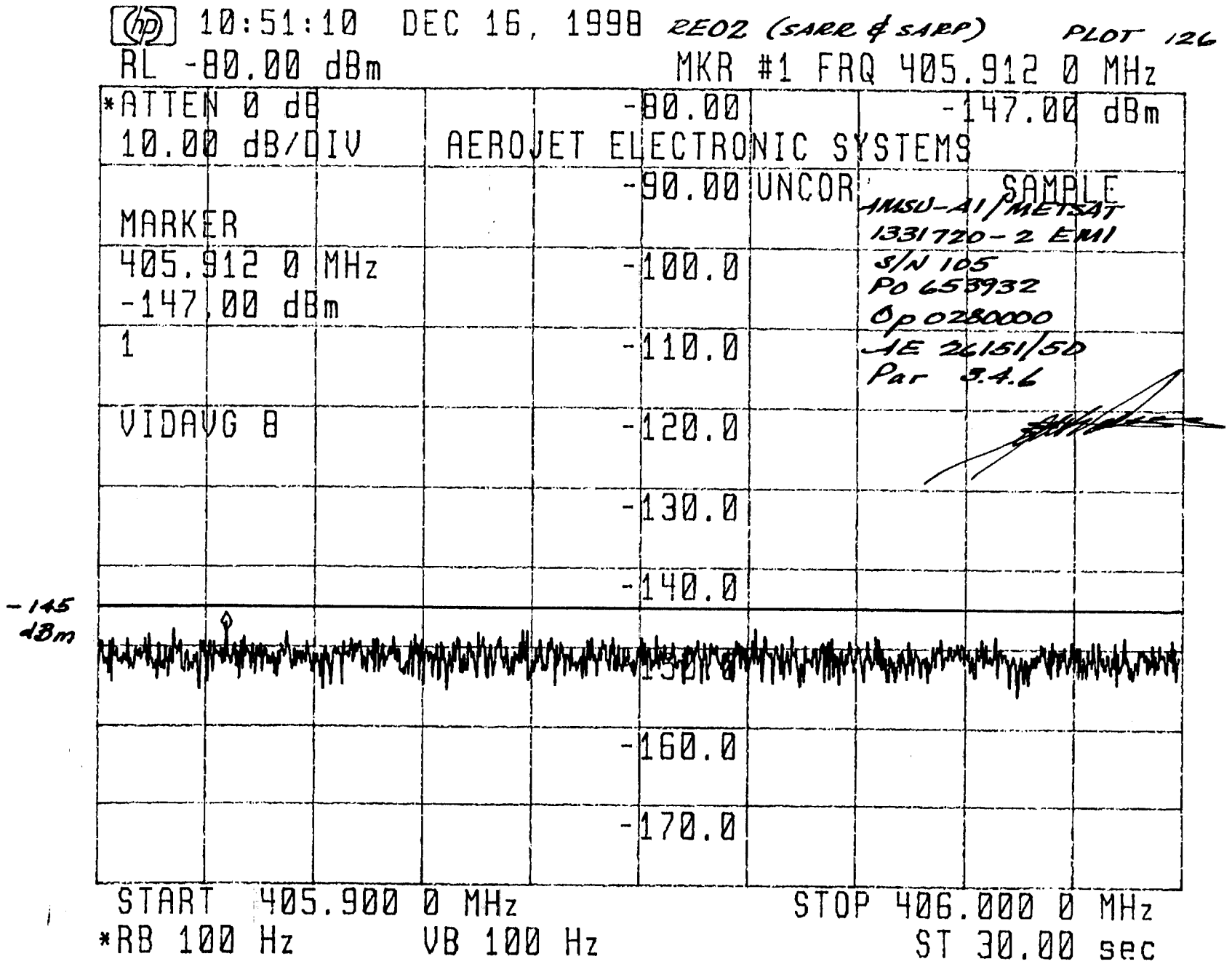

10:24:29 DEC 16, 1998 REO2 (SARR & SARP) PLOT 121
RL -80.00 dBm
MKR #1 FRQ 243.037 13 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-147.60 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
1331270-2 EMI
S/N 105
PO 453932
Op 0280000
4E 24151/SD
Par 3.4.6
MARKER
243.037 13 MHz
-147.60 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
-130.0
-140.0
-145 dBm
-150.0
-160.0
-170.0
START 243.025 00 MHz
STOP 243.075 00 MHz
*RB 100 Hz
VB 100 Hz
ST 15.00 sec

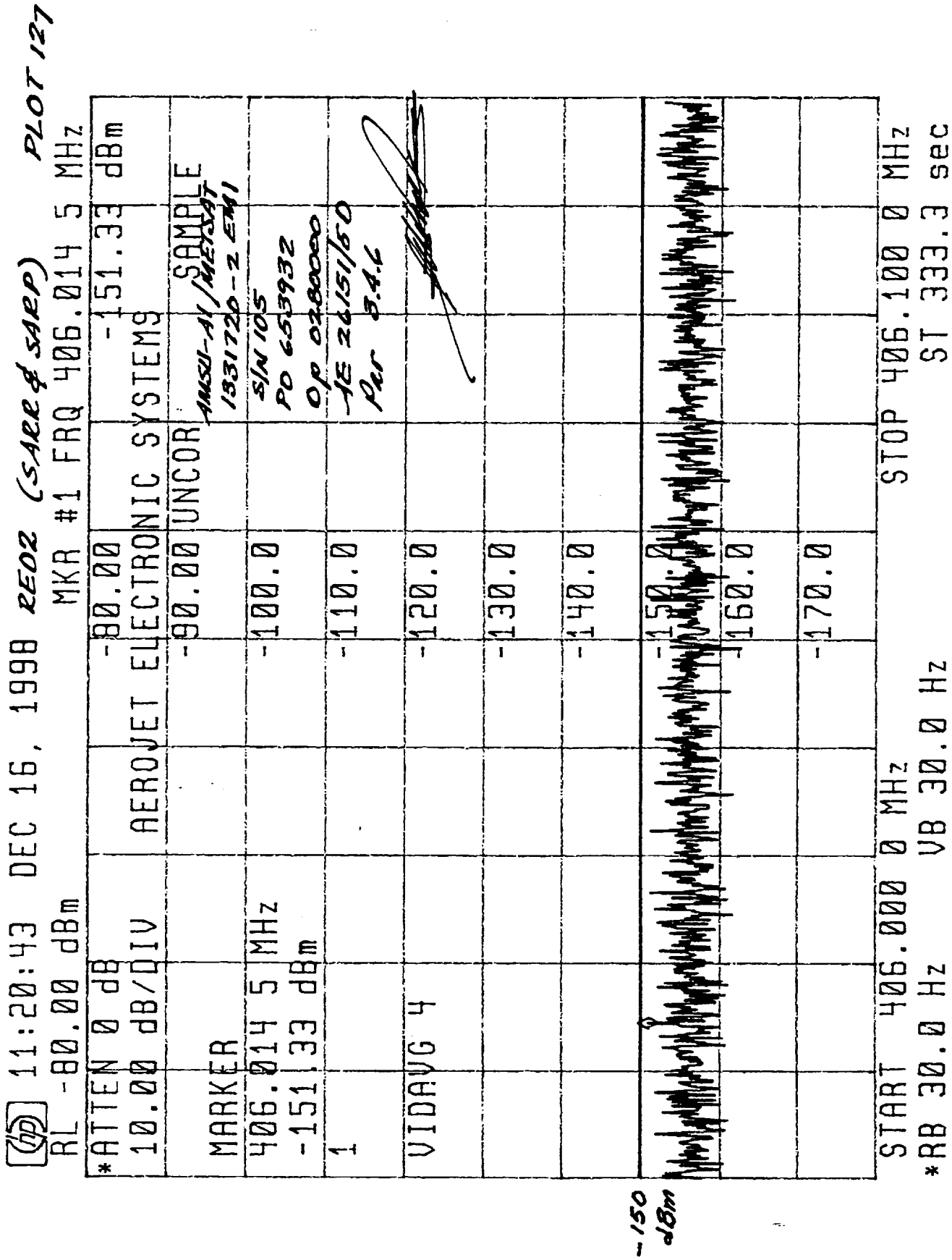

10:28:09 DEC 16, 1998 RE02 (SARR & SARP) PLOT 122
RL -80.00 dBm
MKR #1 FRQ 243.945 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-129.49 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
1331270-2 EMI
S/N 105
PO 633932
Op 0280000
AE 24151/60
Par 3.4.6
MARKER
243.945 MHz
-129.49 dBm
1
VIDAVG 8
-100.0
-110.0
-120.0
-125 dBm
-130.0
-140.0
-150.0
-160.0
-170.0
START 243.075 MHz
STOP 246.000 MHz
*RB 10.0 kHz
VB 10.0 kHz
ST 87.76 msec

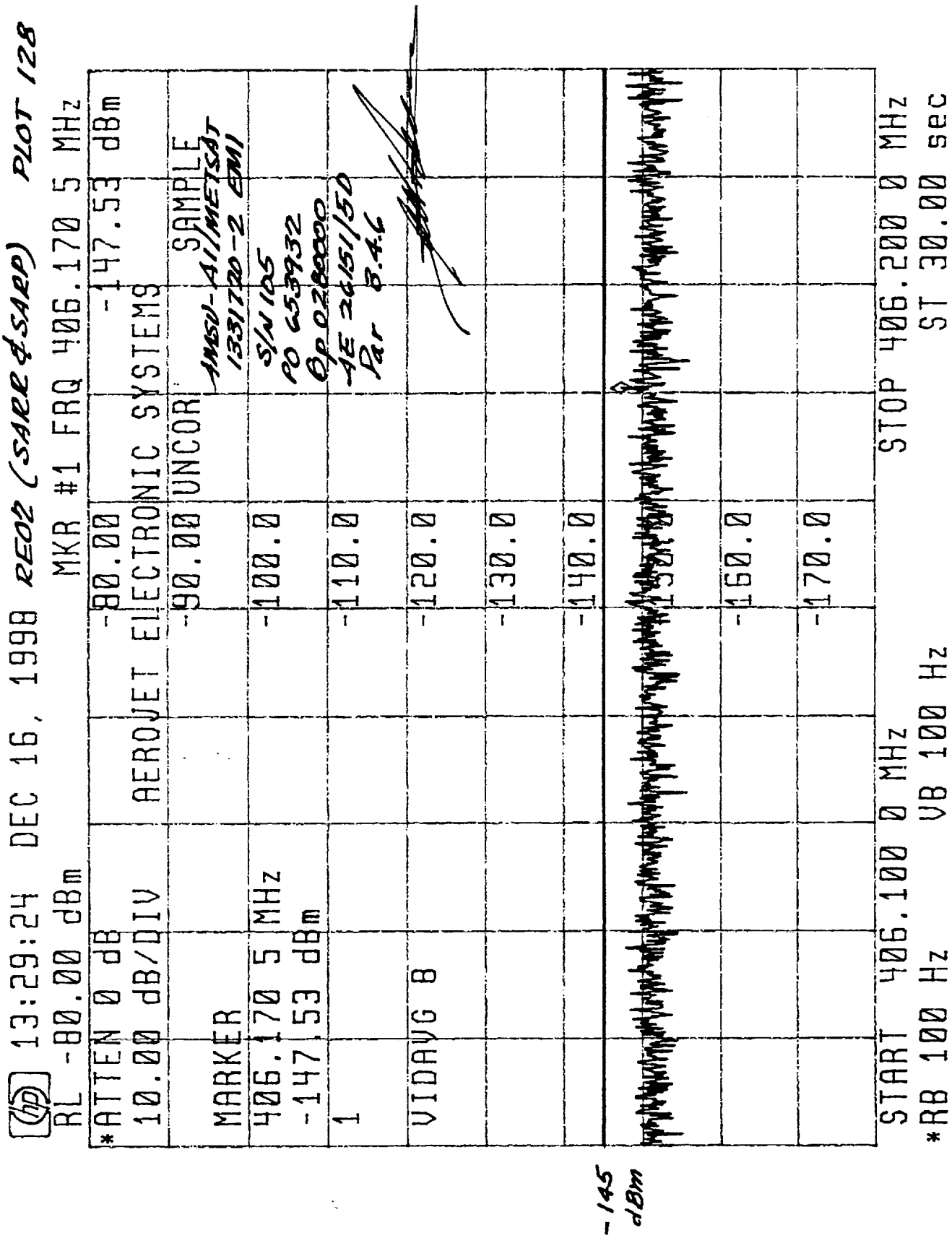

10:32:43 DEC 16, 1998 REO2 (SARR & SARP) PLOT 123
RL -80.00 dBm
MKR #1 FRQ 249.670 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-105.51 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
249.670 MHz
-100.0
-100 dBm
-105.51 dBm
1
-110.0
VIDAVG 8
-120.0
AMSU-A1/METSAT
1331270-2 EMI
S/N 105
-130.0
PO 653932
Op 0280000
AE 26151/5D
-140.0
Par 3.4.6
-150.0
-160.0
-170.0
START 246.000 MHz
STOP 250.000 MHz
*RB 3.00 MHz
VB 3.00 MHz
ST 10.00 msec

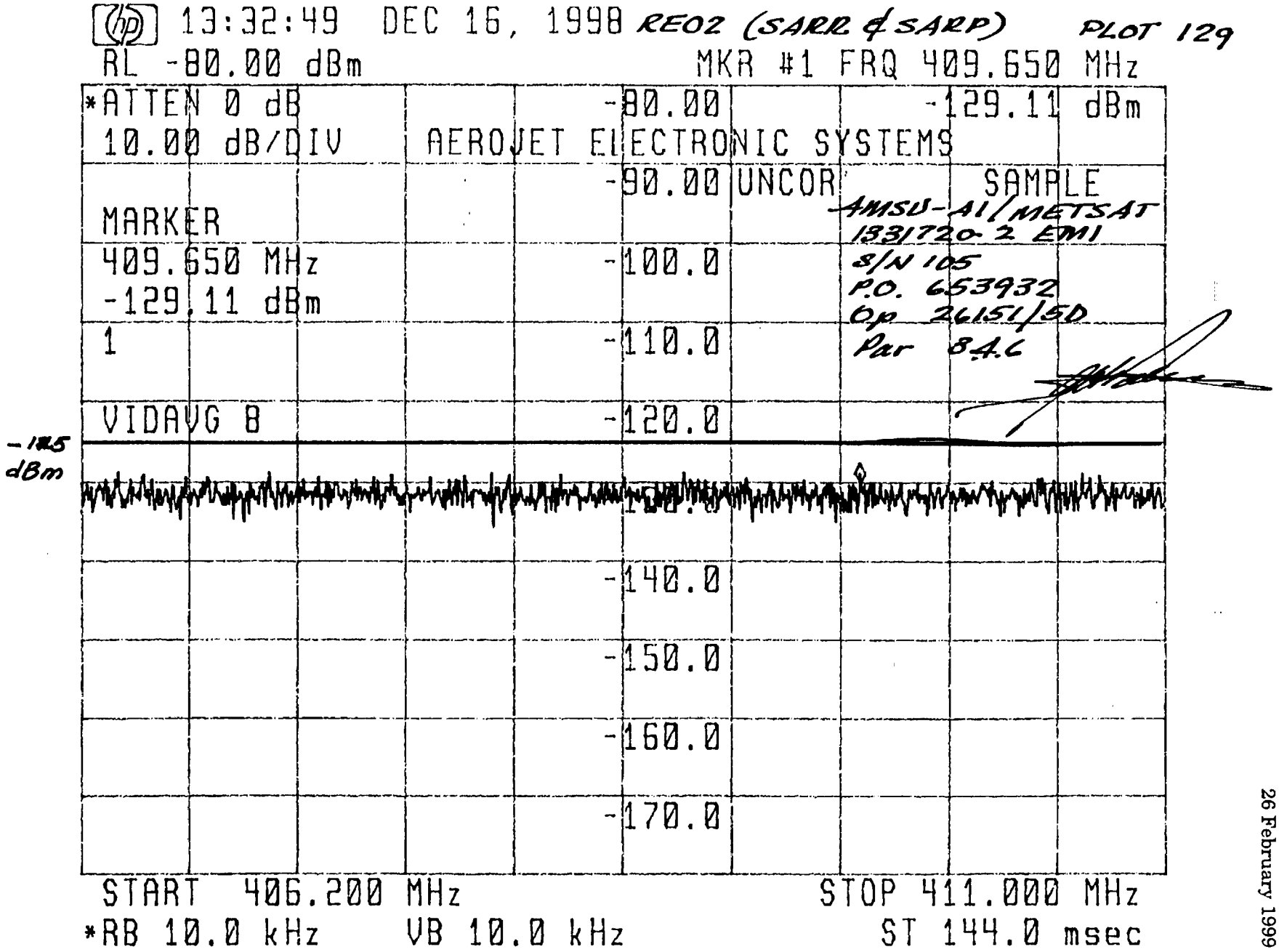

10:40:05 DEC 16, 1998 REO2 (SARR & SARP) PLOT 124
RL -80.00 dBm
MKR #1 FRQ 394.16 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-105.20 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
394.16 MHz
-100 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
AMSO-AI/MERSAT
1331270-2 EMI
S/N 105
-130.0
PO 653932
OP 0280000
AE 26151/6D
-140.0
PAR 3.4.6
-150.0
-160.0
-170.0
START 385.10 MHz
STOP 401.10 MHz
*RB 3.00 MHz
VB 3.00 MHz
ST 10.00 msec

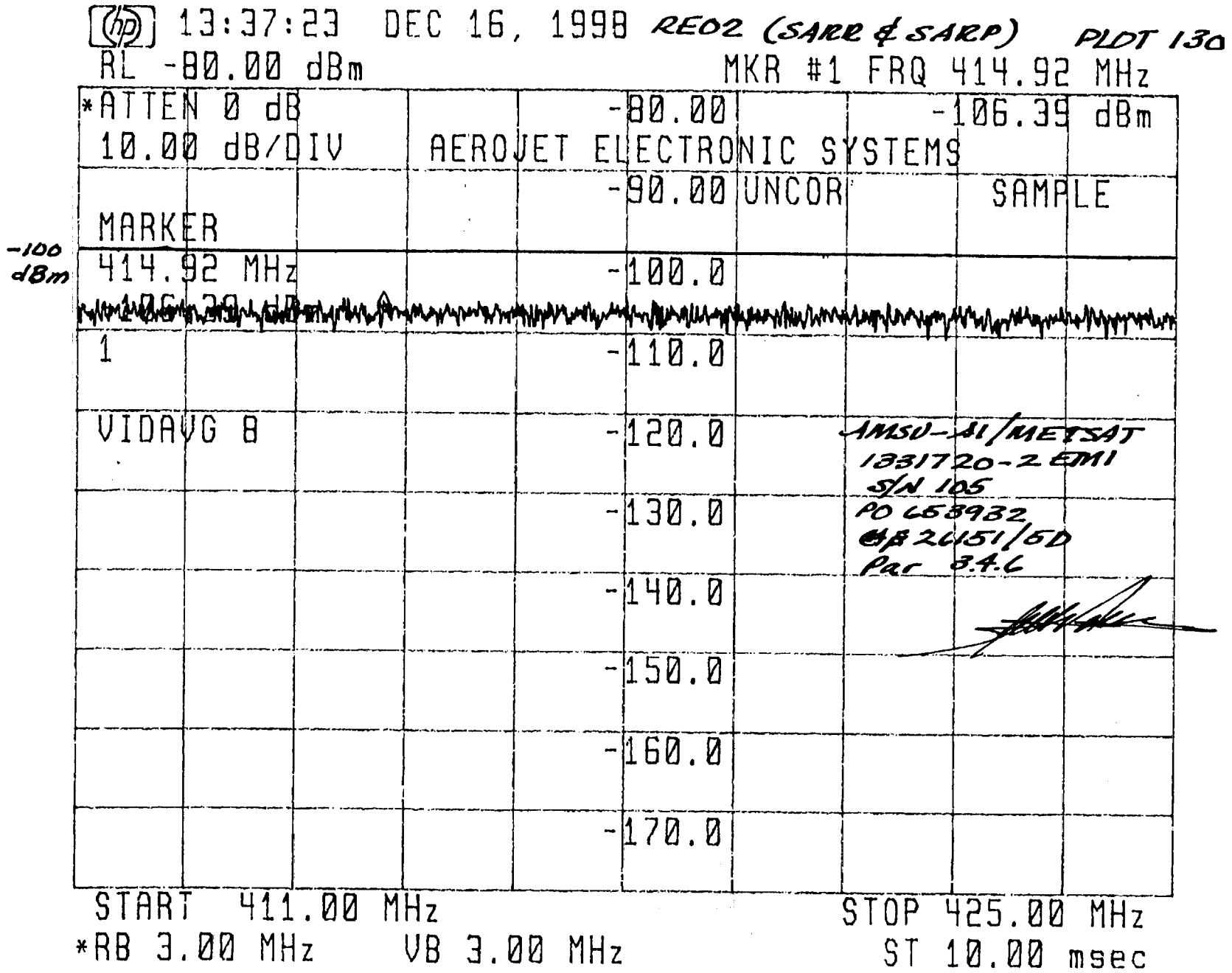

10:43:52 DEC 16, 1998 REO2 (SARR & SARP) PLOT 125
RL -80.00 dBm
MKR #1 FRQ 405.642 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-128.09 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331270-2 EMI
S/N 105
PO 653932
Op 0280000
AE 26151/5D
Par 3.4.6
MARKER
405.642 MHz
-128.54 dBm
-100.0
1
-110.0
VIDAVG B
-120.0
-125 dBm
-130.0
-140.0
-150.0
-160.0
-170.0
START 401.100 MHz
STOP 405.900 MHz
*RB 10.0 kHz
VB 10.0 kHz
ST 144.0 msec

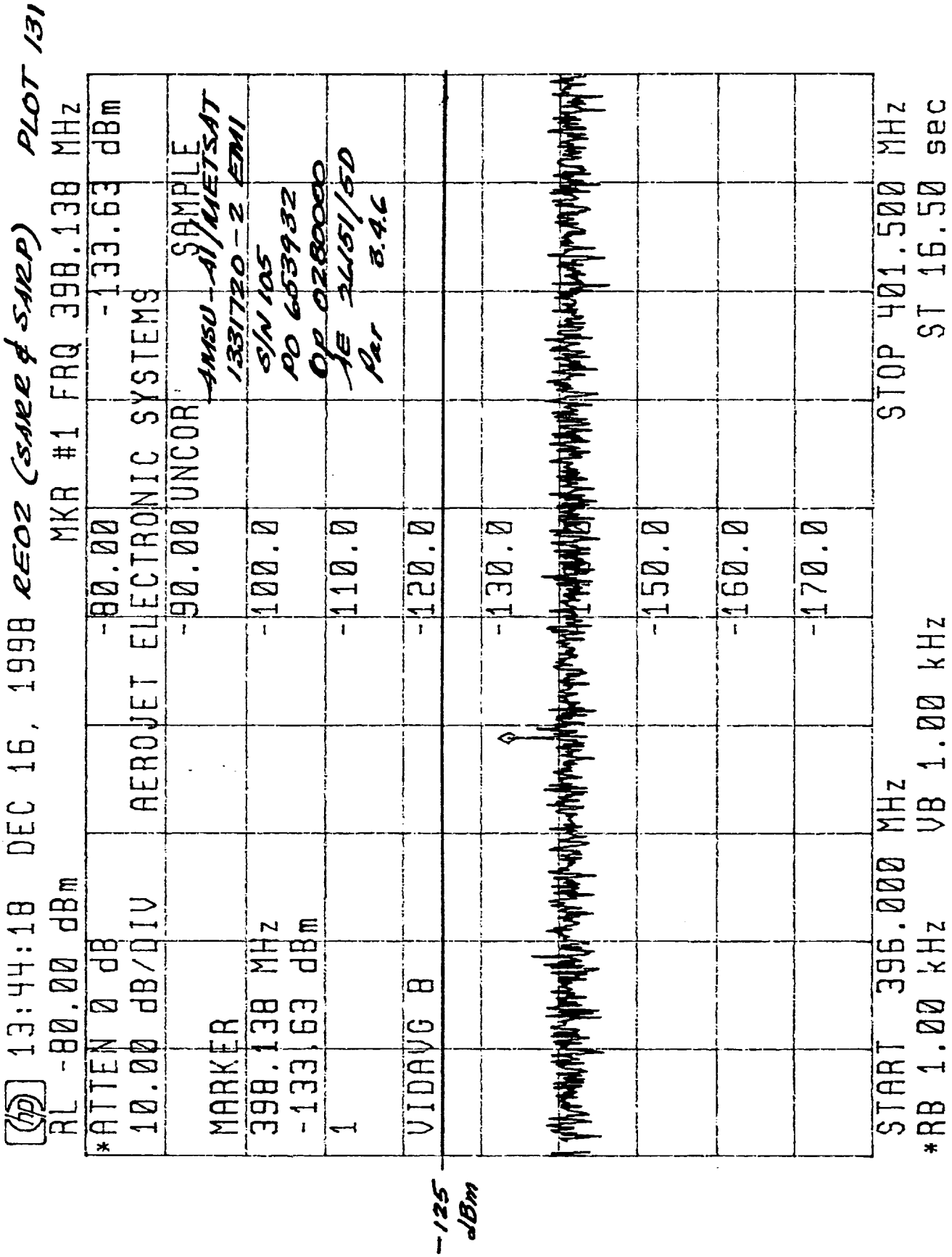

10:51:10 DEC 16, 1998 REO2 (SARR & SARP) PLOT 126
RL -80.00 dBm
MKR #1 FRQ 405.912 0 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-147.00 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 658932
Op 0280000
AE 26151/50
Par 3.4.6
MARKER
405.912 0 MHz
-147.00 dBm
1
VIDAVG 8
-100.0
-110.0
-120.0
-130.0
-140.0
-145 dBm
-150.0
-160.0
-170.0
START 405.900 0 MHz
STOP 406.000 0 MHz
*RB 100 Hz
VB 100 Hz
ST 30.00 sec

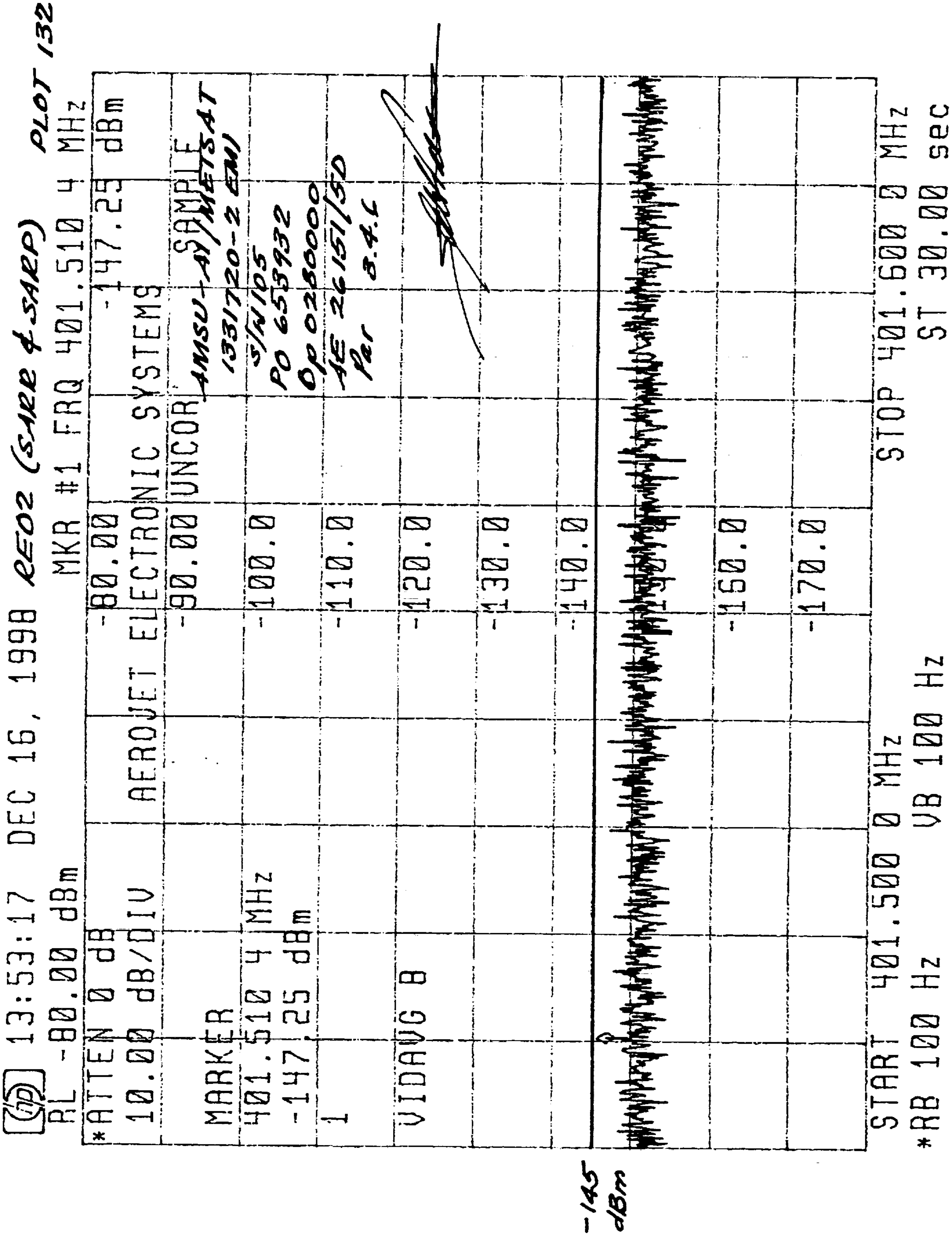

PLOT 127
11:20:43 DEC 16, 1998 RE02 (SAE & SAEP)
MKR #1 FRQ 406.014 5 MHz
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-151.33 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/MESSAT
1331726-2 EM1
S/N 105
PO 653932
Op 038000
JE 24151/50
Par 3.4.6
MARKER
406.014 5 MHz
-151.33 dBm
1
VIDAVG 4
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-150 dBm
START 406.000 0 MHz
*RB 30.0 Hz
VB 30.0 Hz
STOP 406.100 0 MHz
ST 333.3 sec

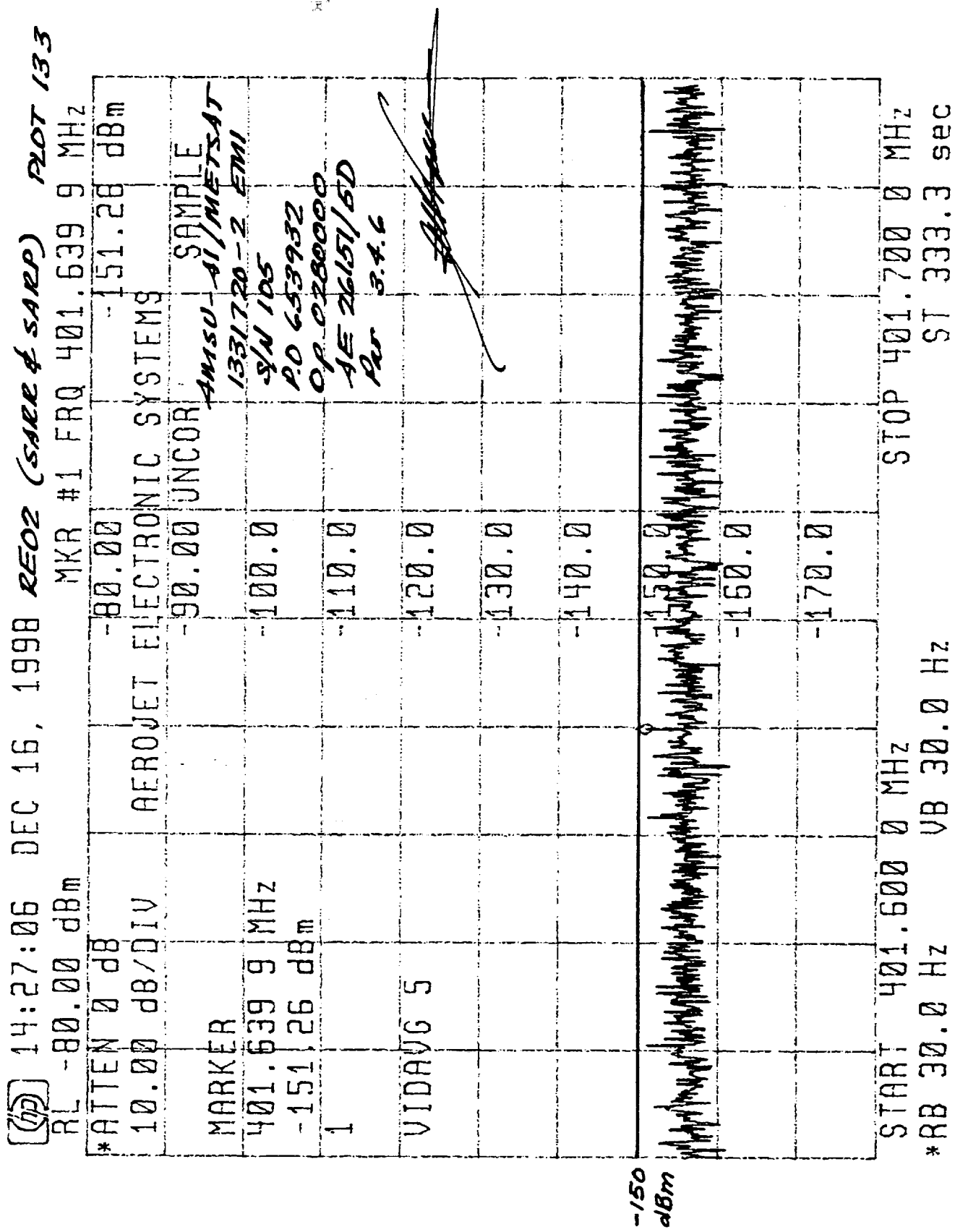

PLOT 128
RE02 (SAE&SAED)
13:29:24 DEC 16, 1998
MKR #1 FRQ 406.170 5 MHz
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
406.170 5 MHz
-147.53 dBm
1
VIDAVG 8
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-147.53 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
PO 459932
Op 0280000
AE 24151/50
Par 8.4.6
-145 dBm
START 406.100 0 MHz
*RB 100 Hz
VB 100 Hz
STOP 406.200 0 MHz
ST 30.00 sec

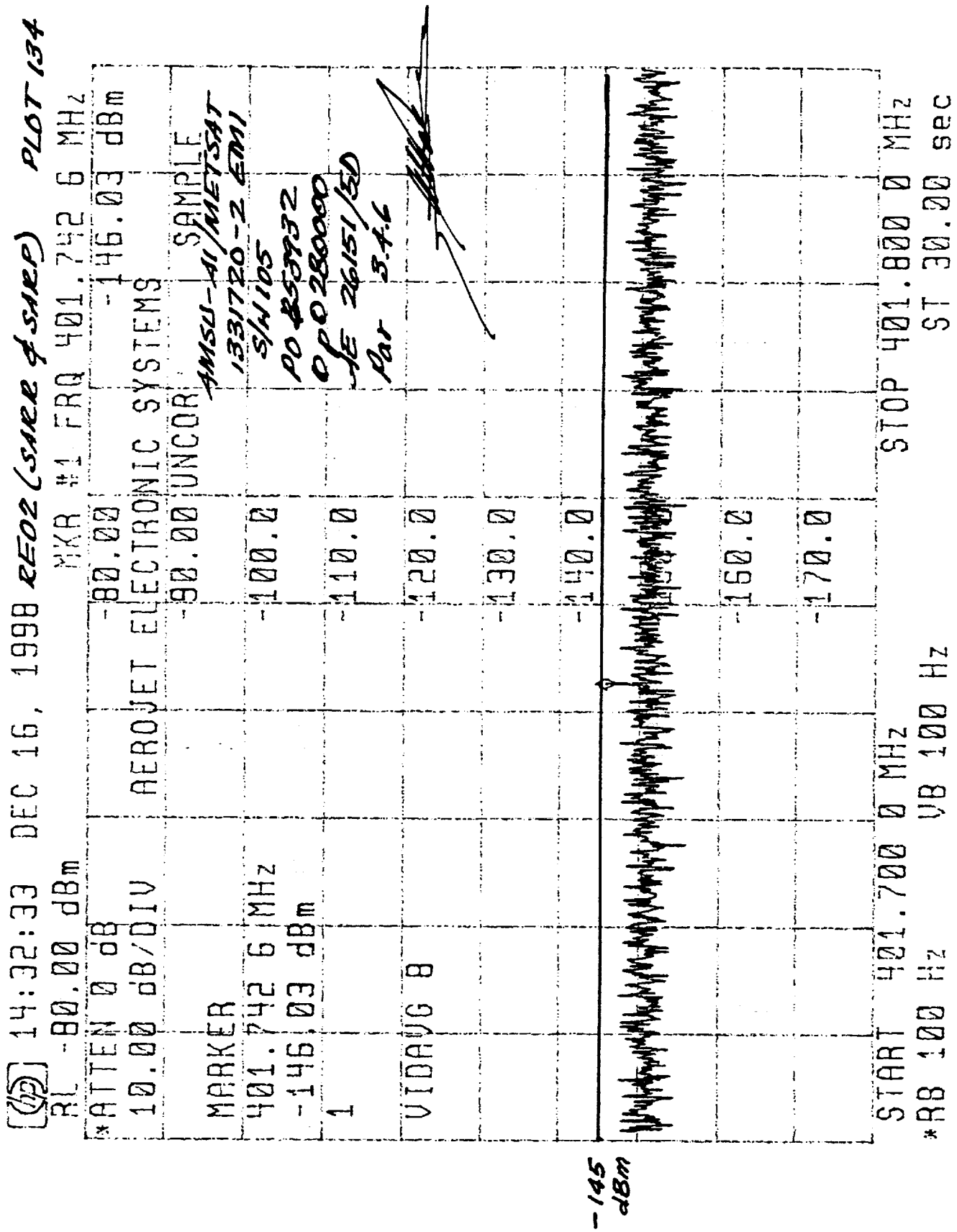

13:32:49 DEC 16, 1998 REO2 (SARR & SARP) PLOT 129
RL -80.00 dBm
MKR #1 FRQ 409.650 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-129.11 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
P.O. 653932
Op 26151/5D
Par 8.4.6
MARKER
409.650 MHz
-129.11 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
-115 dBm
-140.0
-150.0
-160.0
-170.0
START 406.200 MHz
STOP 411.000 MHz
*RB 10.0 kHz
VB 10.0 kHz
ST 144.0 msec

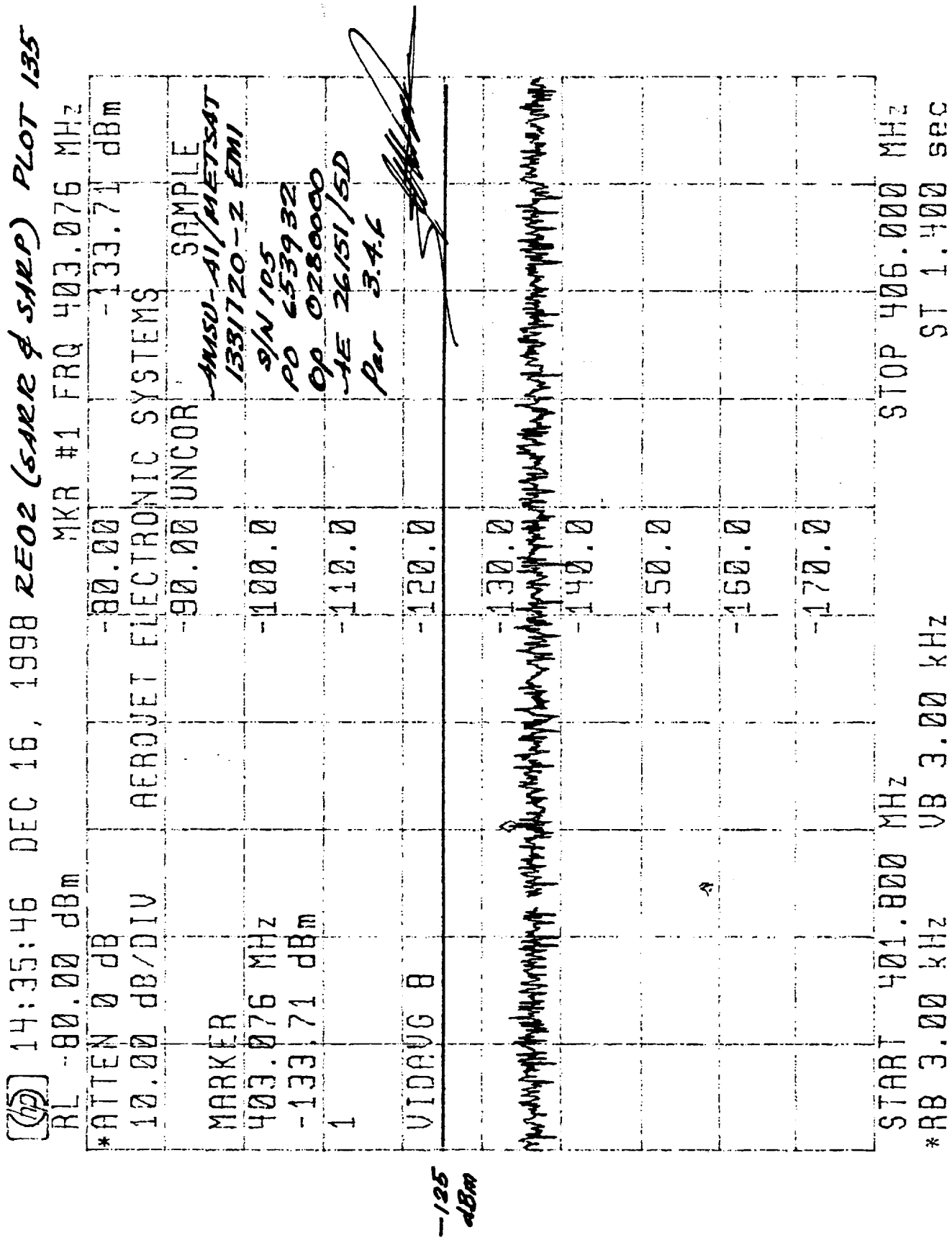

13:37:23 DEC 16, 1998 RE02 (SARR & SARP) PLOT 130
RL -80.00 dBm
MKR #1 FRQ 414.92 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-106.39 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
414.92 MHz
-100.0
-100 dBm
1
-110.0
VIDAVG 8
-120.0
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO C68932
@ β 20151/6D
Par 8.4.6
-130.0
-140.0
-150.0
-160.0
-170.0
START 411.00 MHz
STOP 425.00 MHz
*RB 3.00 MHz
VB 3.00 MHz
ST 10.00 msec

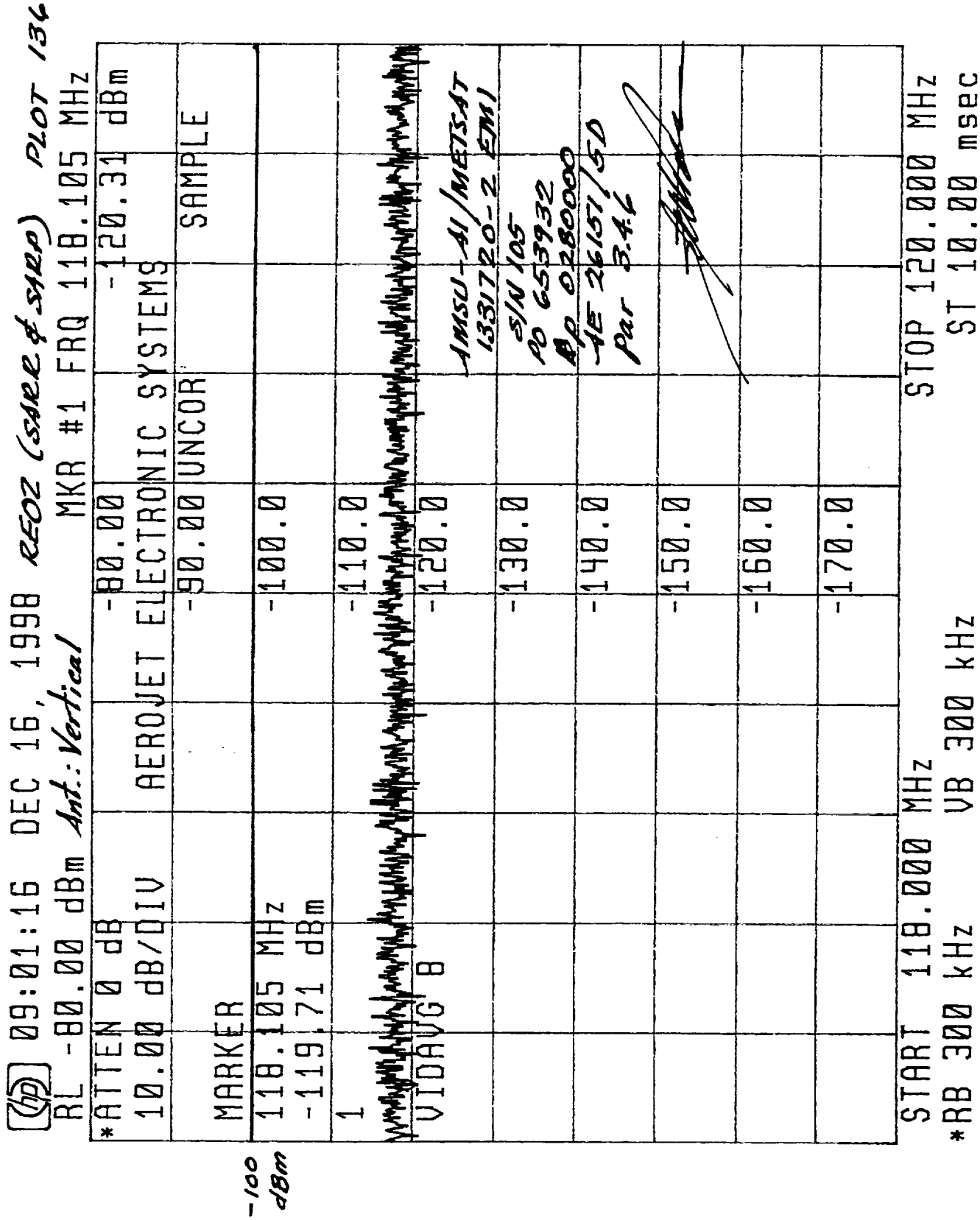

PLOT 131
13:44:18 DEC 16, 1998 REO2 (Save & Recall)
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
398.138 MHz
-133.63 dBm
1
VIDAVG B
MKR #1 FRQ 398.138 MHz
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-133.63 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AN/SU-A1/METSAT
1331720-2 EMI
S/N 105
PO 653932
OP 028000
TE 24151/50
PAR 8.4.6
-135 dBm
START 396.000 MHz
*RB 1.00 kHz
VB 1.00 kHz
STOP 401.500 MHz
ST 16.50 sec

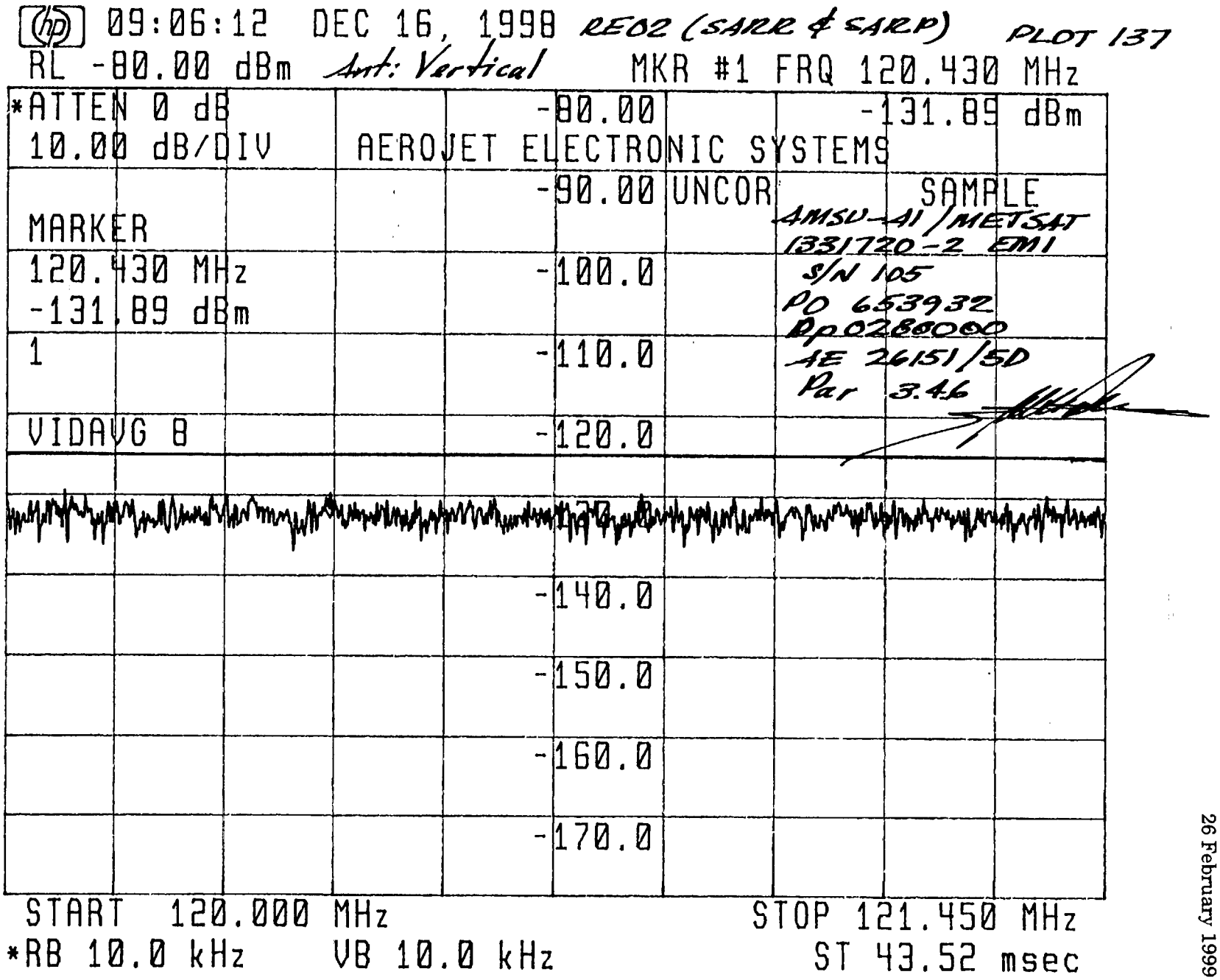

13:53:17 DEC 16, 1998 RE02 (SARR & SARP) PLOT 132
RL -80.00 dBm
MKR #1 FRQ 401.510 4 MHz
-147.25 dBm
*ATTEN 0 dB
10.00 dB/DIV
AEROJET ELECTRONIC SYSTEMS
UNCOR SAMPLE
MARKER
401.510 4 MHz
-147.25 dBm
1
VIDAVG B
AMSU-A1/METSAT
(1331720-2 EM)
S/N 105
PO 653932
Op 0280000
AE 26151/SD
Par 3.4.C
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
START 401.500 0 MHz
STOP 401.600 0 MHz
*RB 100 Hz
VB 100 Hz
ST 30.00 sec
-145 dBm

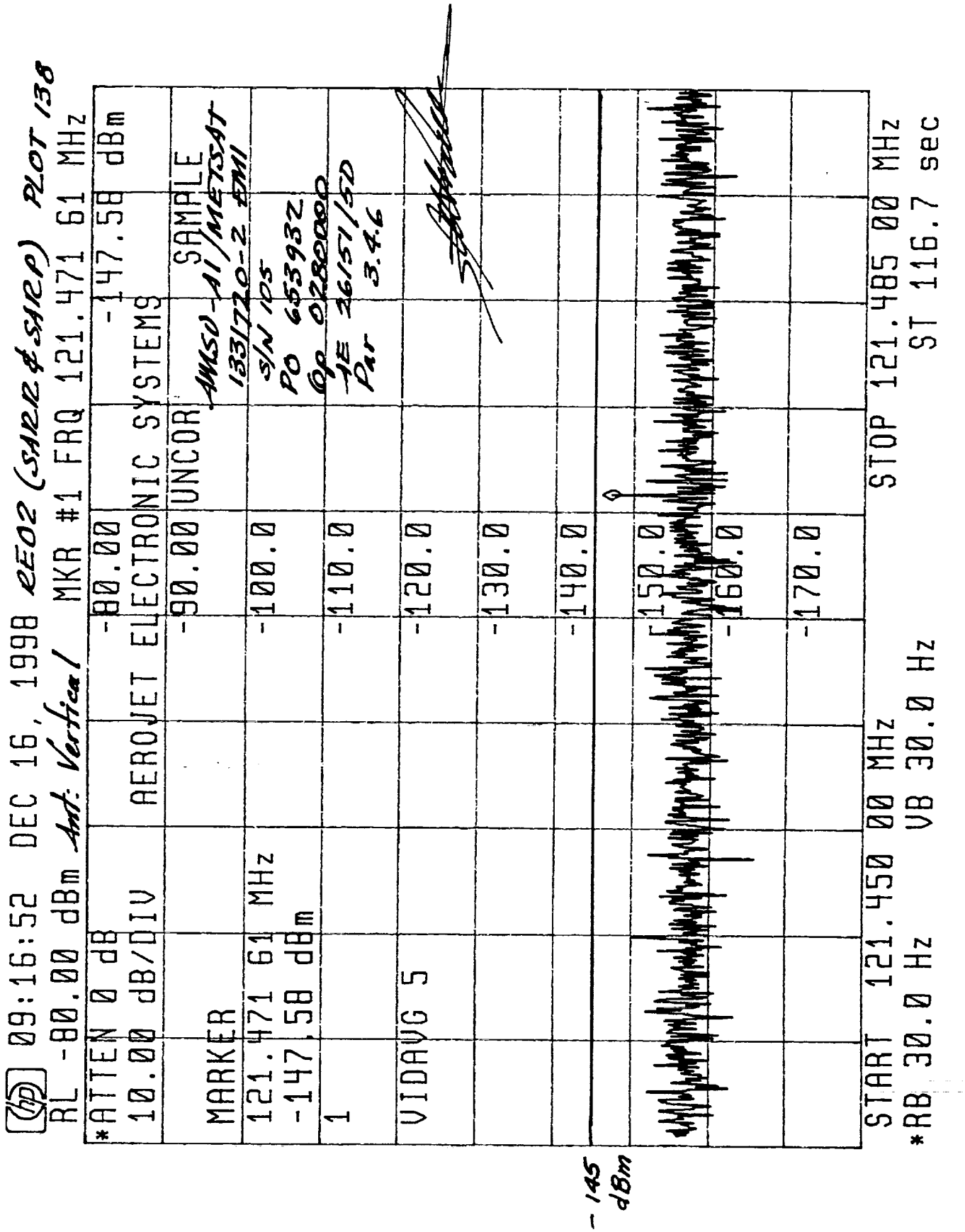

14:27:06 DEC 16, 1998 RE02 (SAE & SARP) PLOT 133
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
401.639 9 MHz
-151.26 dBm
1
VIDAVG 5
MKR #1 FRQ 401.639 9 MHz
-80.00
-151.28 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 453932
OP 0280000
SE 26151/5D
Par 3.4.6
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-150 dBm
START 401.600 0 MHz
*RB 30.0 Hz
VB 30.0 Hz
STOP 401.700 0 MHz
ST 333.3 sec

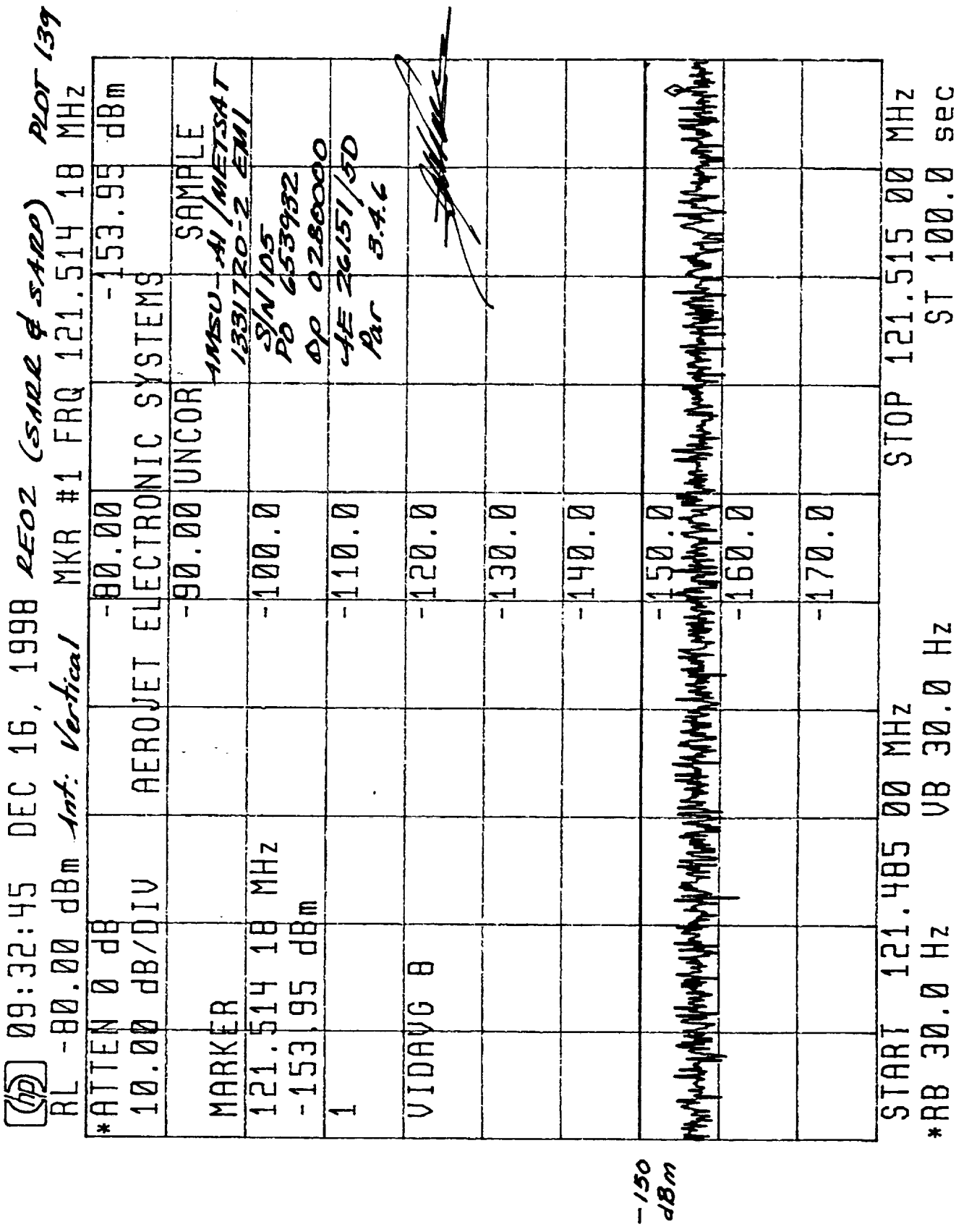

14:32:33 DEC 16, 1998 RE02 (SAME 4 SWEP) PLOT 134
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
401.742 6 MHz
-146.03 dBm
1
VIDAVG 8
MKR #1 FRQ 401.742 6 MHz
-80.00
-146.03 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
133720-2 EMI
S/N105
PO #53732
OP 0280000
SE 26151/SD
PAR 5.4.2
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
START 401.700 0 MHz
*RB 100 Hz
VB 100 Hz
STOP 401.800 0 MHz
ST 30.00 sec
-145 dBm

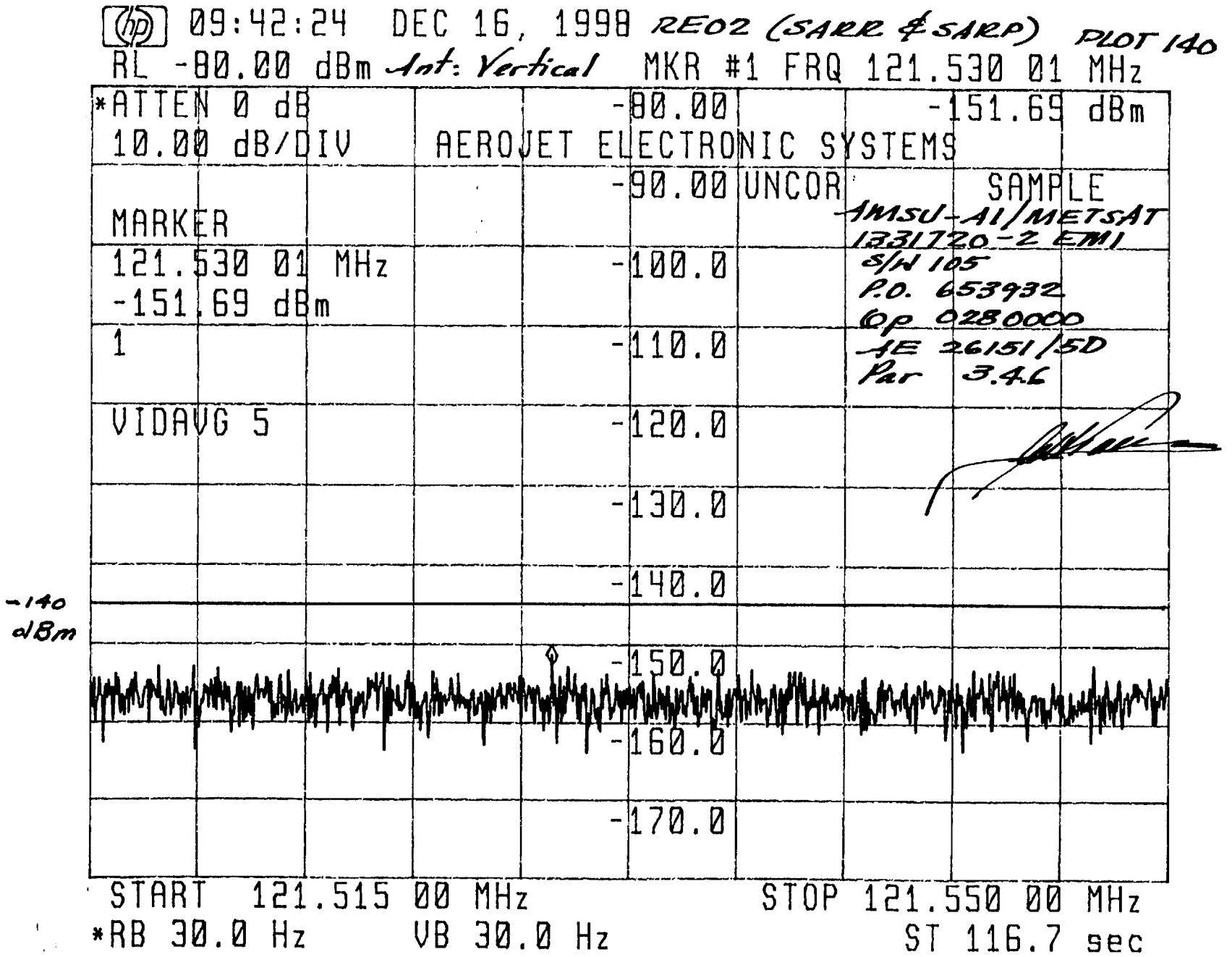

RE02 (SAMR & SAMP) PLOT 135
14:35:46 DEC 16, 1998
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MKR #1 FRQ 403.076 MHz
-133.71 dBm
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/METSAT
133170-2 EMI
S/N 105
PO 653932
OP 0280000
SE 26151/SD
Per 3.4.2
MARKER
403.076 MHz
-133.71 dBm
1
VIDAVG B
START 401.800 MHz
*RB 3.00 kHz
VB 3.00 kHz
STOP 406.000 MHz
ST 1.400 sec
-125 dBm

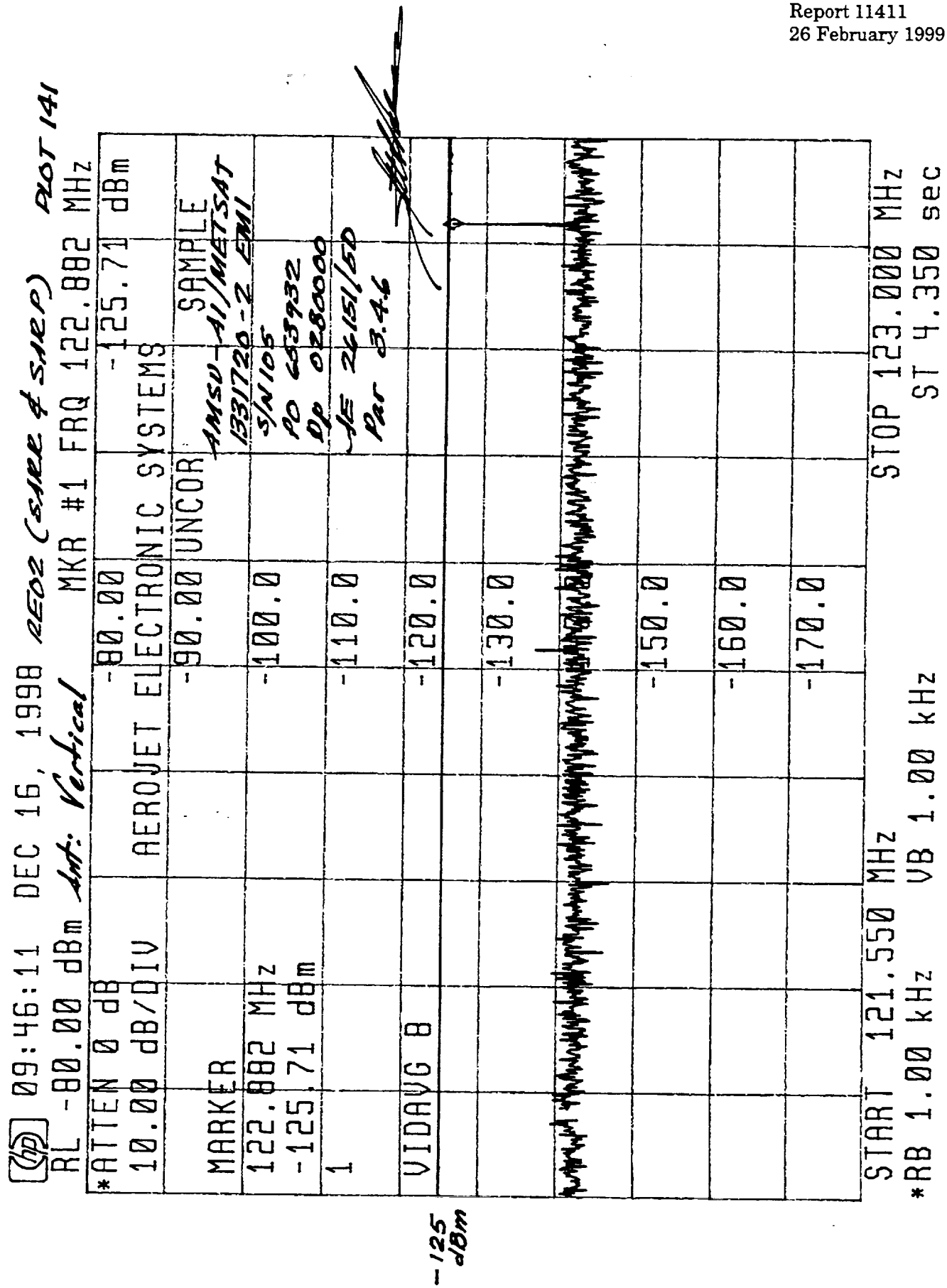

09:01:16 DEC 16, 1998 RE02 (same f span) PLOT 136
RL -80.00 dBm Ant.: Vertical
MKR #1 FRQ 118.105 MHz
*ATTEN 0 dB
10.00 dB/DIV
MARKER
1
118.105 MHz
-119.71 dBm
VIDAVG 8
AEROJET ELECTRONIC SYSTEMS
-80.00
-90.00 UNCOR
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-120.31 dBm
SAMPLE
IMSU-AI/METSAT
1331720-2 EM1
S/N 105
PO 653932
MP 0280000
AE 26151/SD
Par 3.4.1
START 118.000 MHz
*RB 300 kHz
VB 300 kHz
STOP 120.000 MHz
ST 10.00 msec
-100 dBm

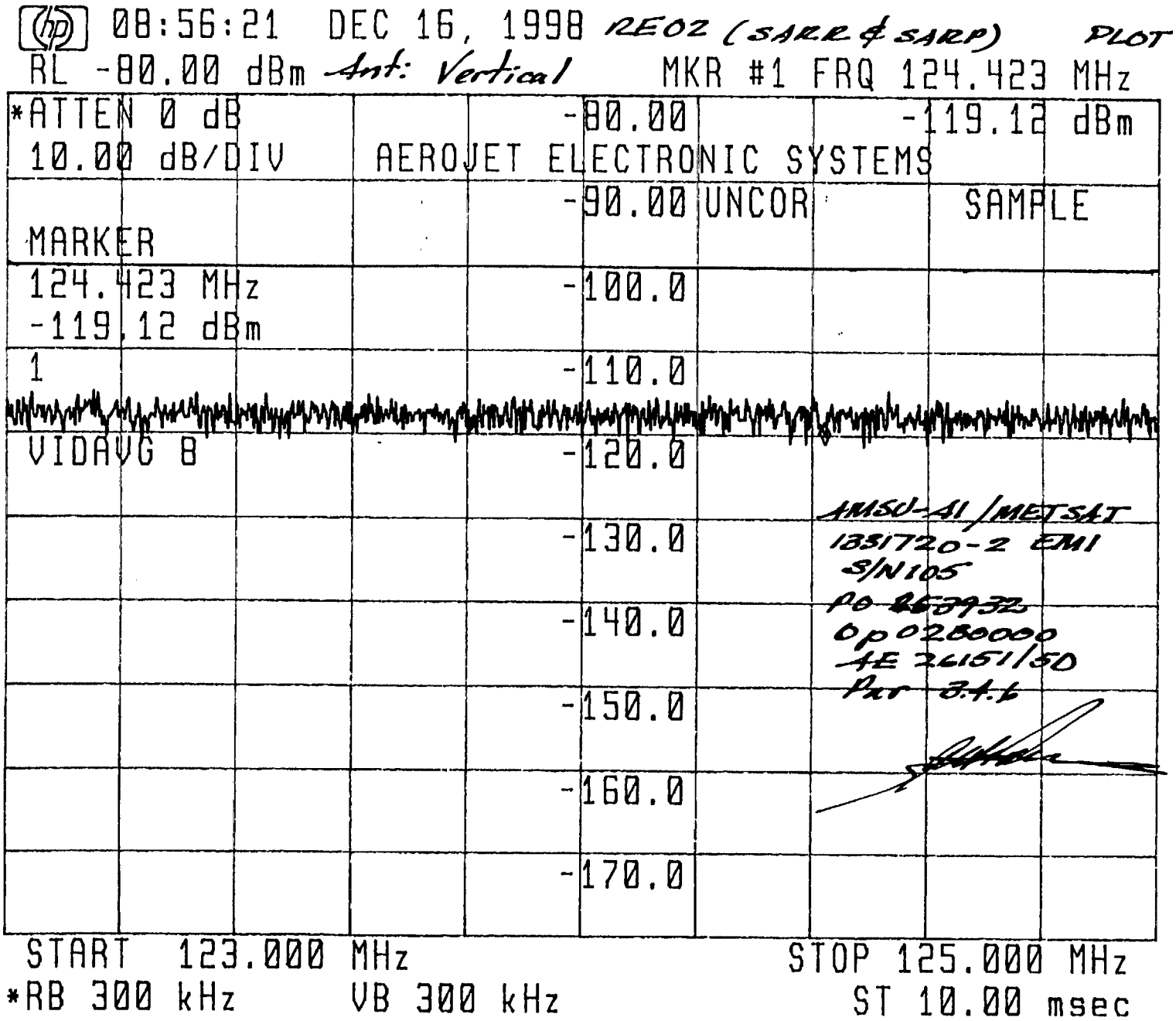

09:06:12 DEC 16, 1998 RE02 (SARR & SARP) PLOT 137
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 120.430 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-131.89 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
PO 653932
Dp0280000
AE 26151/5D
Par 3.4.6
MARKER
120.430 MHz
-131.89 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
-125 dBm
-140.0
-150.0
-160.0
-170.0
START 120.000 MHz
STOP 121.450 MHz
*RB 10.0 kHz
VB 10.0 kHz
ST 43.52 msec

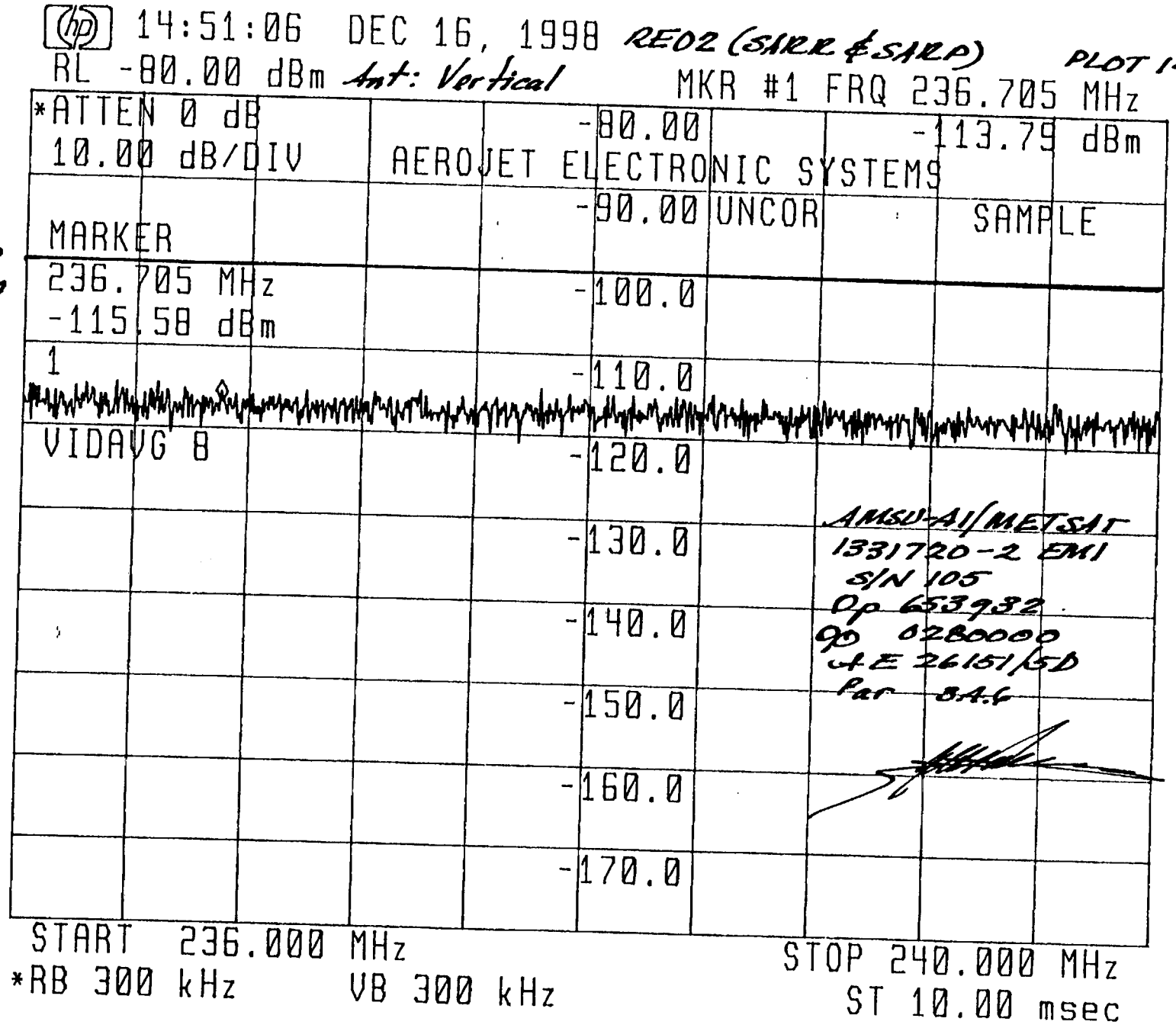

09:16:52 DEC 16, 1998 2E02 (SHR2 & SHR0) PLOT 138
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 121.471 61 MHz
*ATTEN 0 dB
10.00 dB/DIV
MARKER
121.471 61 MHz
-147.58 dBm
1
VIDAVG 5
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-147.58 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/MEASAT
133122-2 EMI
S/N 105
PO 653932
OP 0280000
4E 26151/50
Par 3.4.6
START 121.450 00 MHz
*RB 30.0 Hz
VB 30.0 Hz
STOP 121.485 00 MHz
ST 116.7 sec
-145 dBm

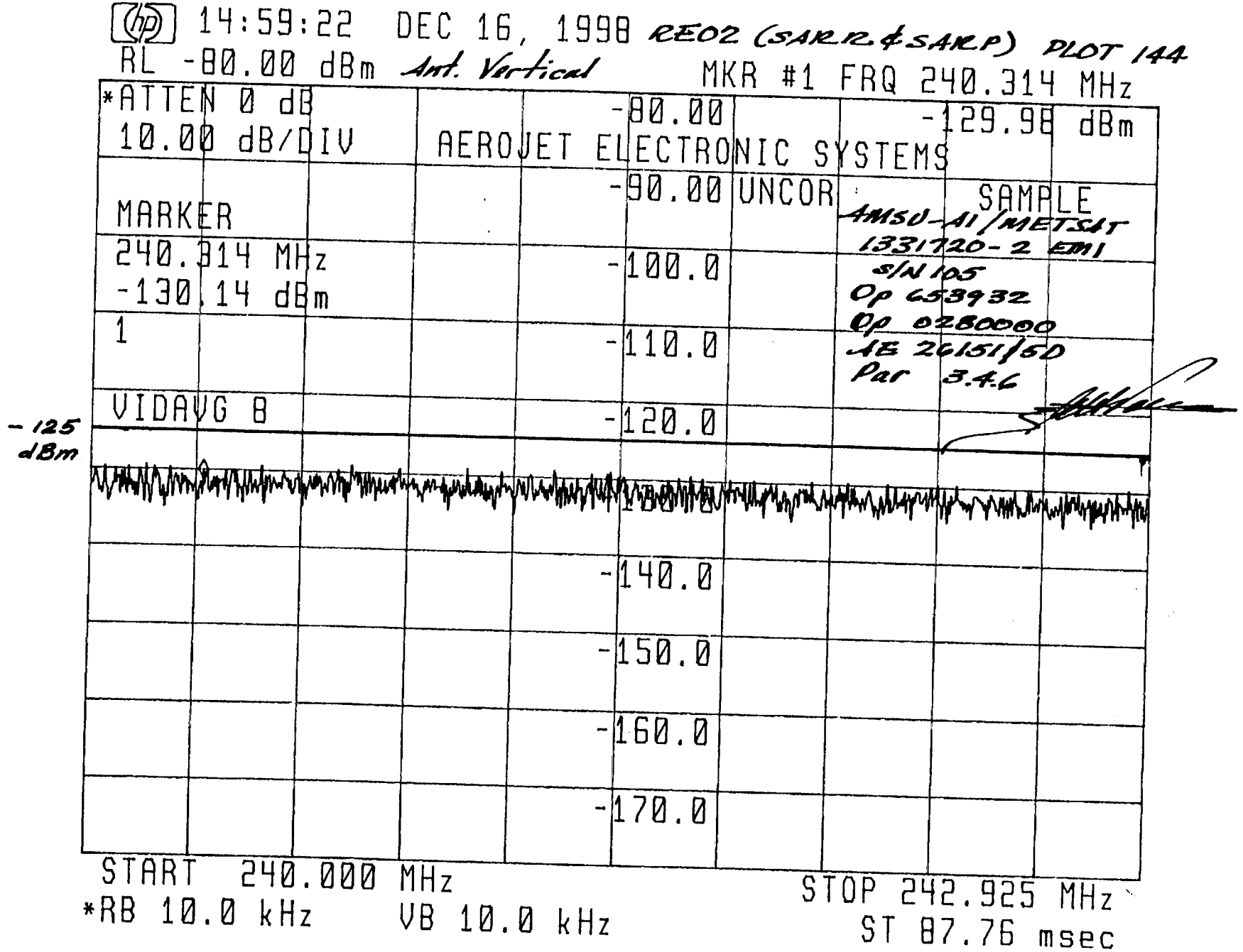

09:32:45 DEC 16, 1998 REOZ (SAME & STBD) PLOT 139
RL -80.00 dBm Int: Vertical MKR #1 FRQ 121.514 18 MHz
*ATTEN 0 dB
10.00 dB/DIV
AEROJET ELECTRONIC SYSTEMS
-80.00
-153.95 dBm
-90.00 UNCOR
SAMPLE
ANSU-AI/METSAT
1331720-2 EMI
S/N 105
PO 053932
QP 0280000
HE 26151/50
Par 3.4.6
MARKER
121.514 18 MHz
-153.95 dBm
1
VIDAVG 8
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
START 121.485 00 MHz
*RB 30.0 Hz
VB 30.0 Hz
STOP 121.515 00 MHz
ST 100.0 sec
-150 dBm

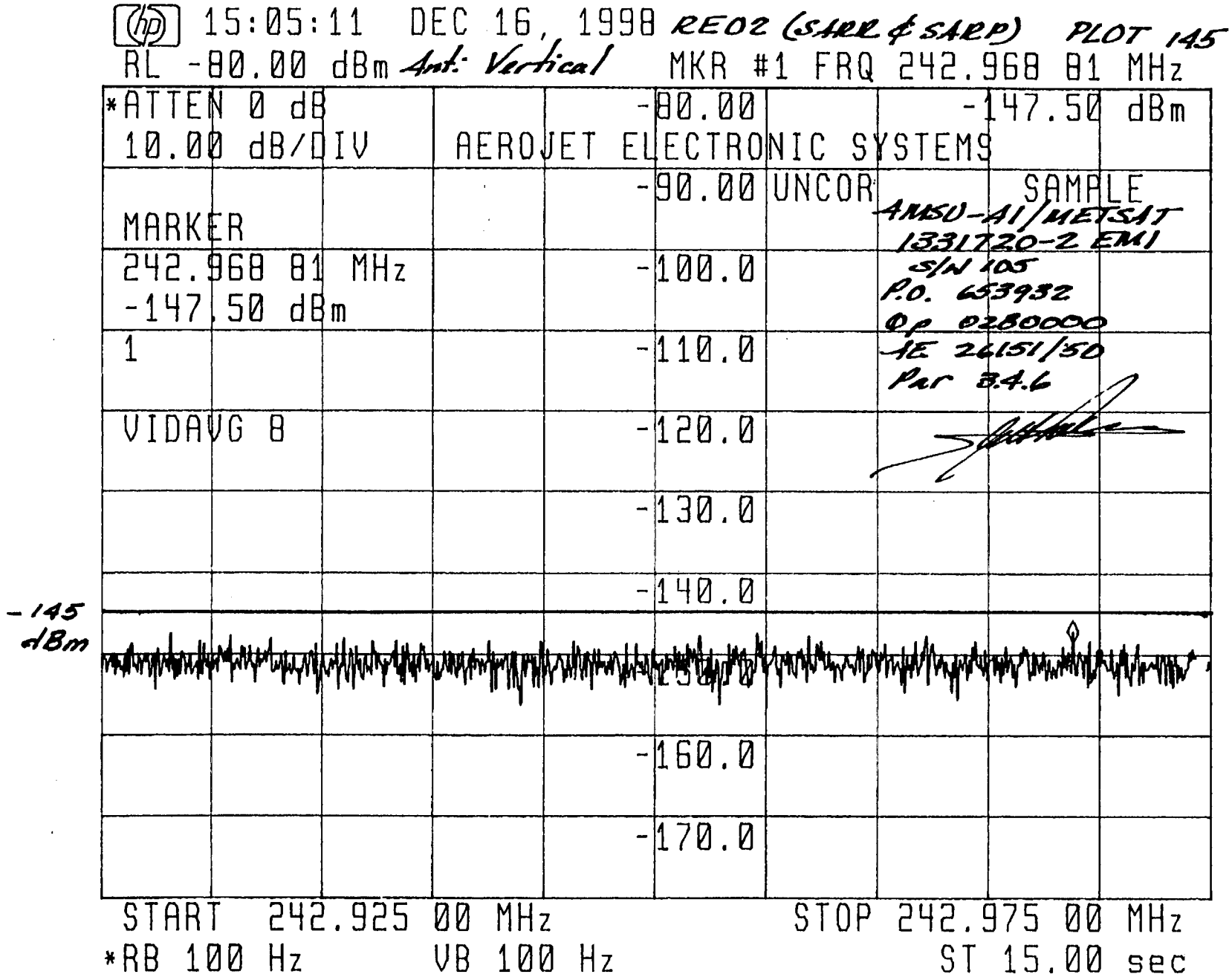

09:42:24 DEC 16, 1998 RE02 (SARR & SARP) PLOT 140
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 121.530 01 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-151.69 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
P.O. 653932
Op 0280000
AE 26151/5D
Par 3.4.6
MARKER
121.530 01 MHz
-151.69 dBm
1
VIDAVG 5
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-140 dBm
START 121.515 00 MHz
STOP 121.550 00 MHz
*RB 30.0 Hz
VB 30.0 Hz
ST 116.7 sec

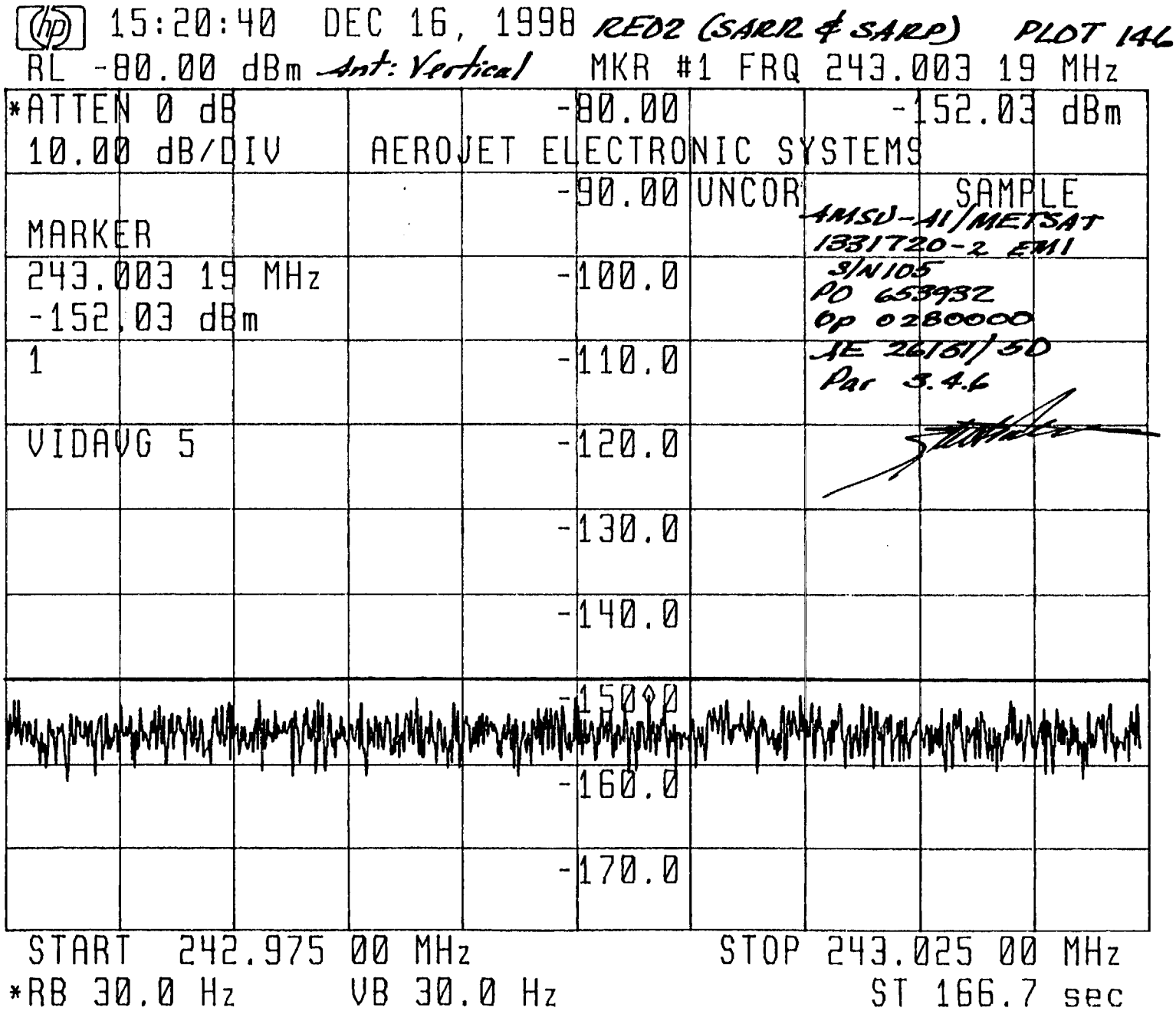

09:46:11 DEC 16, 1998 REQ2 (same # shed) PLOT 141
RL -80.00 dBm Ant: Vertical
MKR #1 FRQ 122.882 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-125.71 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/MATSAT
133720-2 EMI
S/N105
PO 443932
Dp 0280000
Se 261151SD
Par 3.4.6
MARKER
122.882 MHz
-125.71 dBm
1
VIDAVG 8
-100.0
-110.0
-120.0
-130.0
-150.0
-160.0
-170.0
START 121.550 MHz
*RB 1.00 kHz
VB 1.00 kHz
STOP 123.000 MHz
ST 4.350 sec
-125 dBm


08:56:21 DEC 16, 1998 REO2 (SARR & SARP) PLOT 142
RL -80.00 dBm Ant: Vertical
MKR #1 FRQ 124.423 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-119.12 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
124.423 MHz
-119.12 dBm
-100 dBm
-100.0
-110.0
1
VIDAVG 8
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
AMSU-A1/METSAT
1331720-2 EMI
S/N105
PO B69932
Op 0280000
4E 24151/50
Par 3.4.6
START 123.000 MHz
STOP 125.000 MHz
*RB 300 kHz
VB 300 kHz
ST 10.00 msec

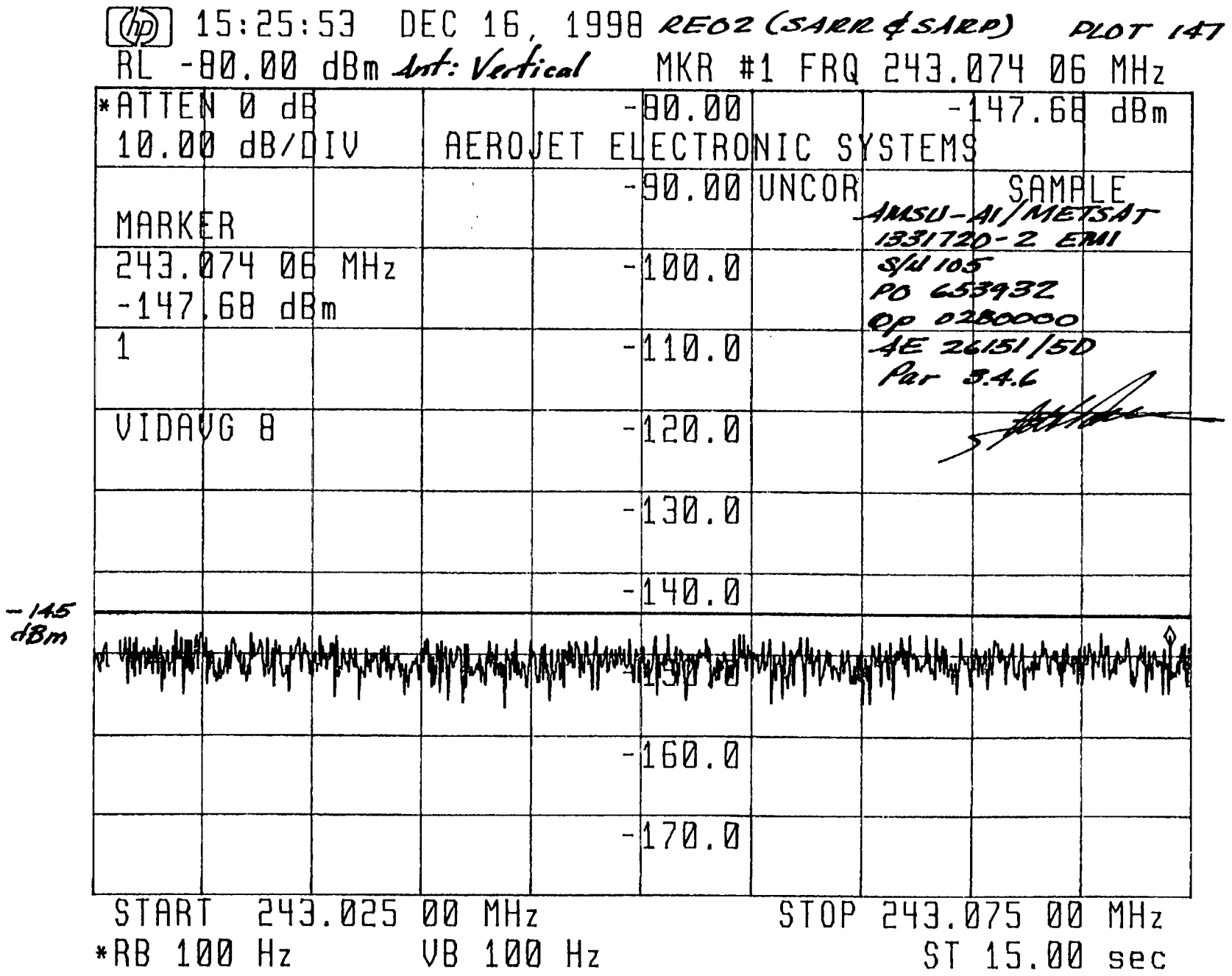

14:51:06 DEC 16, 1998 RE02 (SARR & SARP) PLOT 143
RL -80.00 dBm Ant: Vertical
MKR #1 FRQ 236.705 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-113.79 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
-100 dBm
236.705 MHz
-115.58 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
Op 653932
Op 0280000
GE 26151/6D
Par 84.6
START 236.000 MHz
*RB 300 kHz
VB 300 kHz
STOP 240.000 MHz
ST 10.00 msec


14:59:22 DEC 16, 1998 REO2 (SARR & SARP) PLOT 144
RL -80.00 dBm Ant. Vertical
MKR #1 FRQ 240.314 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-129.98 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
Op 653932
Op 0280000
AE 26151/60
Par 3.4.6
MARKER
240.314 MHz
-130.14 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
-125 dBm
-130.0
-140.0
-150.0
-160.0
-170.0
START 240.000 MHz
*RB 10.0 kHz
VB 10.0 kHz
STOP 242.925 MHz
ST 87.76 msec

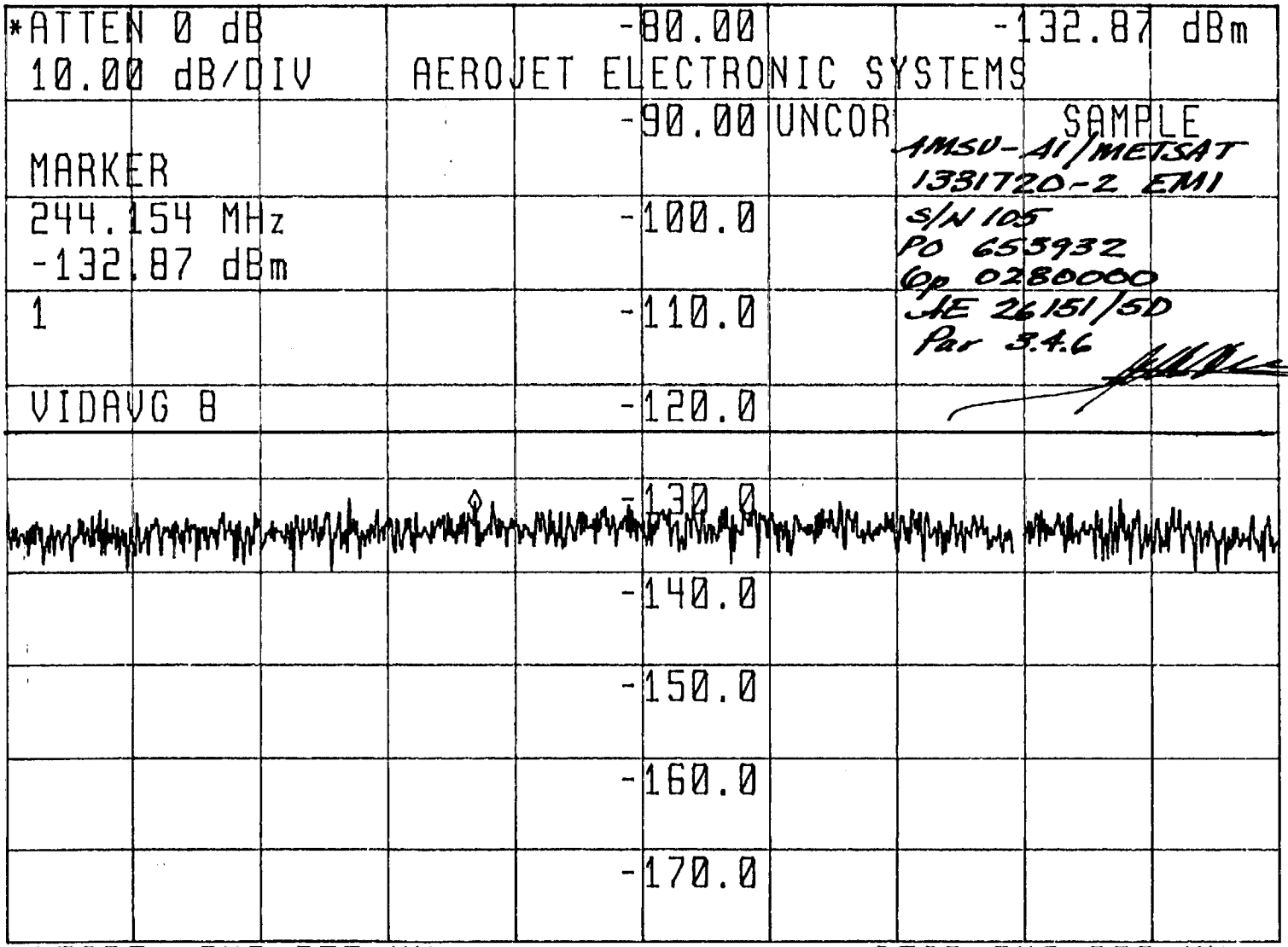

15:05:11 DEC 16, 1998 RE02 (SARR & SARP) PLOT 145
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 242.968 81 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-147.50 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
P.O. 653932
Op 0280000
IE 26151/50
Par 3.4.6
MARKER
242.968 81 MHz
-147.50 dBm
-100.0
-110.0
1
-120.0
VIDAVG 8
-130.0
-140.0
-145 dBm
-160.0
-170.0
START 242.925 00 MHz
STOP 242.975 00 MHz
*RB 100 Hz
VB 100 Hz
ST 15.00 sec


15:20:40 DEC 16, 1998 RED2 (SARR & SARP) PLOT 146
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 243.003 19 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-152.03 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EM1
S/N105
PO 653932
Op 0280000
AE 26181/50
Par 3.4.6
MARKER
243.003 19 MHz
-152.03 dBm
-100.0
1
-110.0
VIDAVG 5
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
START 242.975 00 MHz
STOP 243.025 00 MHz
*RB 30.0 Hz
VB 30.0 Hz
ST 166.7 sec

-150 dBm

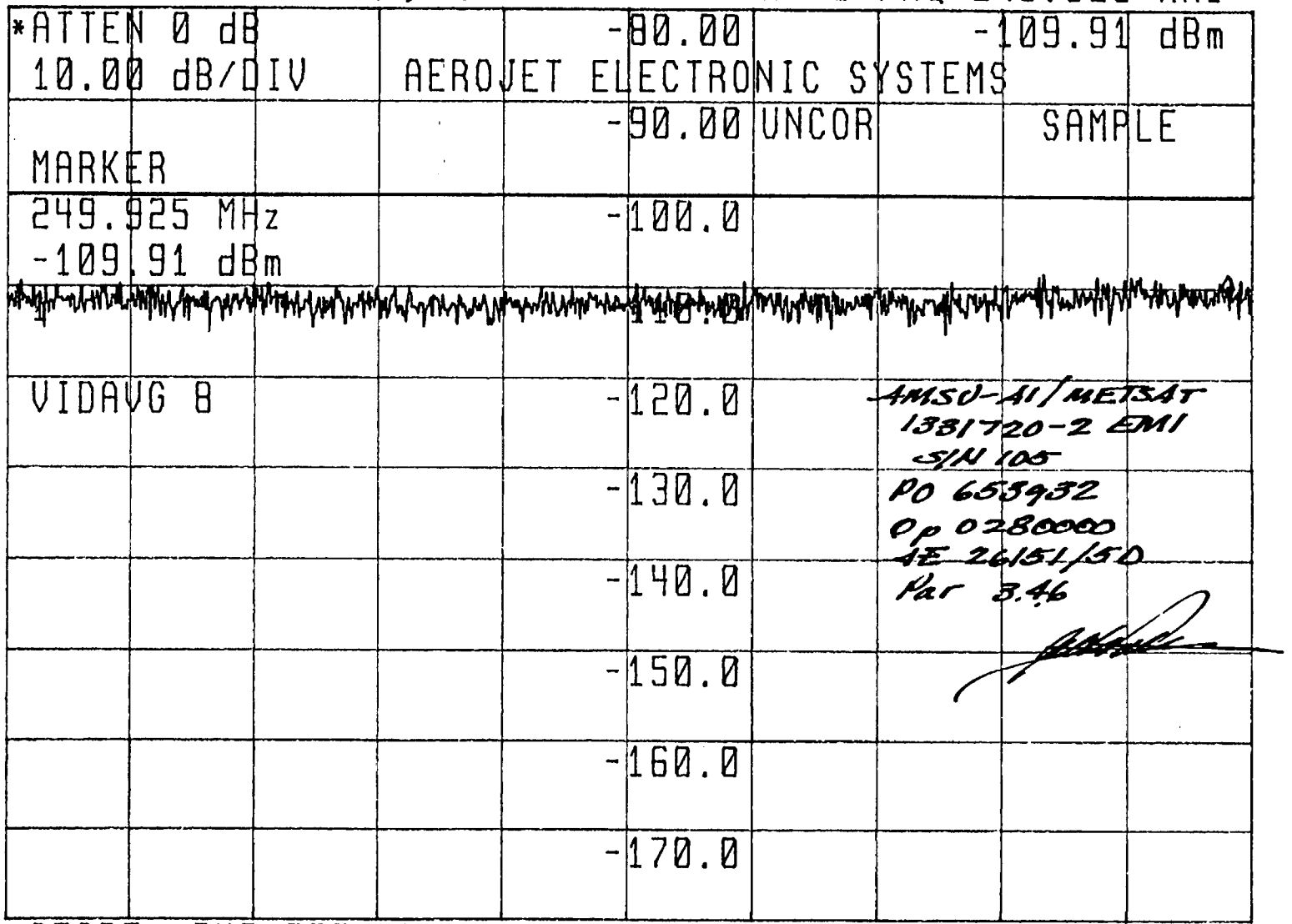

15:25:53 DEC 16, 1998 RE02 (SARR & SARP) PLOT 147
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 243.074 06 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-147.68 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-AI/METSAT
1331720-2 EMI
S/U 105
PO C53932
Op 0280000
AE 26151/5D
Par 3.4.6
MARKER
243.074 06 MHz
-147.68 dBm
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
1
VIDAVG 8
-145 dBm
START 243.025 00 MHz
STOP 243.075 00 MHz
*RB 100 Hz
VB 100 Hz
ST 15.00 sec

15:29:04 DEC 16, 1998 RE02 (SARR & SARP) PLOT 148
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 244.154 MHz

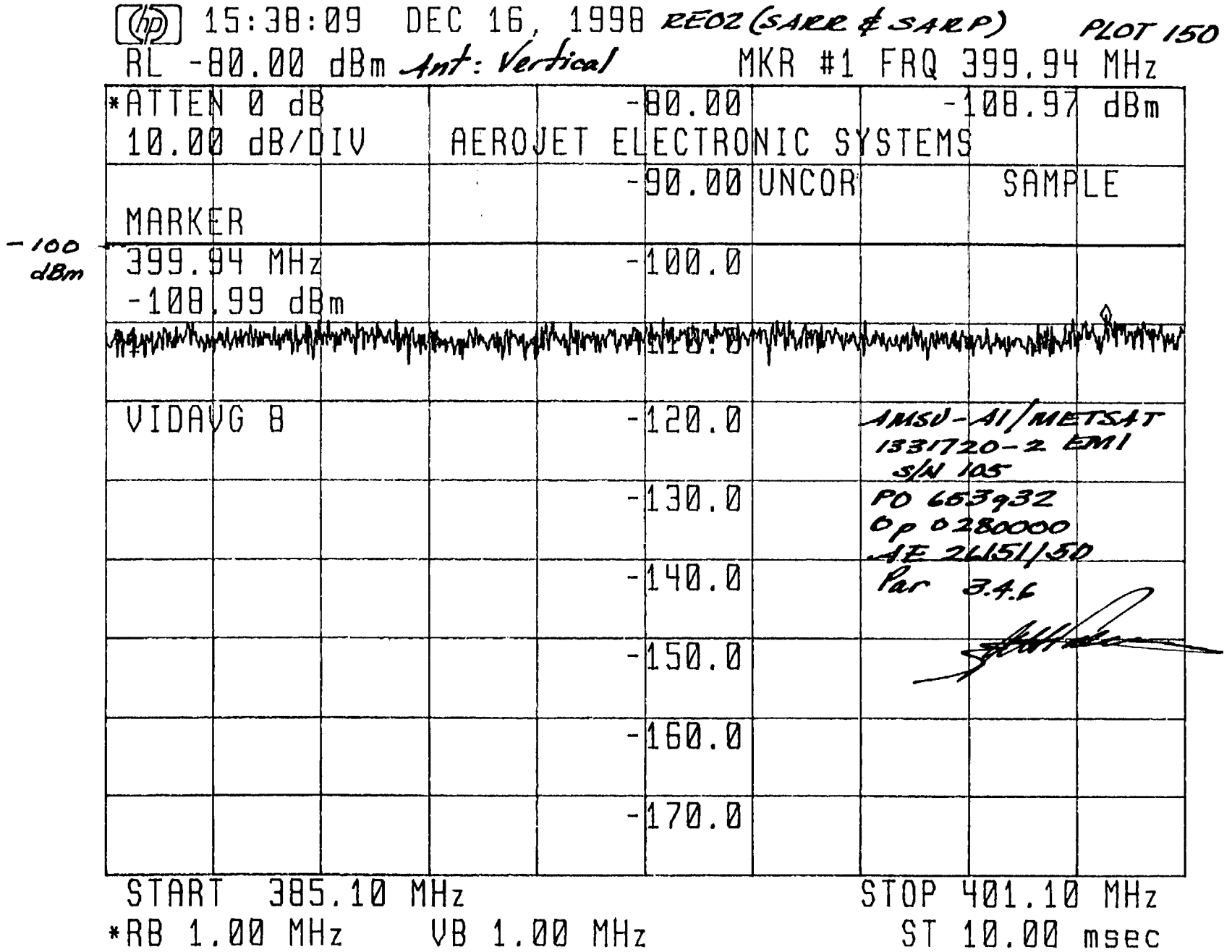


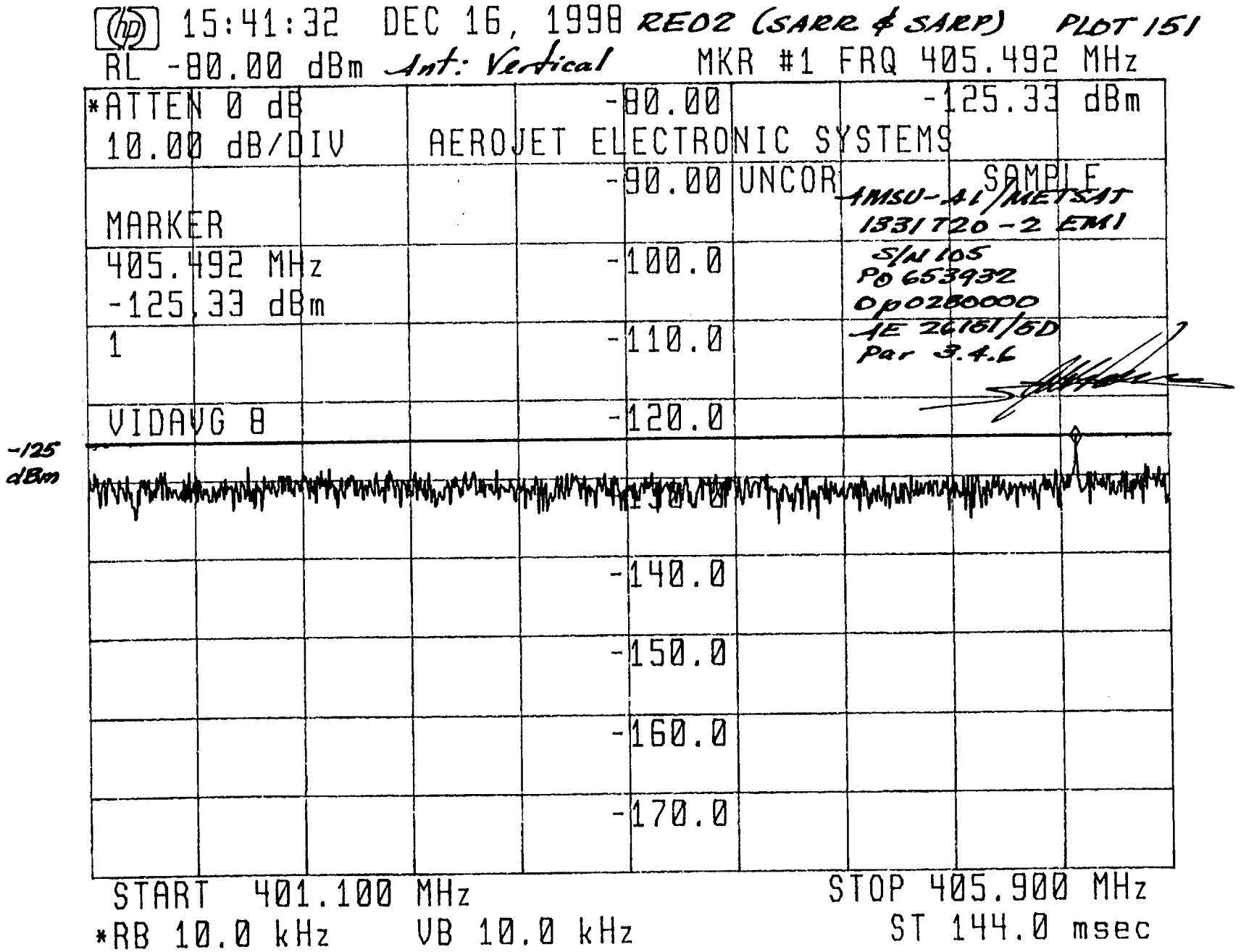
15:33:25 DEC 16, 1998 REO2 (SARR & SARP) PLOT 149

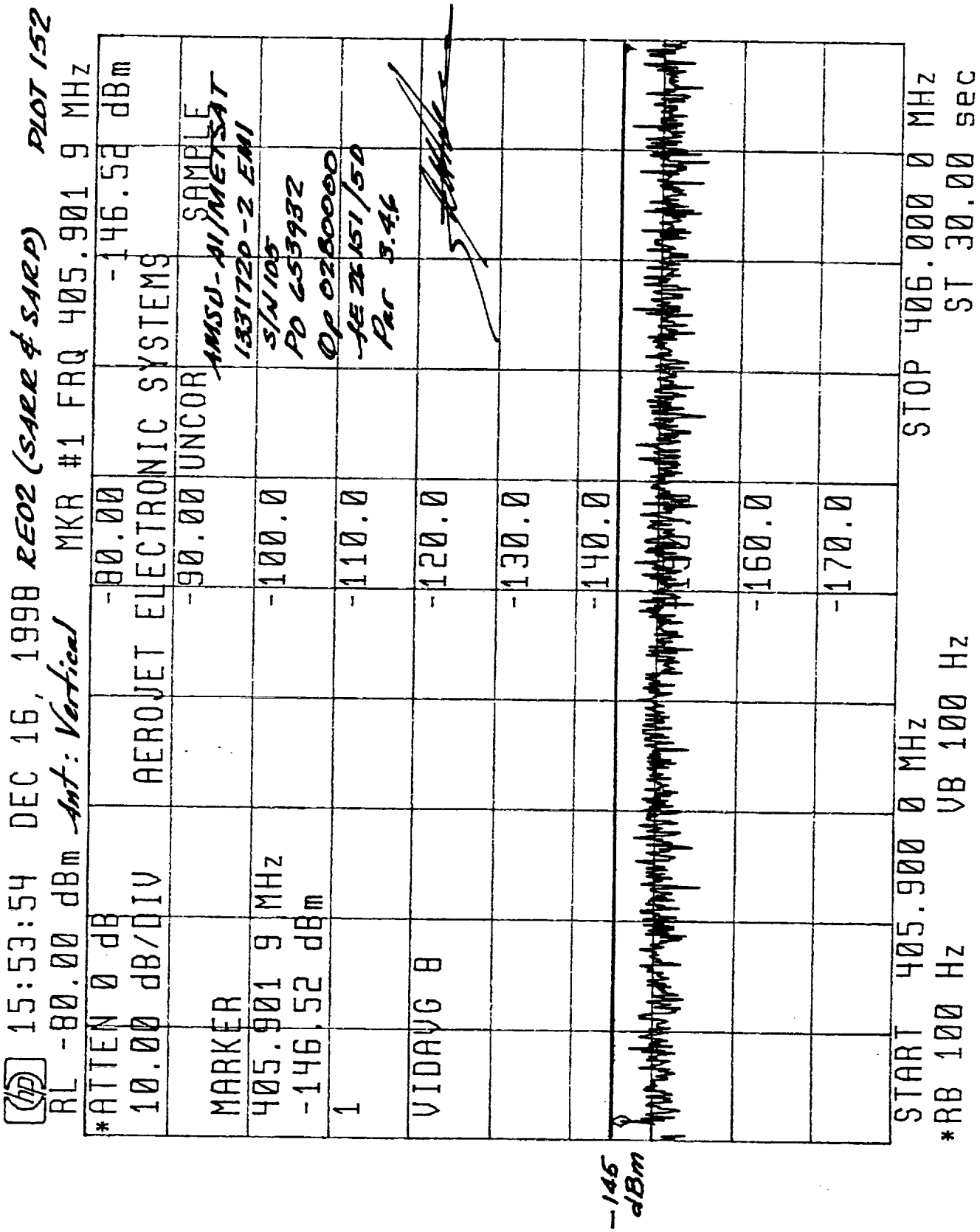
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 249.925 MHz

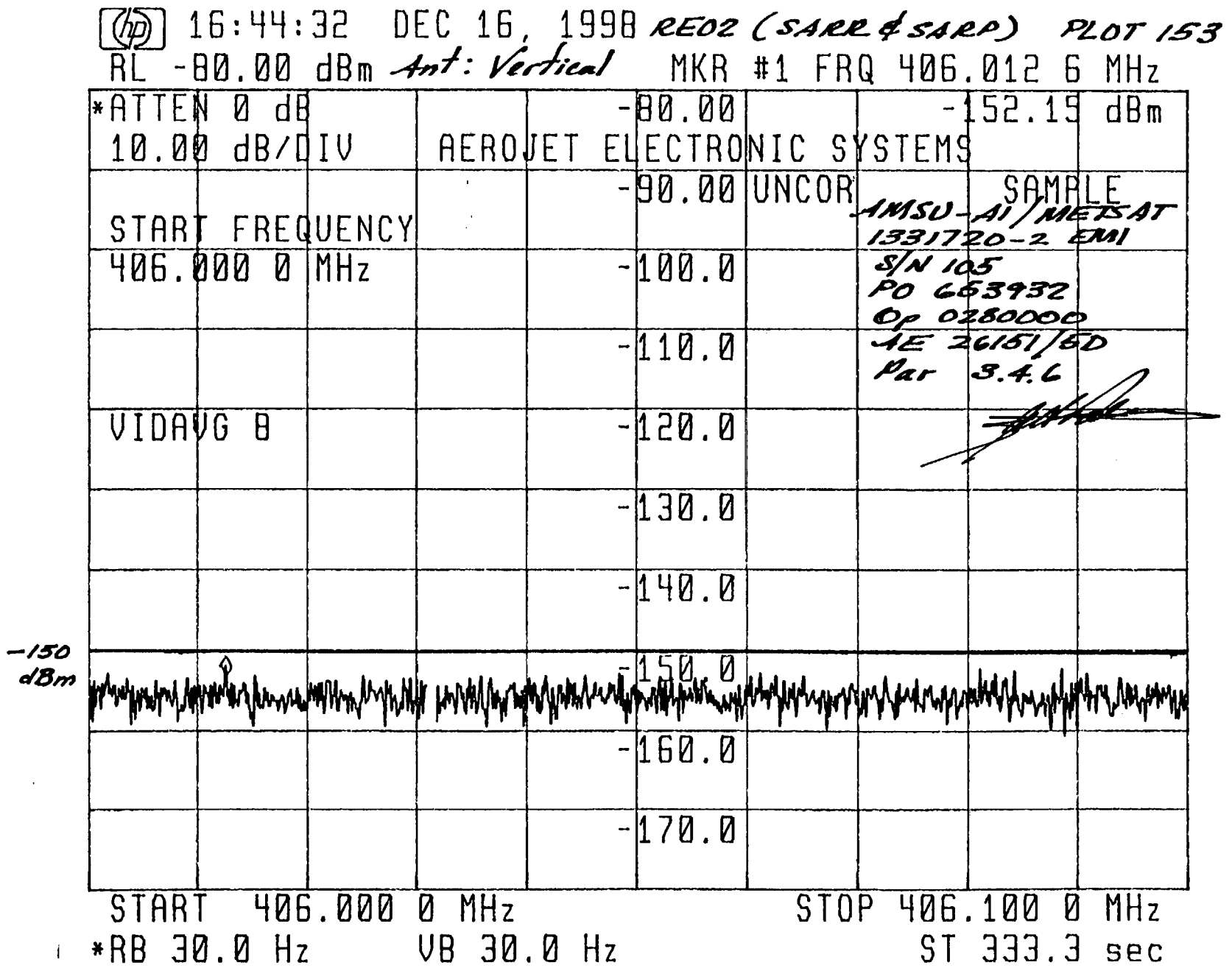


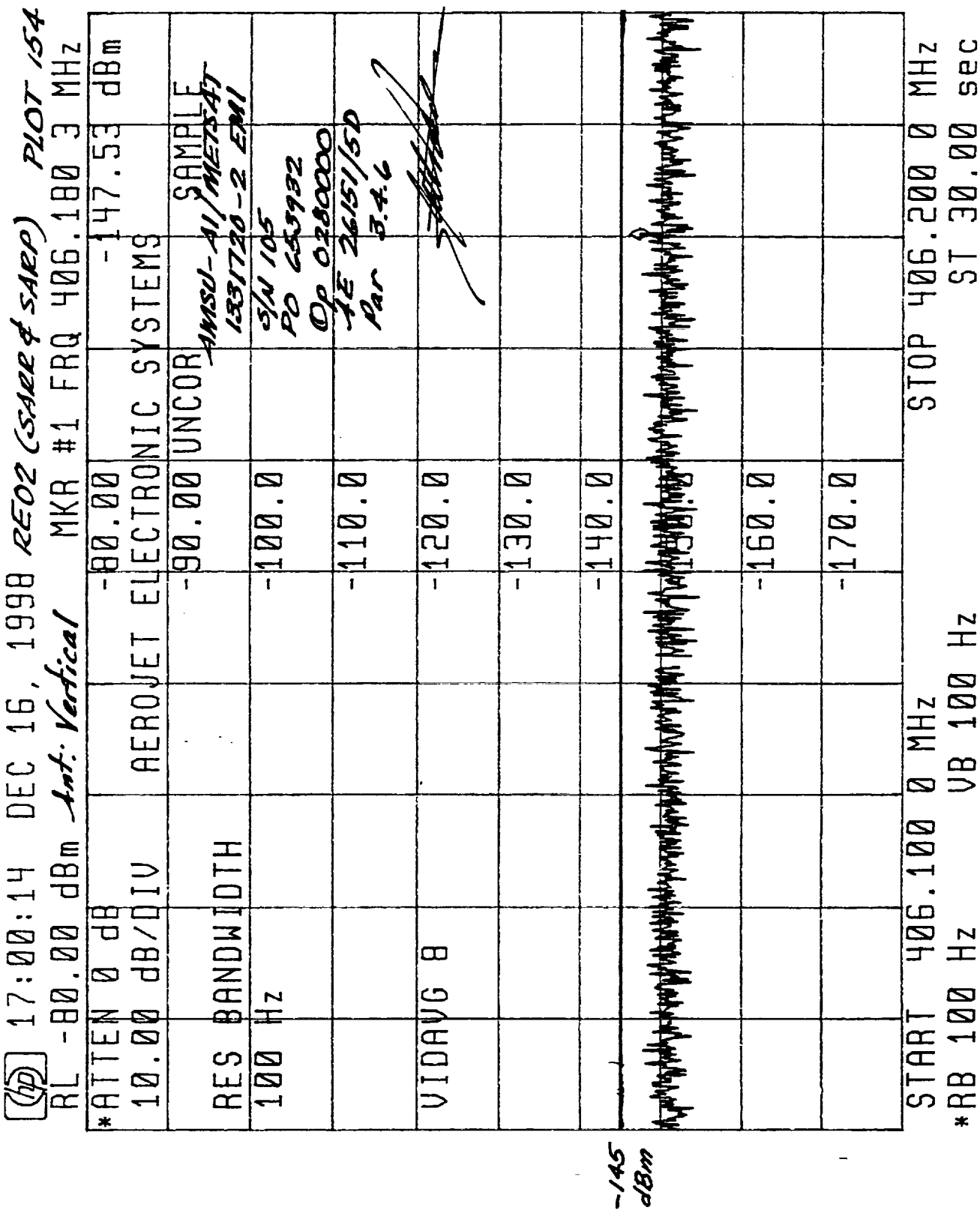
-100 dBm


15:38:09 DEC 16, 1998 REO2 (SARR & SARP) PLOT 150
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 399.94 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-108.97 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
399.94 MHz
-108.99 dBm
-100.0
-100 dBm
VIDAVG 8
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
PO 653932
Op 0280000
AE 26151/50
Par 3.4.6
START 385.10 MHz
STOP 401.10 MHz
*RB 1.00 MHz
VB 1.00 MHz
ST 10.00 msec

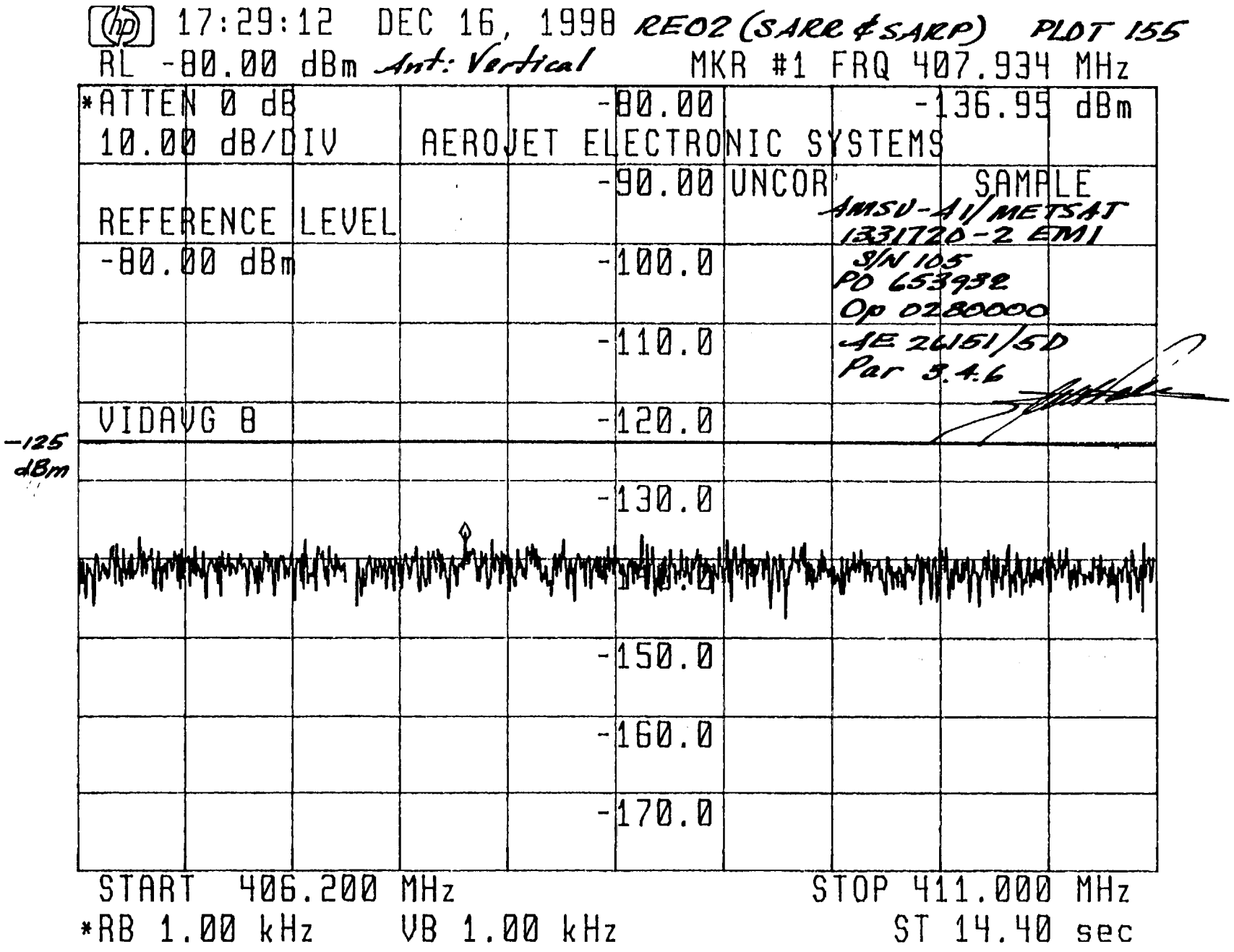

15:41:32 DEC 16, 1998 RE02 (SARR & SARP) PLOT 151
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 405.492 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-125.33 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331T20-2 EMI
S/N 105
PO 653932
Op0280000
1E 26161/6D
Par 3.4.6
MARKER
405.492 MHz
-125.33 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
-125 dBm
-130.0
-140.0
-150.0
-160.0
-170.0
START 401.100 MHz
STOP 405.900 MHz
*RB 10.0 kHz
VB 10.0 kHz
ST 144.0 msec

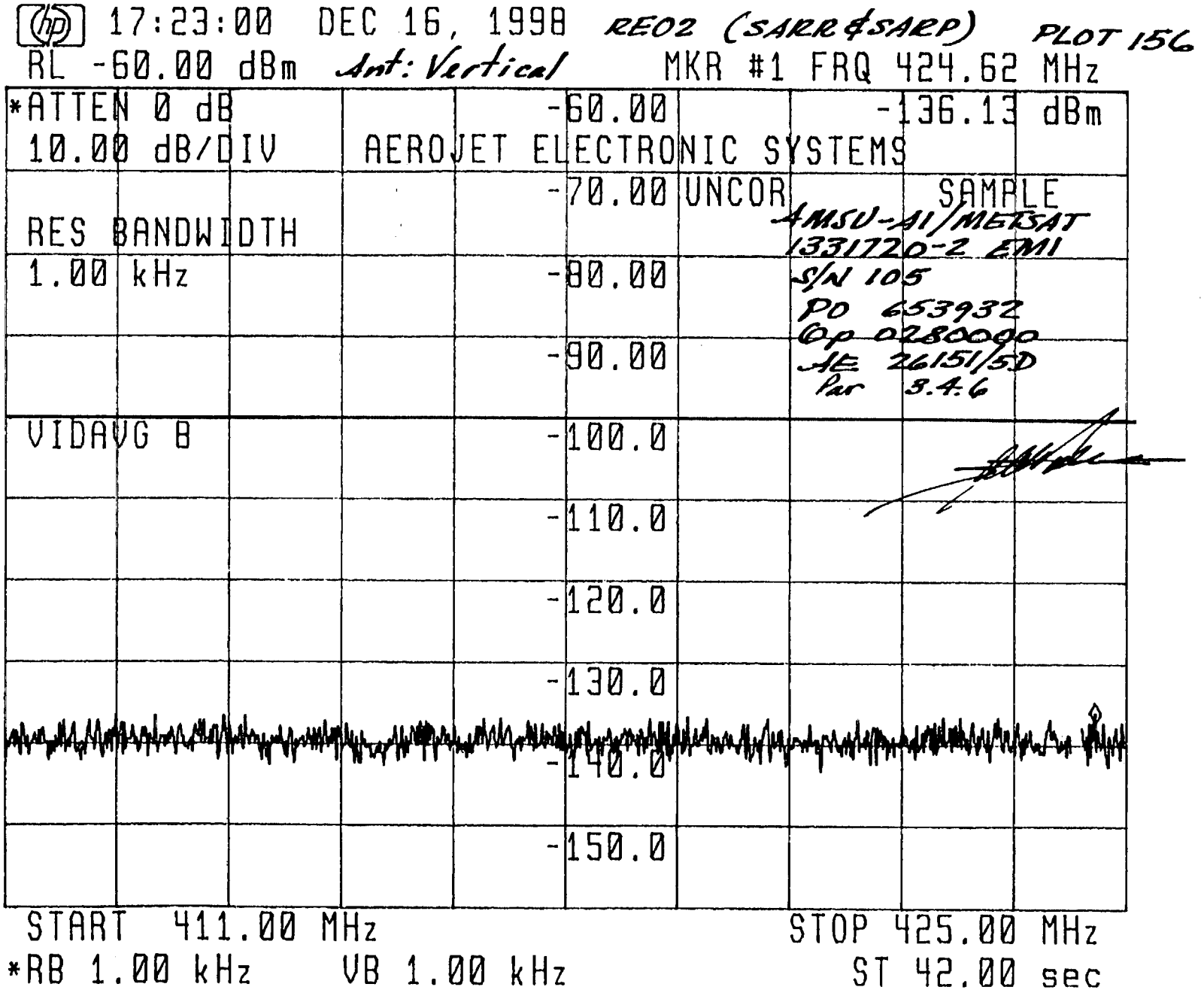

15:53:54 DEC 16, 1998 RE02 (SAVED) PLOT 152
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 405.901 9 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-146.52 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 453932
Op 02B0090
SAMPLE
MARKER
405.901 9 MHz
-146.52 dBm
1
VIDAVG 8
-145 dBm
START 405.900 0 MHz
*RB 100 Hz
VB 100 Hz
STOP 406.000 0 MHz
ST 30.00 sec

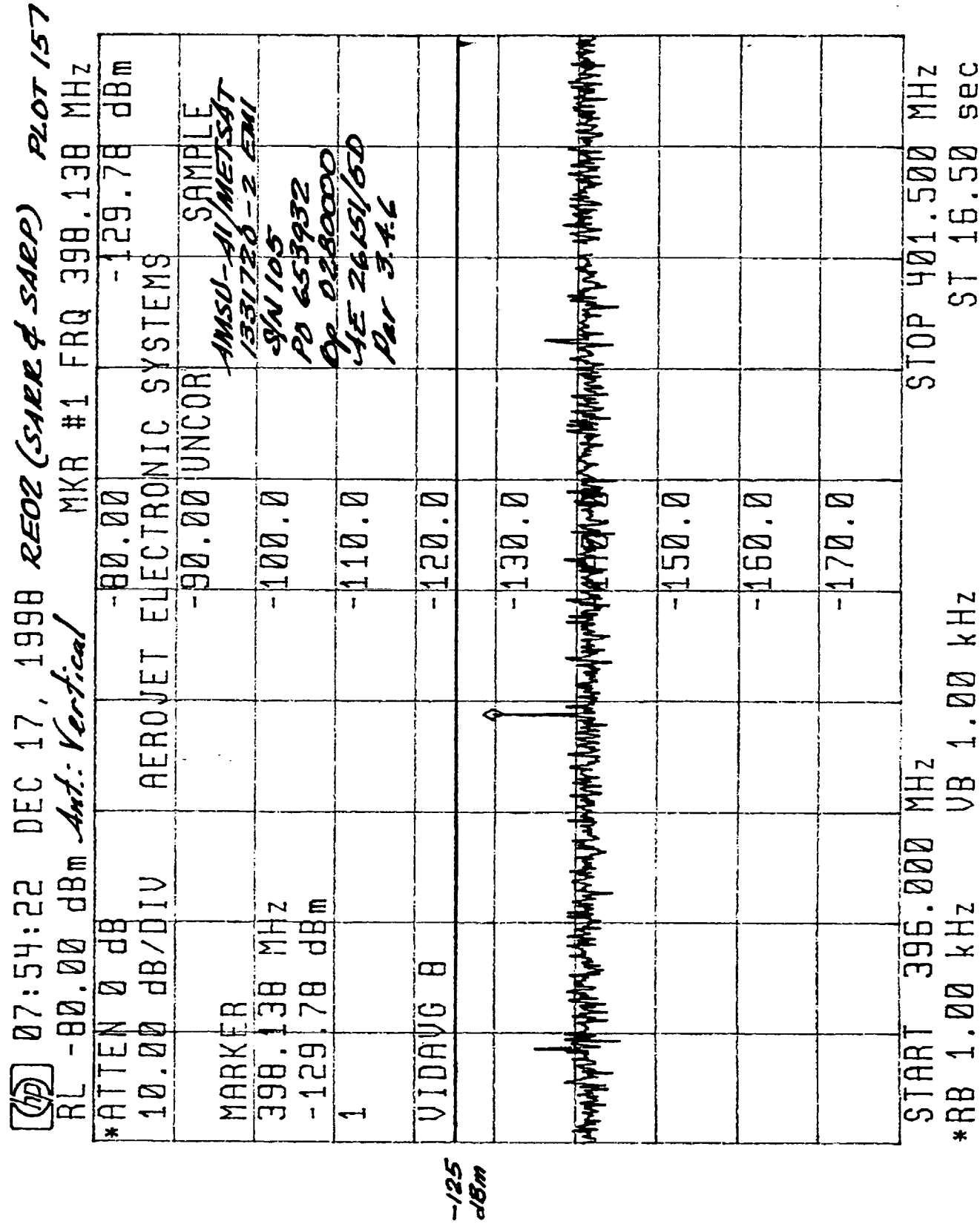

16:44:32 DEC 16, 1998 RE02 (SARR & SARP) PLOT 153
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 406.012 6 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-152.15 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 663932
Op 0280000
4E 26151/BD
Par 3.4.6
START FREQUENCY
406.000 0 MHz
-100.0
-110.0
VIDAVG 8
-120.0
-130.0
-140.0
-150 dBm
-150.0
-160.0
-170.0
START 406.000 0 MHz
STOP 406.100 0 MHz
*RB 30.0 Hz
VB 30.0 Hz
ST 333.3 sec


17:00:14 DEC 16, 1998 RE02 (SAME & SAEP) PLOT 154
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 406.180 3 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-147.53 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
PO 253932
Op 0280000
TE 26151/SD
Par 3.4.6
RES BANDWIDTH
100 Hz
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
VIDAVG 8
START 406.100 0 MHz
*RB 100 Hz VB 100 Hz
STOP 406.200 0 MHz
ST 30.00 sec
-145 dBm

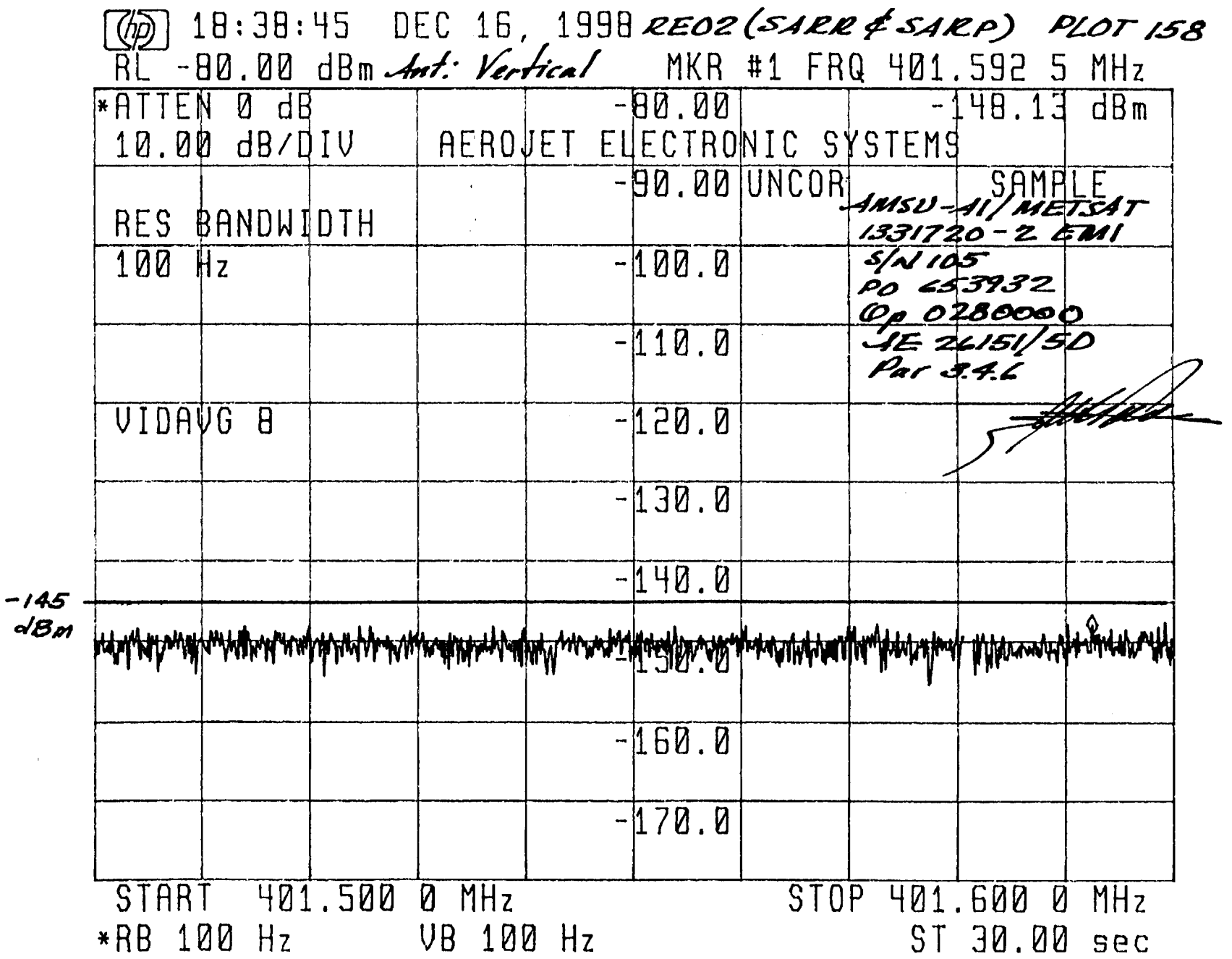
(V)


17:29:12 DEC 16, 1998 REO2 (SARR & SARP) PLOT 155
RL -80.00 dBm Ant: Vertical
MKR #1 FRQ 407.934 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-136.95 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
REFERENCE LEVEL
-80.00 dBm
-100.0
S/N 105
PO 653932
Op 0280000
-110.0
4E 26151/5D
Par 3.4.6
VIDAVG 8
-120.0
-125 dBm
-130.0
-150.0
-160.0
-170.0
START 406.200 MHz
STOP 411.000 MHz
*RB 1.00 kHz
VB 1.00 kHz
ST 14.40 sec


17:23:00 DEC 16, 1998 RE02 (SARR&SARP) PLOT 156
RL -60.00 dBm Ant: Vertical MKR #1 FRQ 424.62 MHz
*ATTEN 0 dB
10.00 dB/DIV
-60.00
-136.13 dBm
AEROJET ELECTRONIC SYSTEMS
-70.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 653932
Op 0280090
AE 26151/5D
Par 3.4.6
RES BANDWIDTH
1.00 kHz
-80.00
-90.00
-100 dBm
VIDAVG 8
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
START 411.00 MHz
STOP 425.00 MHz
*RB 1.00 kHz
VB 1.00 kHz
ST 42.00 sec


07:54:22 DEC 17, 1998 RE02 (SAER & SAEP) PLOT 157
RL -80.00 dBm Ant: Vertical
MKR #1 FRQ 398.138 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-129.78 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
133722-2 EMI
S/N 105
PO 653932
Op 0280000
4E 26SI/SD
Par 3.4.6
MARKER
398.138 MHz
-129.78 dBm
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
1
VIDAVG 8
START 396.000 MHz
*RB 1.00 kHz
VB 1.00 kHz
STOP 401.500 MHz
ST 16.50 sec
-125 dBm

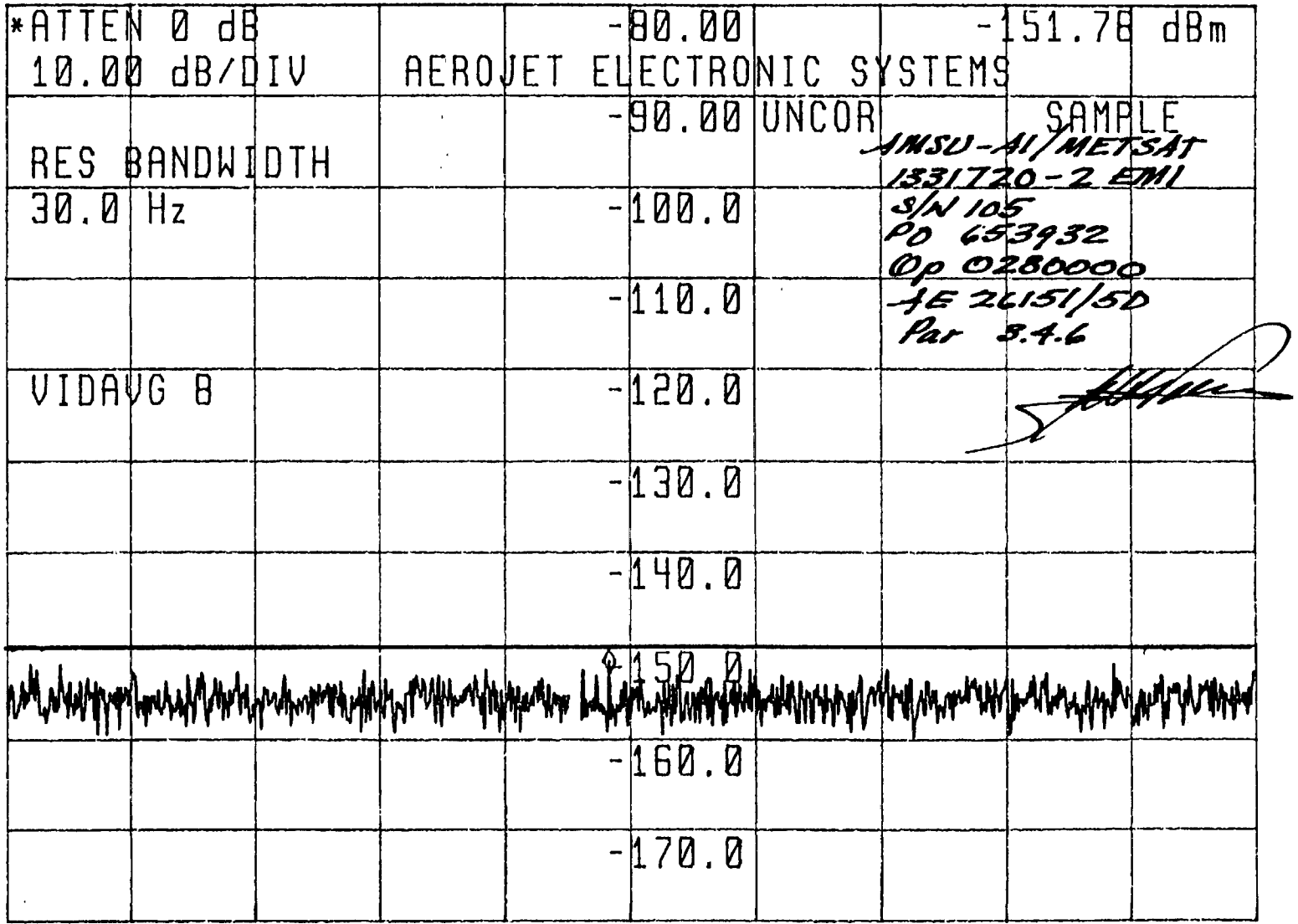
(V)


18:38:45 DEC 16, 1998 RE02 (SARR & SARP) PLOT 158
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 401.592 5 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-148.13 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 453932
Op 0280000
JE 26151/5D
Par 3.4.6
RES BANDWIDTH
100 Hz
-100.0
-110.0
VIDAVG 8
-120.0
-130.0
-140.0
-145 dBm
-150.0
-160.0
-170.0
START 401.500 0 MHz
STOP 401.600 0 MHz
*RB 100 Hz
VB 100 Hz
ST 30.00 sec

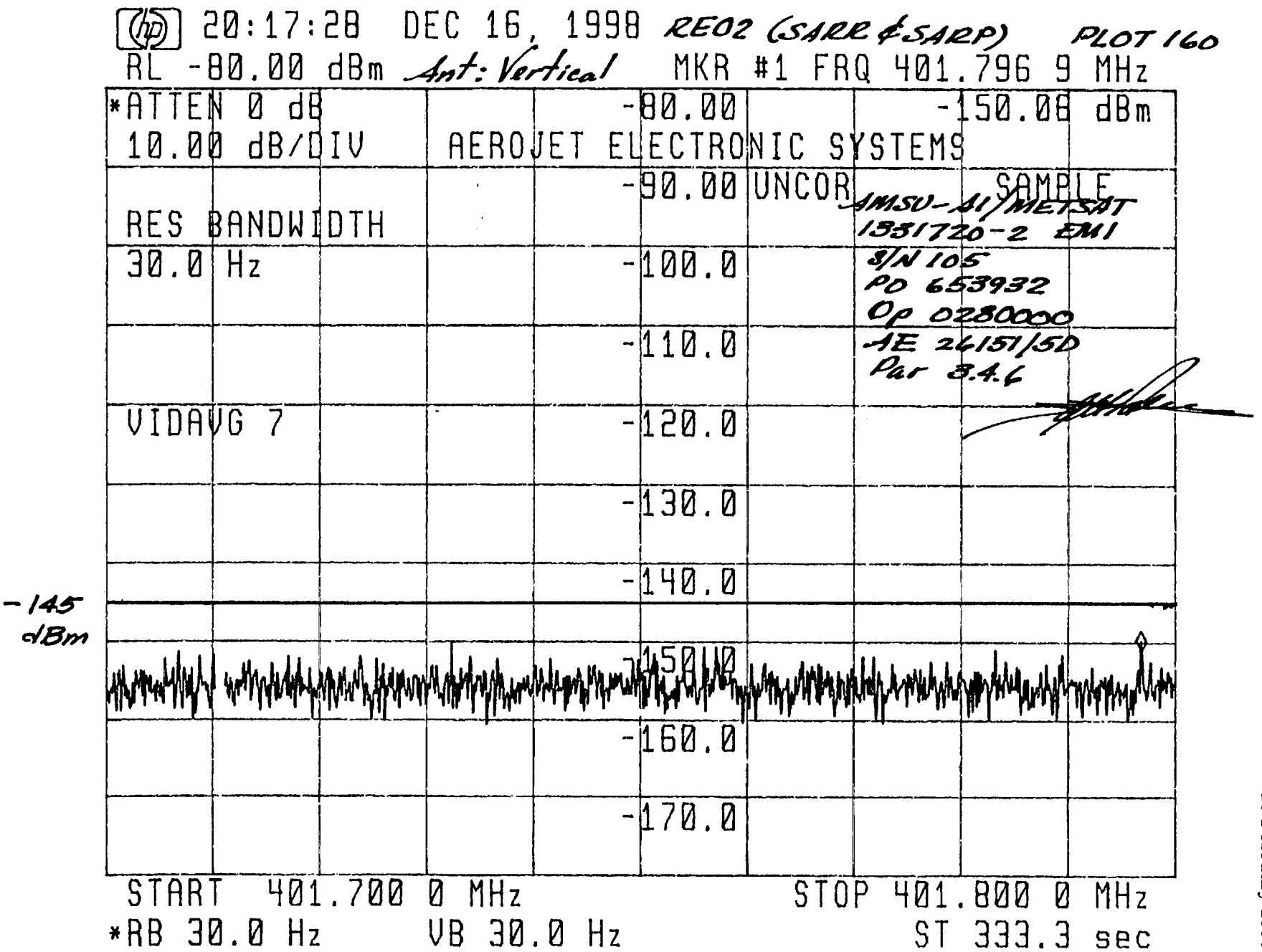
(V)

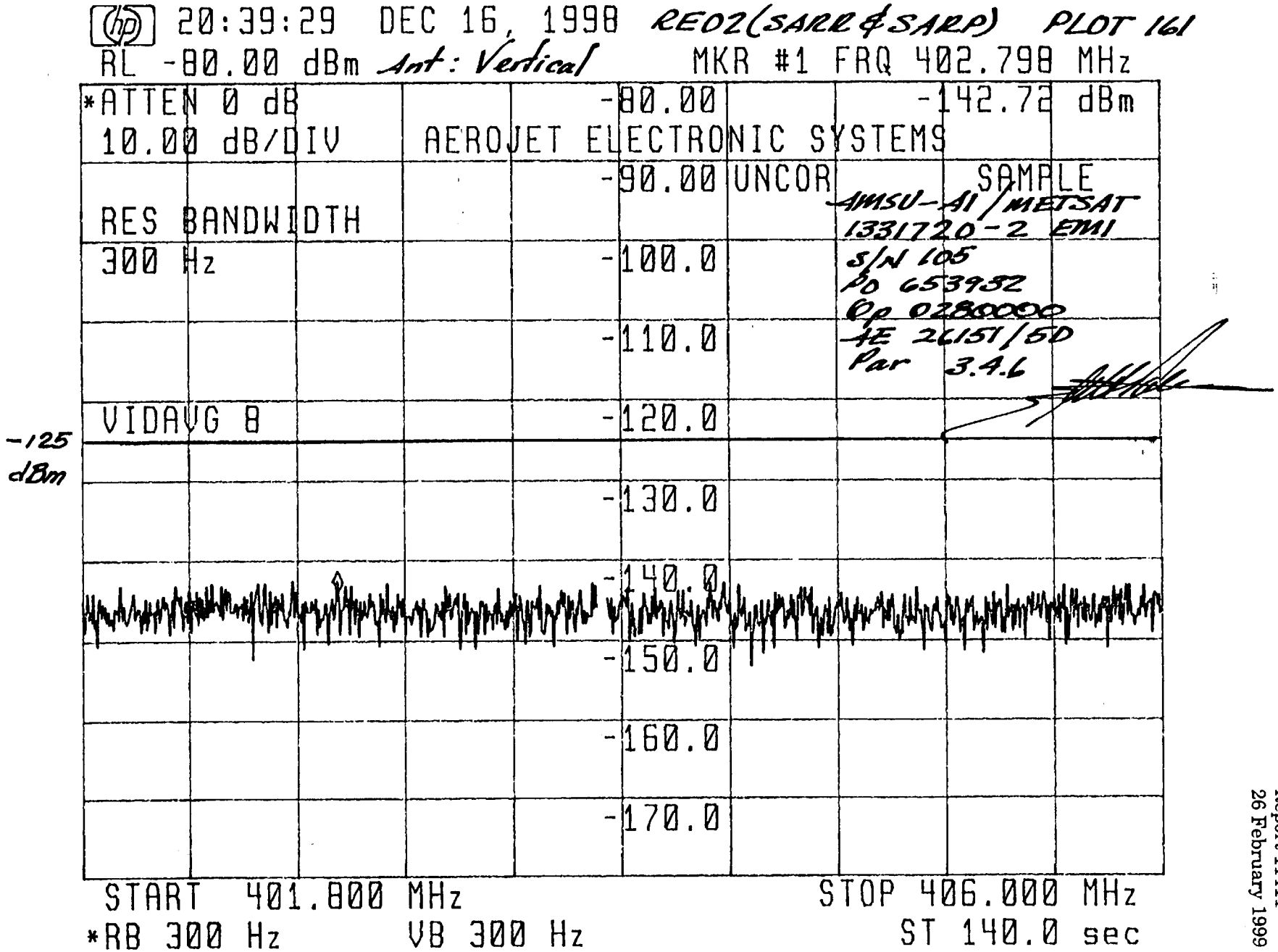
19:37:02 DEC 16, 1998 RE02 (SARR & SARP) PLOT 159

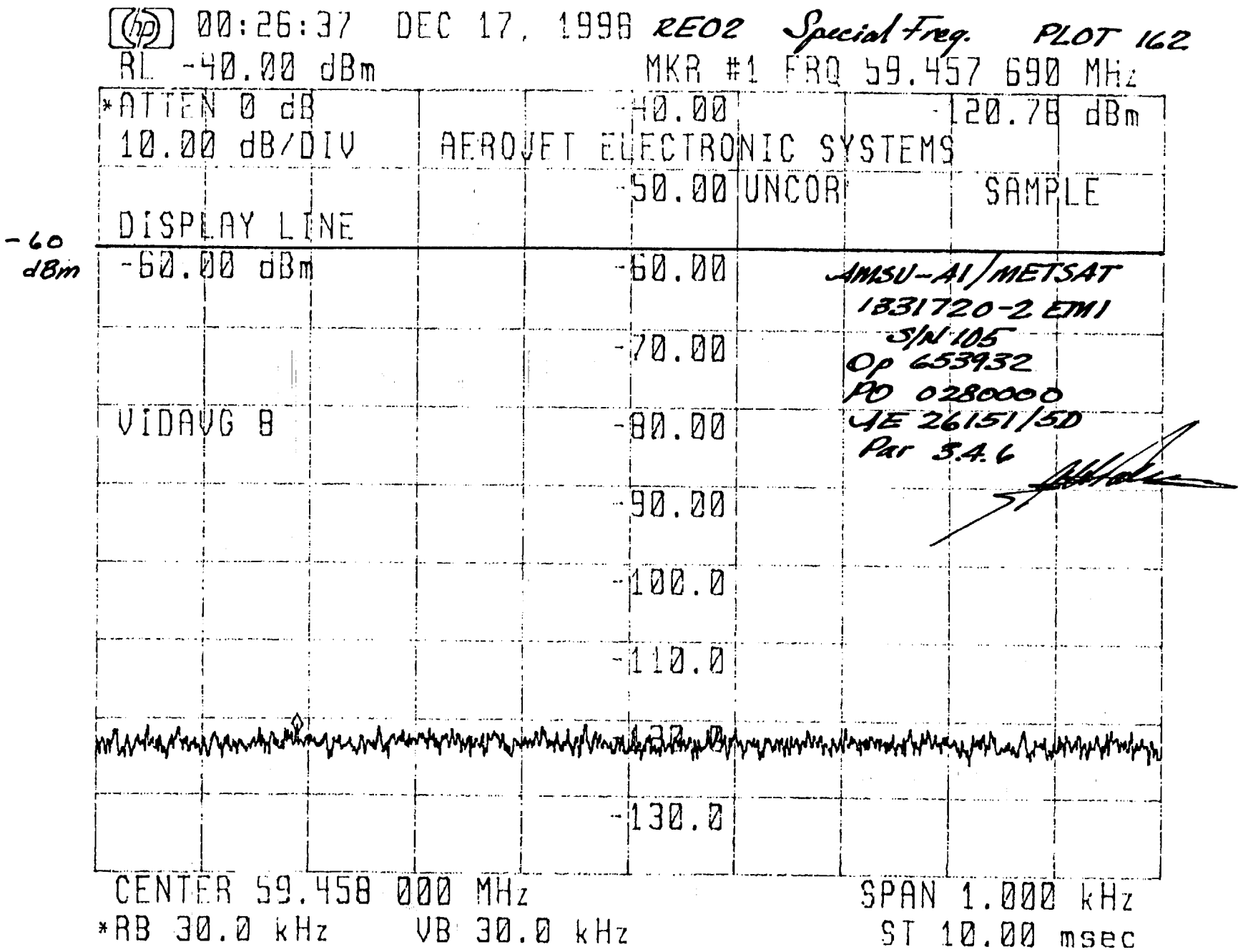
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 401.648 4 MHz

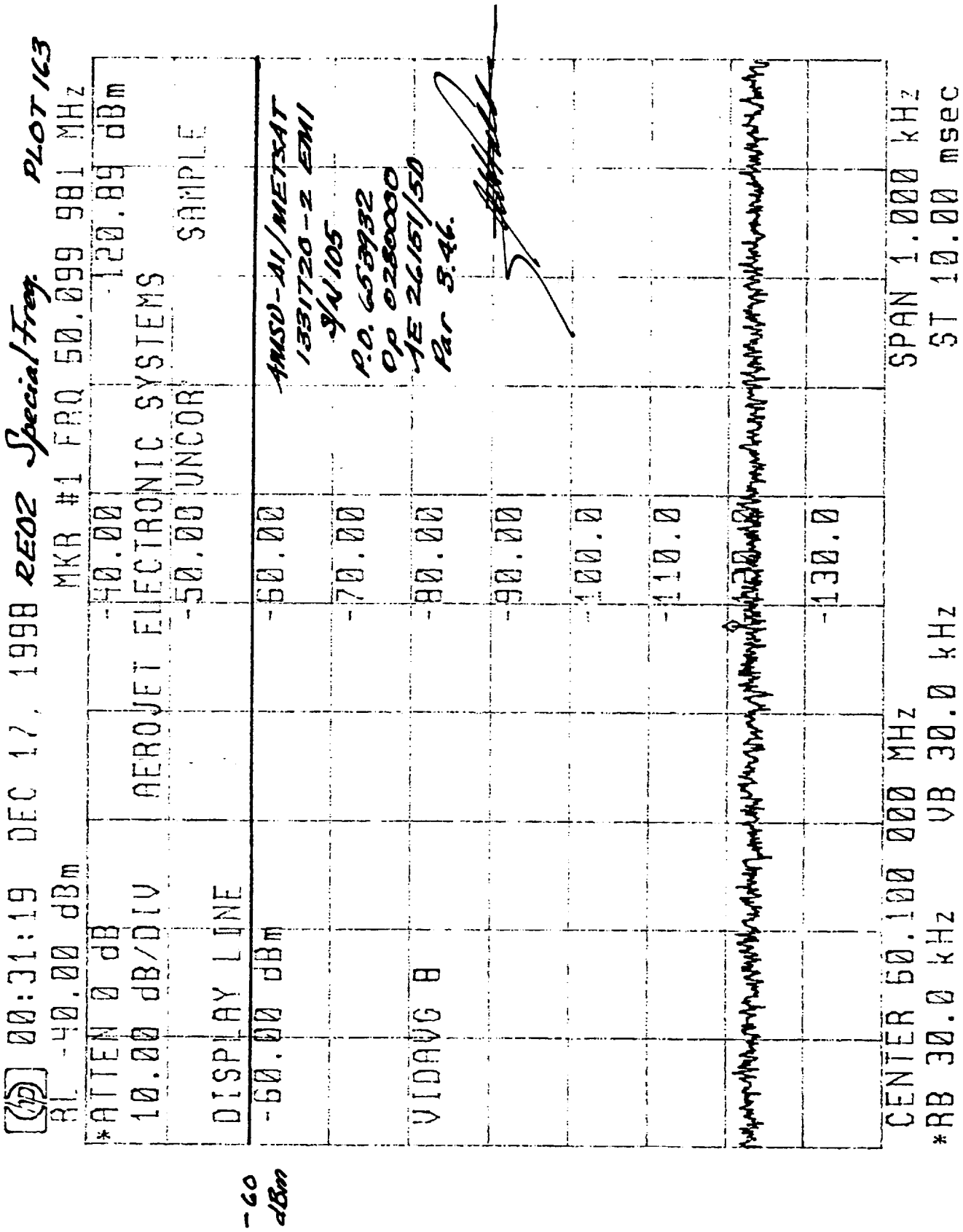


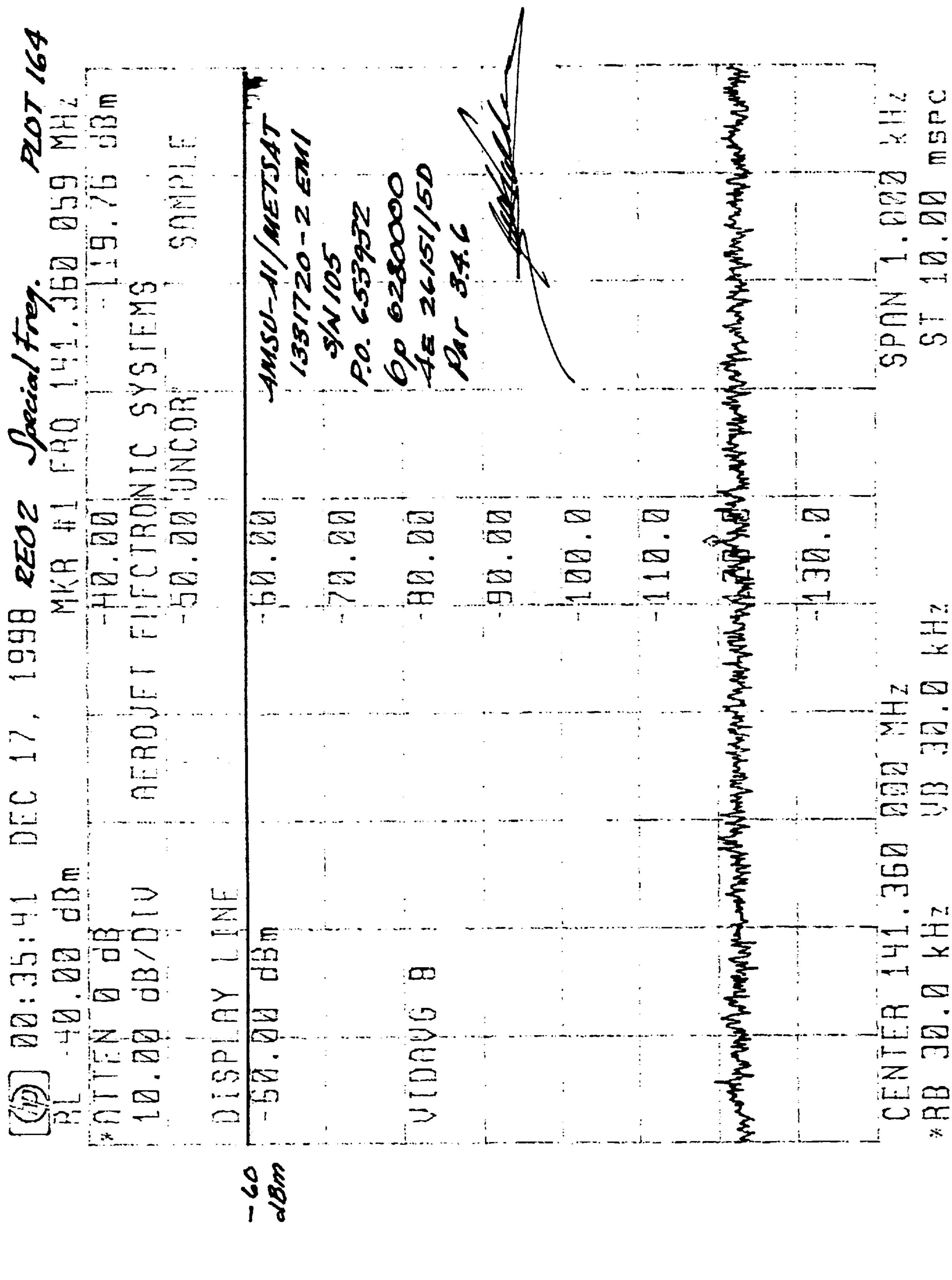
-150 dBm

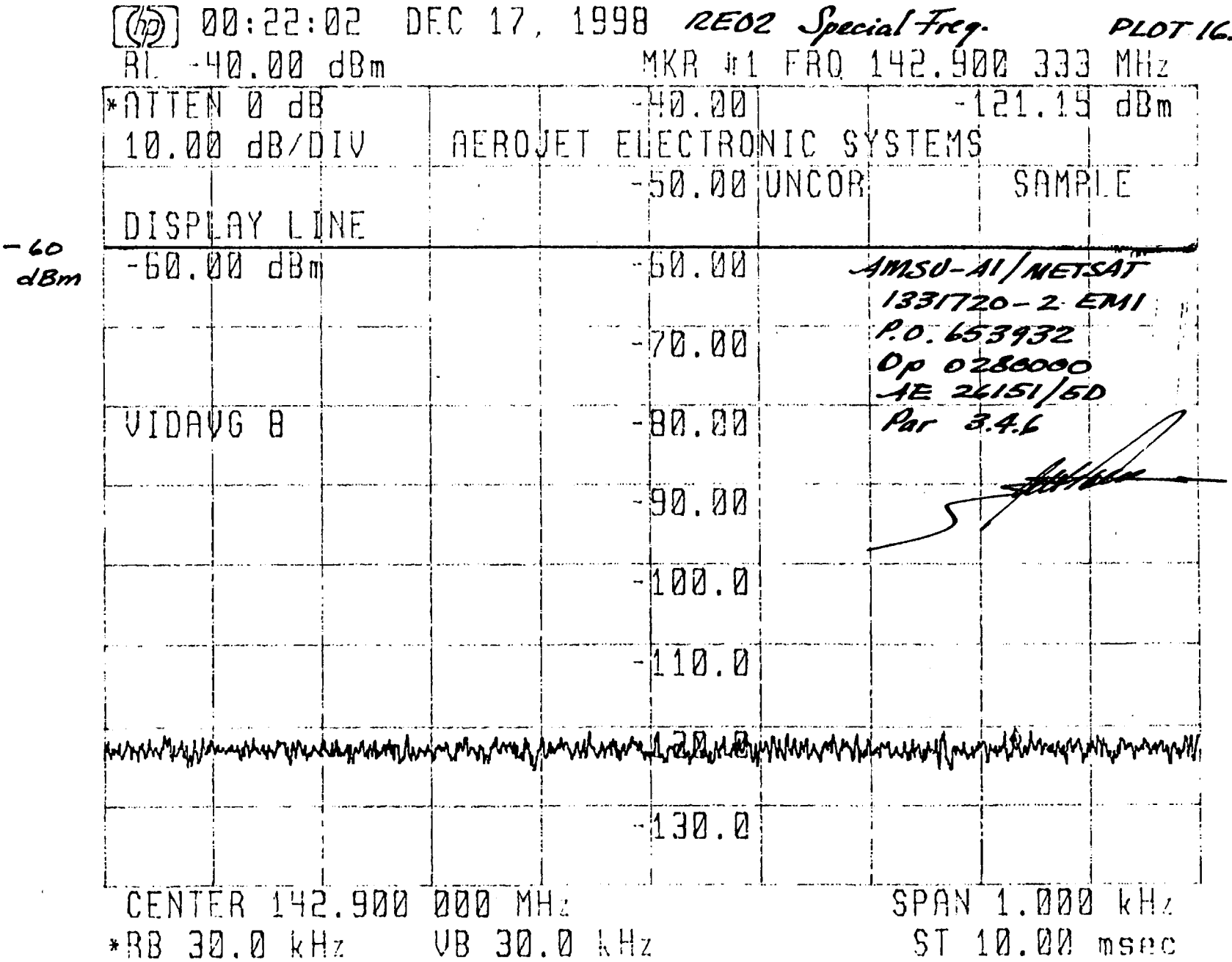

20:17:28 DEC 16, 1998 RE02 (SARE & SARP) PLOT 160
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 401.796 9 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-150.00 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
RES BANDWIDTH
30.0 Hz
-100.0
S/N 105
PO 653932
Op 0280000
-110.0
AE 26151/5D
Par 3.4.6
VIDAVG 7
-120.0
-130.0
-140.0
-145 dBm
-150.0
-160.0
-170.0
START 401.700 0 MHz
STOP 401.800 0 MHz
*RB 30.0 Hz
VB 30.0 Hz
ST 333.3 sec

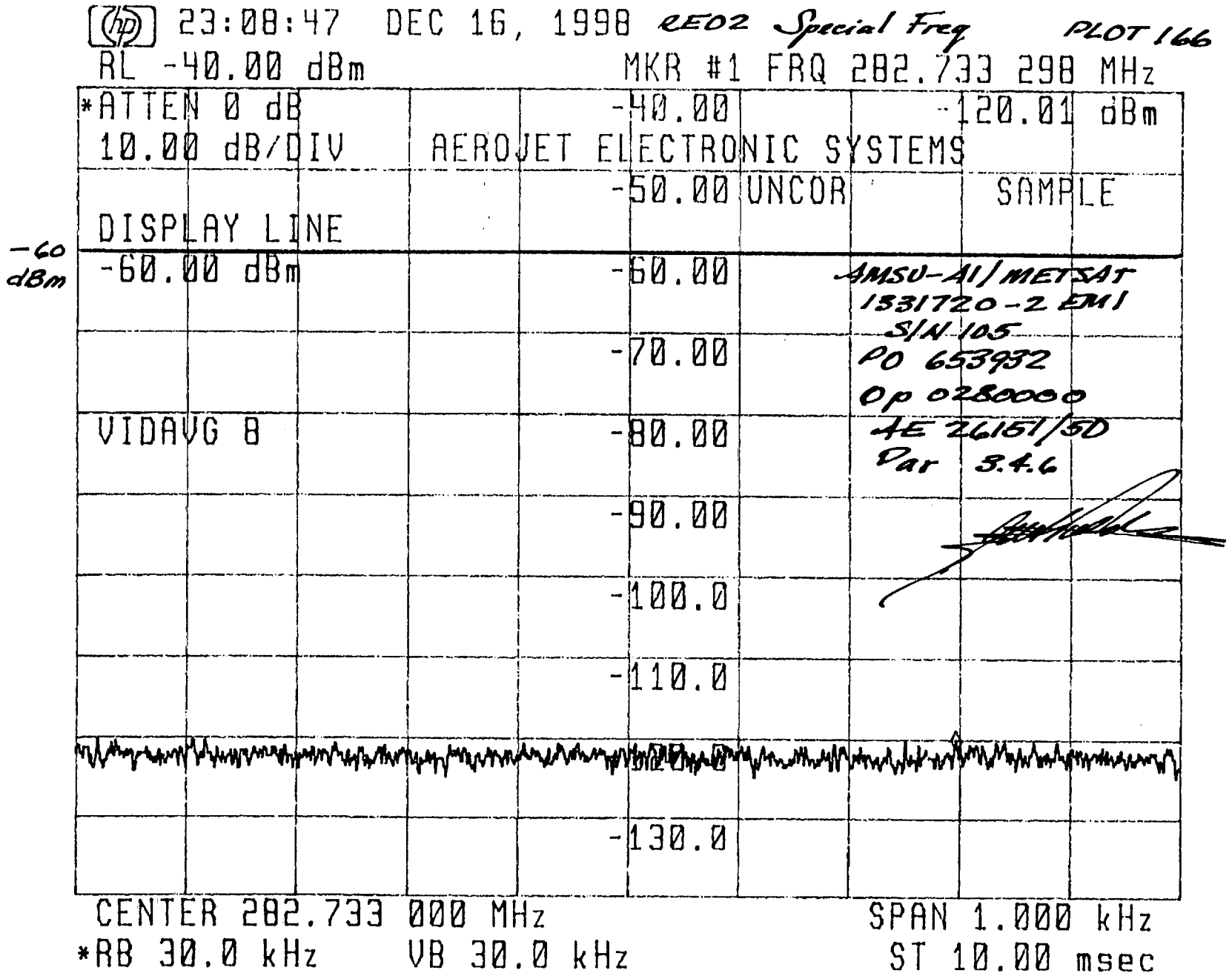

20:39:29 DEC 16, 1998 RE02(SARE&SARP) PLOT 161
RL -80.00 dBm Ant: Vertical
MKR #1 FRQ 402.798 MHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-142.72 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 653952
Op 0280000
FE 26151/5D
Par 3.4.6
RES BANDWIDTH
300 Hz
-100.0
-110.0
VIDAVG 8
-120.0
-125 dBm
-130.0
-140.0
-150.0
-160.0
-170.0
START 401.800 MHz
STOP 406.000 MHz
*RB 300 Hz
VB 300 Hz
ST 140.0 sec

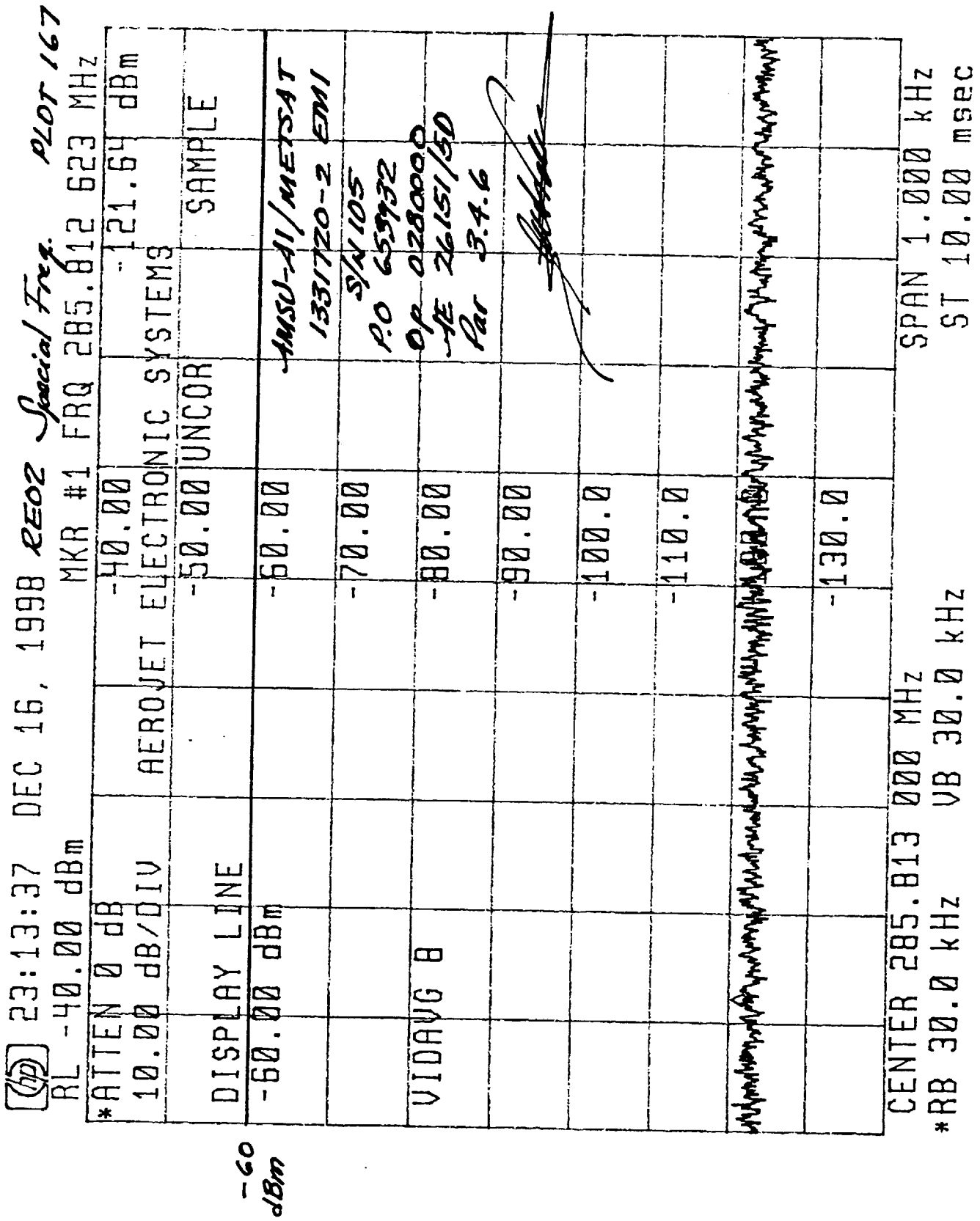

00:26:37 DEC 17, 1998 REO2 Special Freq. PLOT 162
RL -40.00 dBm
MKR #1 FRQ 59.457 690 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-120.78 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60 dBm
-60.00 dBm
-60.00
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
Op 653932
PO 0280000
JE 26151/5D
Par 3.4.6
-70.00
VIDAVG 8
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
CENTER 59.458 000 MHz
SPAN 1.000 kHz
*RB 30.0 kHz
VB 30.0 kHz
ST 10.00 msec

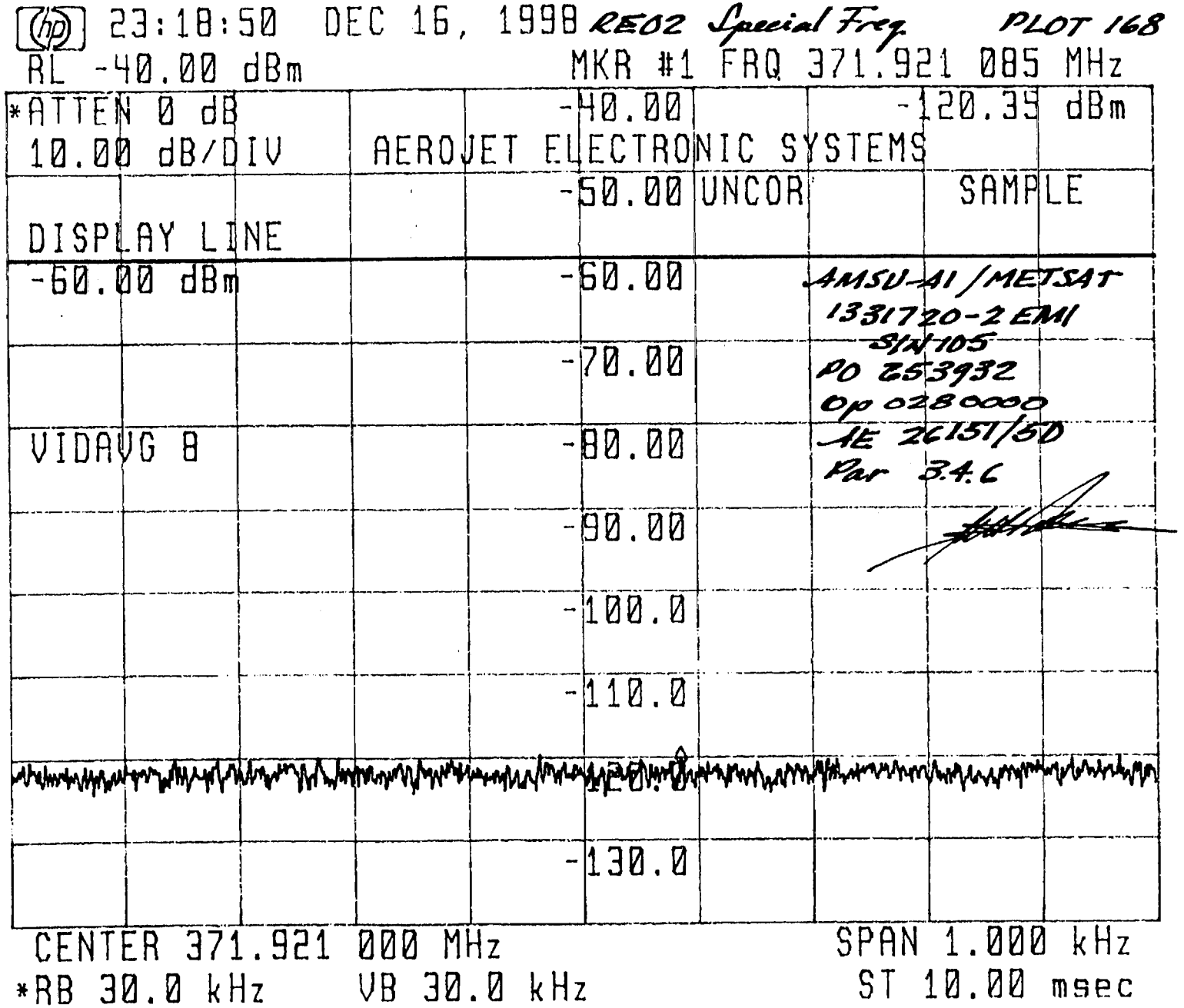

00:31:19 DEC 17, 1998 RE02 Special Freq. PLOT 163
RL -40.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
DISPLAY LINE
-60.00 dBm
VIDAVG 8
MKR #1 FRQ 50.099 981 MHz
-40.00 120.89 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR SAMPLE
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
P.O. 459932
OP 0280000
AE 2161/50
Par 5.4.6
CENTER 60.100 000 MHz
*RB 30.0 kHz VB 30.0 kHz
SPAN 1.000 kHz
ST 10.00 msec
-60 dBm

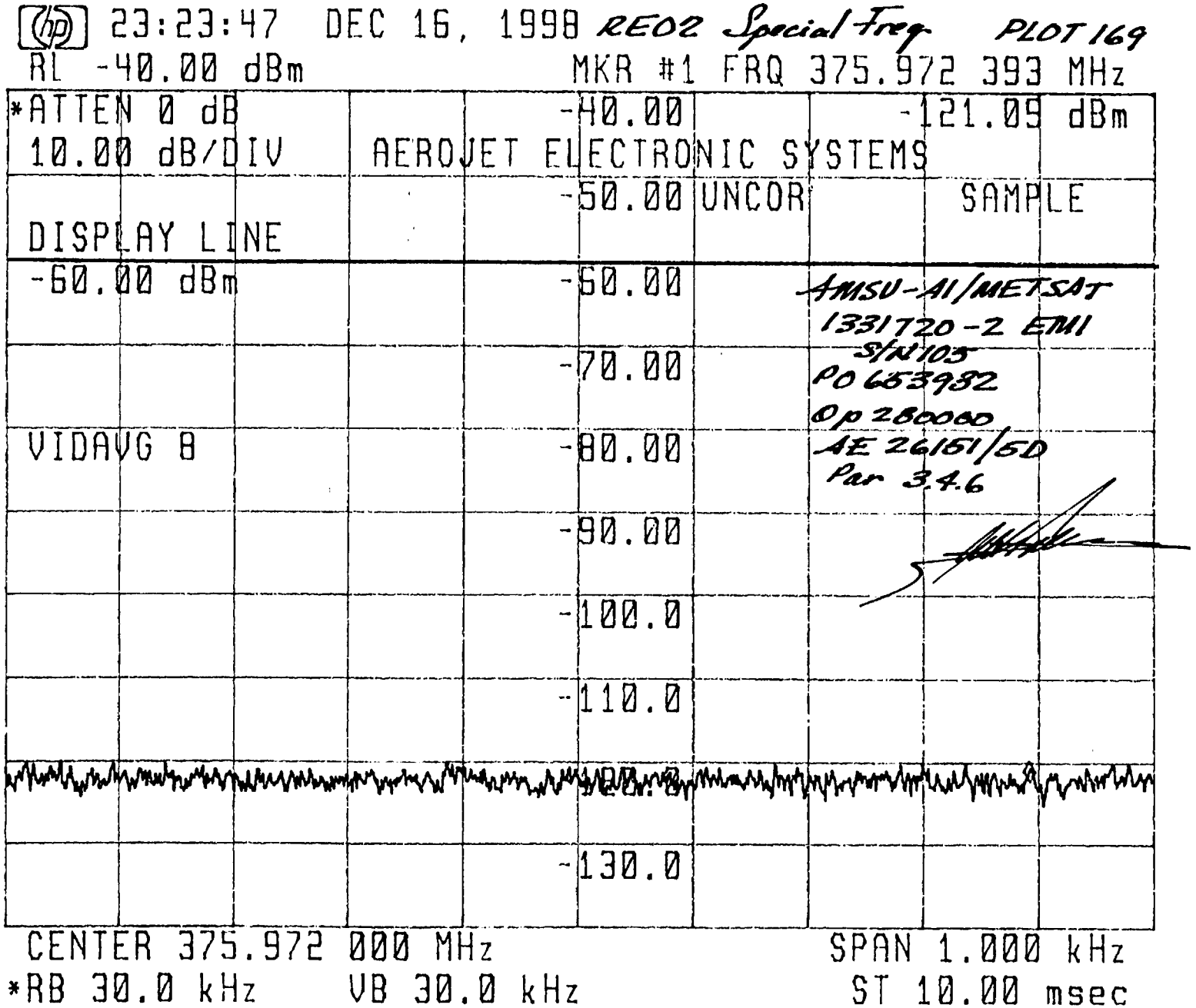

00:35:41 DEC 17, 1998 RE02 Special Freq. PLOT 164
RL -40.00 dBm MKR #1 FRQ 141.360 059 MHz
*ATTEN 0 dB -119.76 dBm
10.00 dB/DIV AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR SAMPLE
DISPLAY LINE
-50.00 dBm
VIDAVG 8
-40.00
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
CENTER 141.360 000 MHz SPAN 1.000 kHz
*RB 30.0 kHz VB 30.0 kHz ST 10.00 msec
-60 dBm

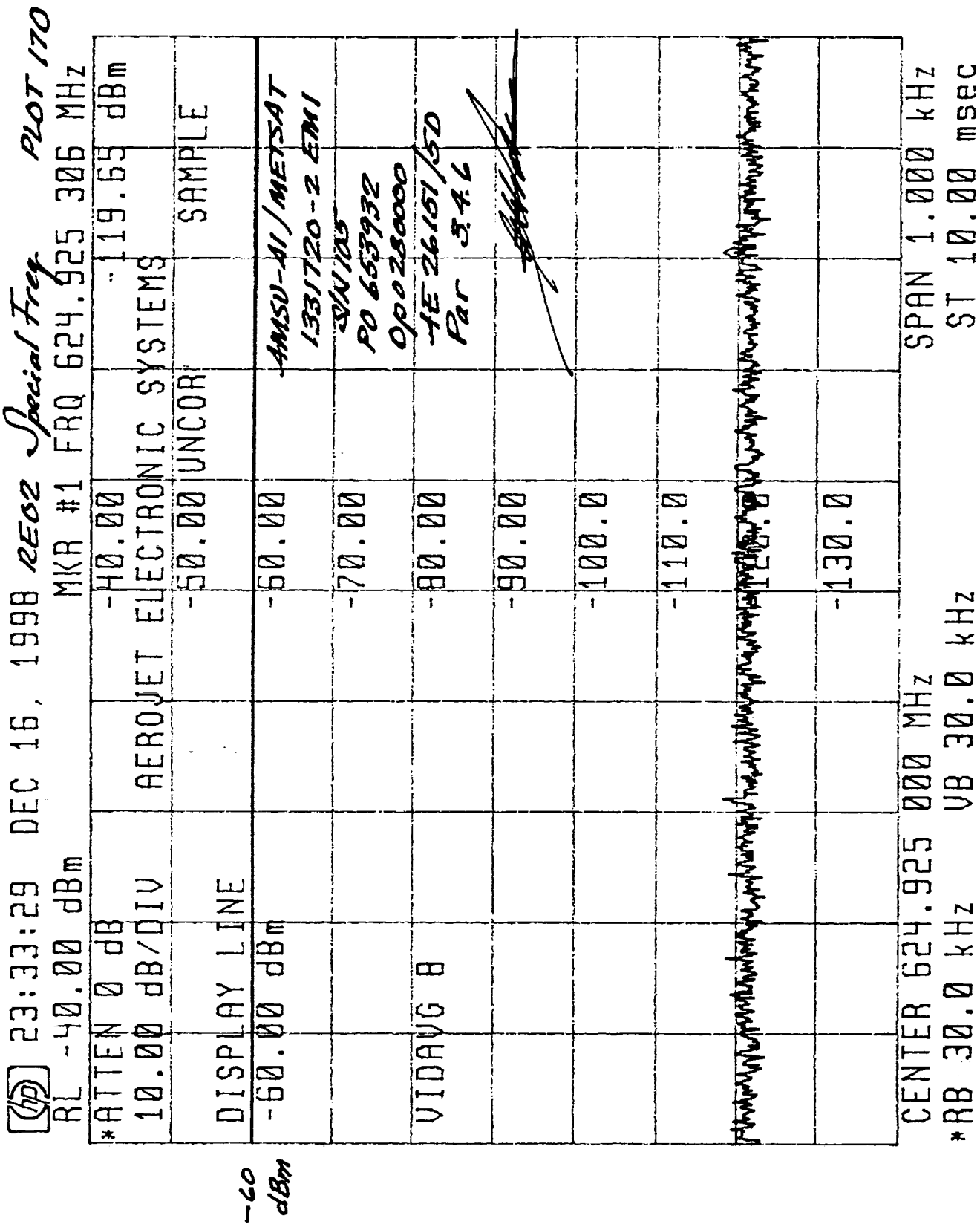

00:22:02 DEC 17, 1998 RE02 Special Freq. PLOT 165
RL -40.00 dBm
MKR #1 FRQ 142.900 333 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-121.15 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60 dBm
-60.00 dBm
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
VIDAVG 8
AMSU-A1/NETSAT
1331720-2 EMI
P.O. 653932
Op 028000
AE 26151/60
Par 3.4.6
CENTER 142.900 000 MHz
SPAN 1.000 kHz
*RB 30.0 kHz
VB 30.0 kHz
ST 10.00 msec

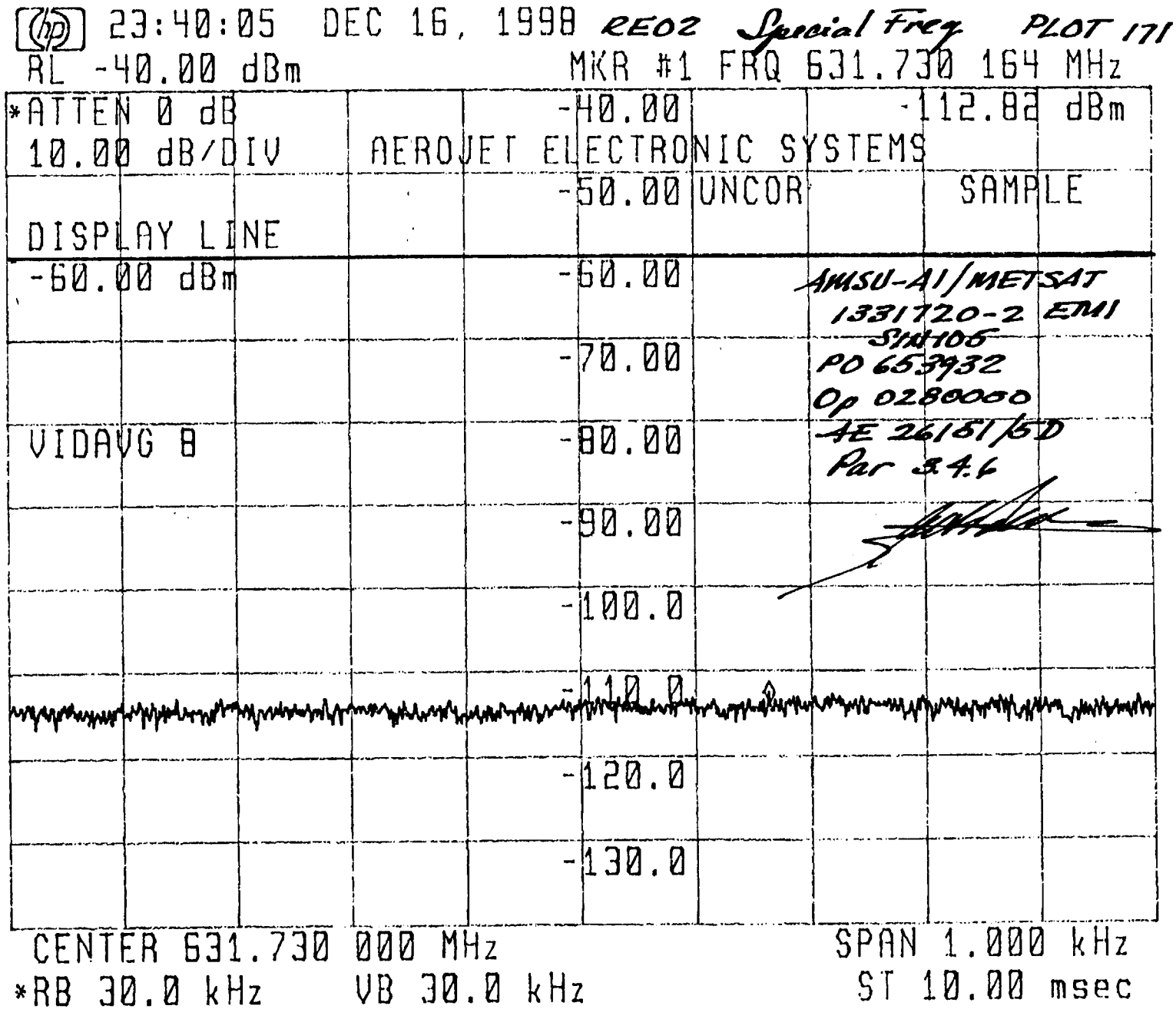

23:08:47 DEC 16, 1998 RE02 Special Freq PLOT 166
RL -40.00 dBm
MKR #1 FRQ 282.733 298 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-120.01 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60 dBm
-60.00 dBm
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
VIDAVG 8
AMSU-A1/METSAT
1531720-2 EM1
S/N 105
PO 653932
Op 0280000
AE 26161/5D
Par 5.4.6
CENTER 282.733 000 MHz
SPAN 1.000 kHz
*RB 30.0 kHz
VB 30.0 kHz
ST 10.00 msec


23:13:37 DEC 16, 1998 RE02 Special Freq. PLOT 167
RL -40.00 dBm
MKR #1 FRQ 285.812 623 MHz
*ATTEN 0 dB
10.00 dB/DIV
AEROJET ELECTRONIC SYSTEMS
-40.00
-50.00 UNCOR
-121.64 dBm
SAMPLE
DISPLAY LINE
-60.00 dBm
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-130.0
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
P.O 653932
OP 028000
SPE 261S1/SD
PAR 3.4.6
VIDAVG 8
-60 dBm
CENTER 285.813 000 MHz
*RB 30.0 kHz
VB 30.0 kHz
SPAN 1.000 kHz
ST 10.00 msec

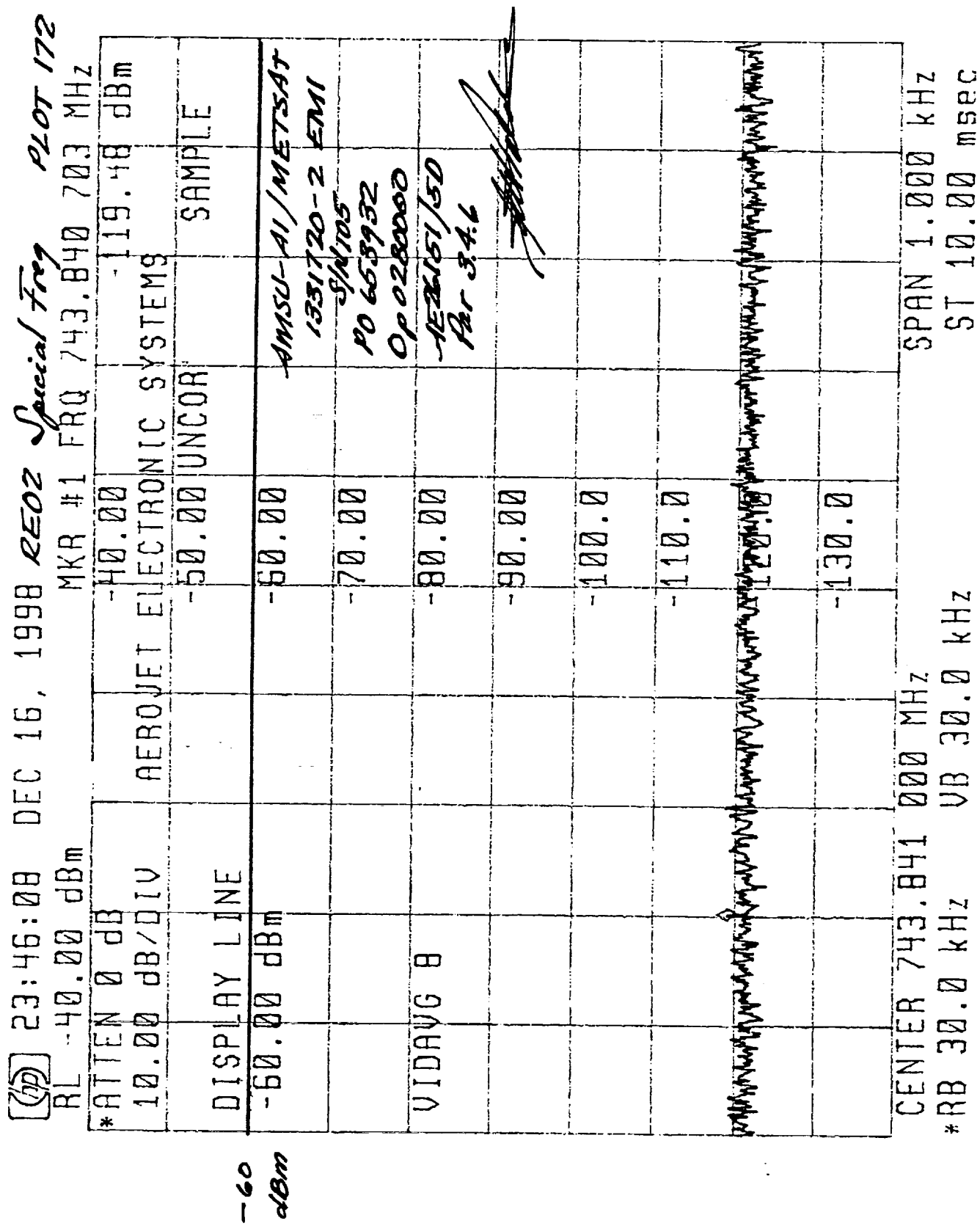

23:18:50 DEC 16, 1998 RE02 Special Freq PLOT 168
RL -40.00 dBm
MKR #1 FRQ 371.921 085 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-120.35 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60 dBm
-60.00 dBm
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
VIDAVG 8
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 253932
Op 0280000
IE 26151/50
Par 3.4.6
CENTER 371.921 000 MHz
SPAN 1.000 kHz
*RB 30.0 kHz
VB 30.0 kHz
ST 10.00 msec


23:23:47 DEC 16, 1998 RE02 Special Freq PLOT 169
RL -40.00 dBm
MKR #1 FRQ 375.972 393 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-121.09 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60 dBm
-60.00 dBm
-50.00
AMSU-A1/METSAT
1331720-2 EMI
S/N 103
PO 653932
Op 280000
AE 26151/5D
Par 3.4.6
-70.00
VIDAVG 8
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
CENTER 375.972 000 MHz
SPAN 1.000 kHz
*RB 30.0 kHz
VB 30.0 kHz
ST 10.00 msec

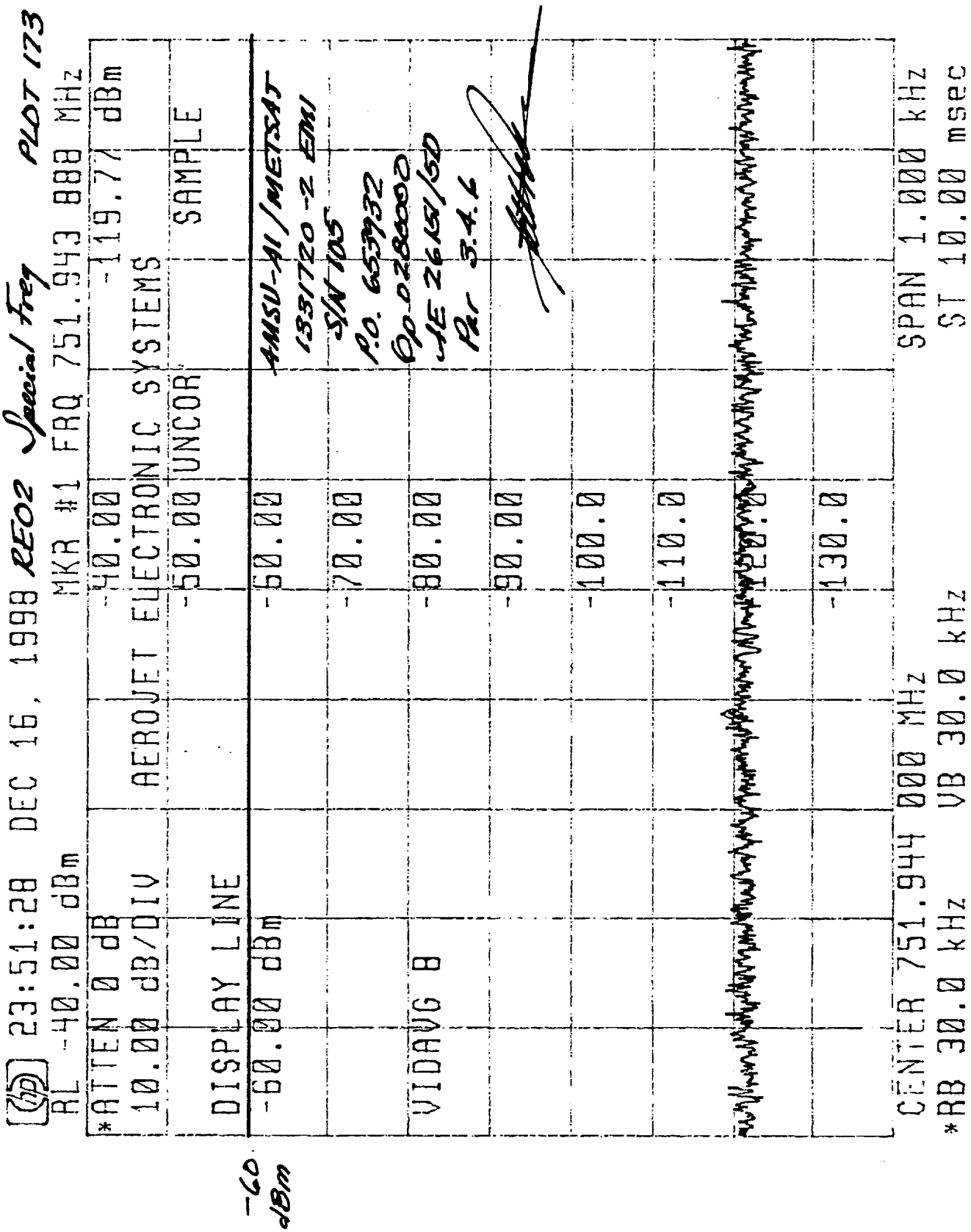

PLOT 170
Special Freq
REO2
23:33:29 DEC 16, 1998
MKR #1 FRQ 624.925 306 MHz
RL -40.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
DISPLAY LINE
-60.00 dBm
VIDAVG 8
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-119.65 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/METSAT
133120-2 EMI
S/N 105
PO 653932
Spec 228000
HE 26151/SD
Par 3.4.1
-60 dBm
CENTER 624.925 000 MHz
*RB 30.0 kHz
VB 30.0 kHz
SPAN 1.000 kHz
ST 10.00 msec


23:40:05 DEC 16, 1998 REO2 Special Freq PLOT 171
RL -40.00 dBm
MKR #1 FRQ 631.730 164 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-112.82 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60.00 dBm
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
VIDAVG 8
AMSU-A1/METSAT
1331720-2 EMI
S/N105
PO 653932
Op 0280000
4E 26151/5D
Par 3.4.6
CENTER 631.730 000 MHz
SPAN 1.000 kHz
*RB 30.0 kHz
VB 30.0 kHz
ST 10.00 msec

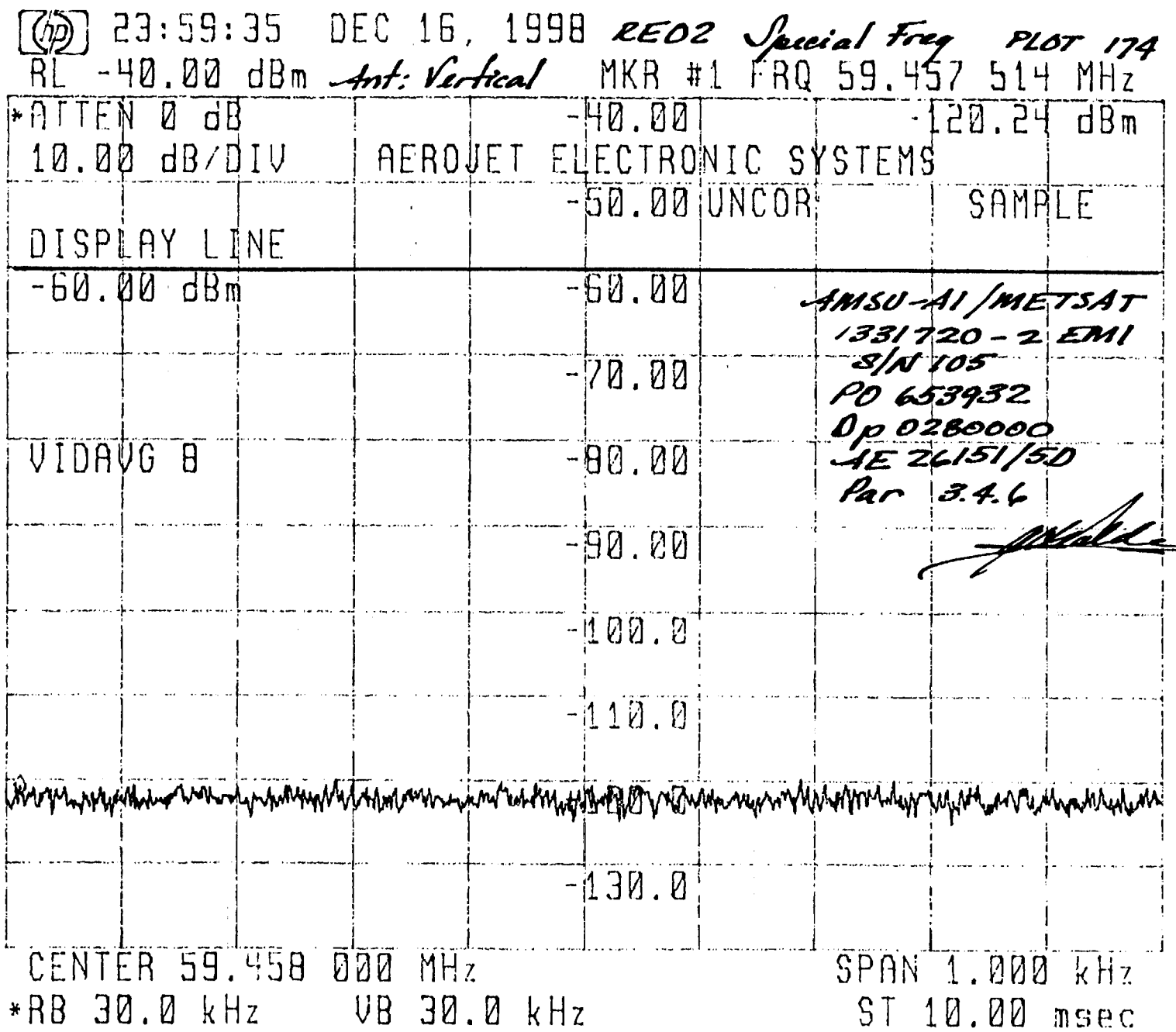
-60 dBm

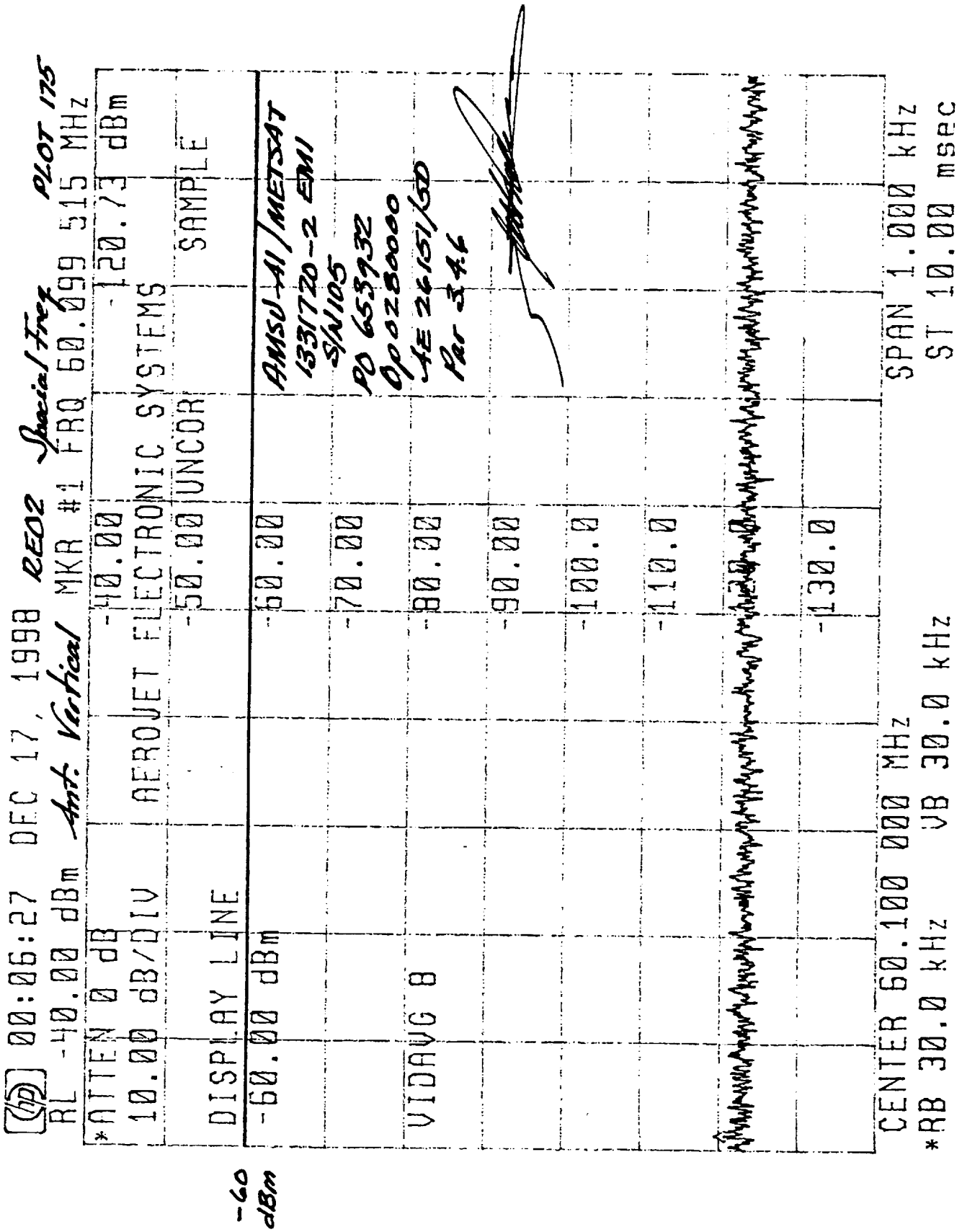

23:46:08 DEC 16, 1998 REO2 Special Frq PLOT 172
RL -40.00 dBm
MKR #1 FRQ 743.840 703 MHz
*ATTEN 0 dB
10.00 dB/DIV
DISPLAY LINE
-60.00 dBm
VIDAVG 8
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-119.48 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
AMSU-A1/METSAT
133120-2 EMI
S/N105
PO 658932
Op 028000
REV G1/SD
Par 3.4.1
CENTER 743.841 000 MHz
*RB 30.0 kHz
VB 30.0 kHz
SPAN 1.000 kHz
ST 10.000 msec
-60 dBm

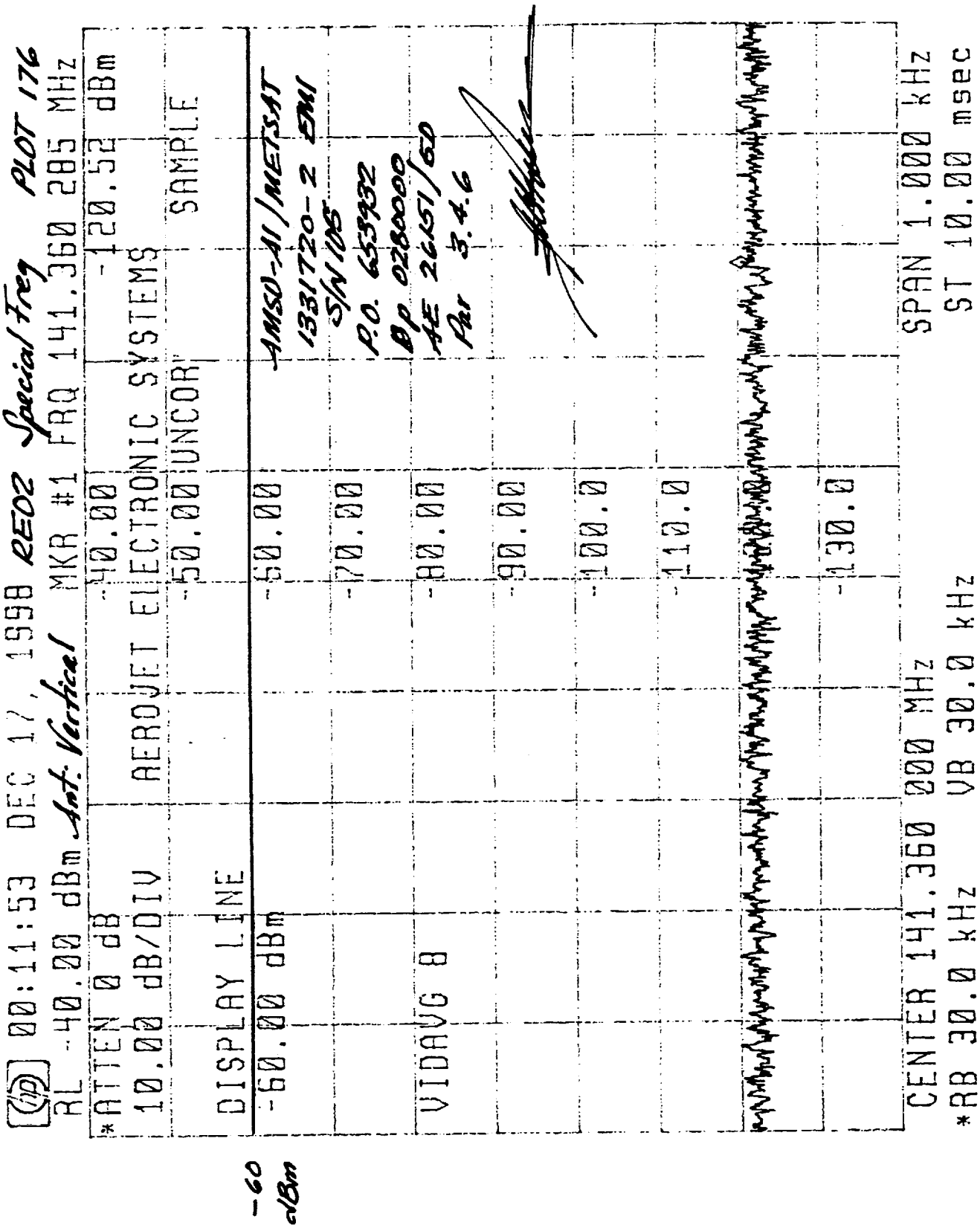
(H)

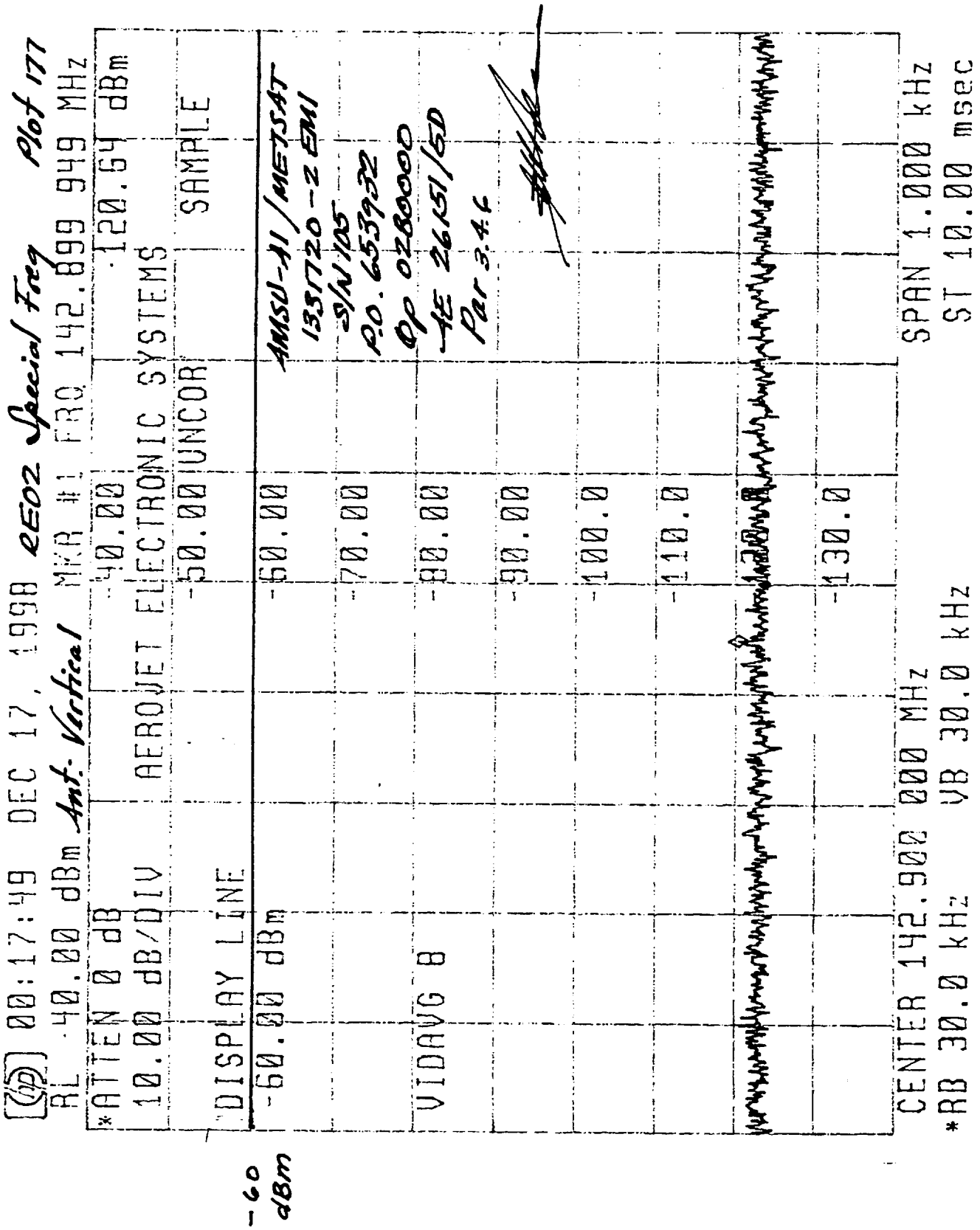

23:51:28 DEC 16, 1998 RE02 Special Freq PLOT 173
RL -40.00 dBm
MKR #1 FRQ 751.943 888 MHz
*ATTEN 0 dB -40.00 -119.77 dBm
10.00 dB/DIV AEROJET ELECTRONIC SYSTEMS -50.00 UNCOR SAMPLE
DISPLAY LINE -60.00 dBm
VIDAVG 8
AMSU-A1/METSAT
133720 -2 EMI
S/N 105
P.O. 653932
Op.028000
TE 26151/SD
Par 3.4.6
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
CENTER 751.944 000 MHz
SPAN 1.000 kHz
*RB 30.0 kHz VB 30.0 kHz ST 10.00 msec
-60 dBm

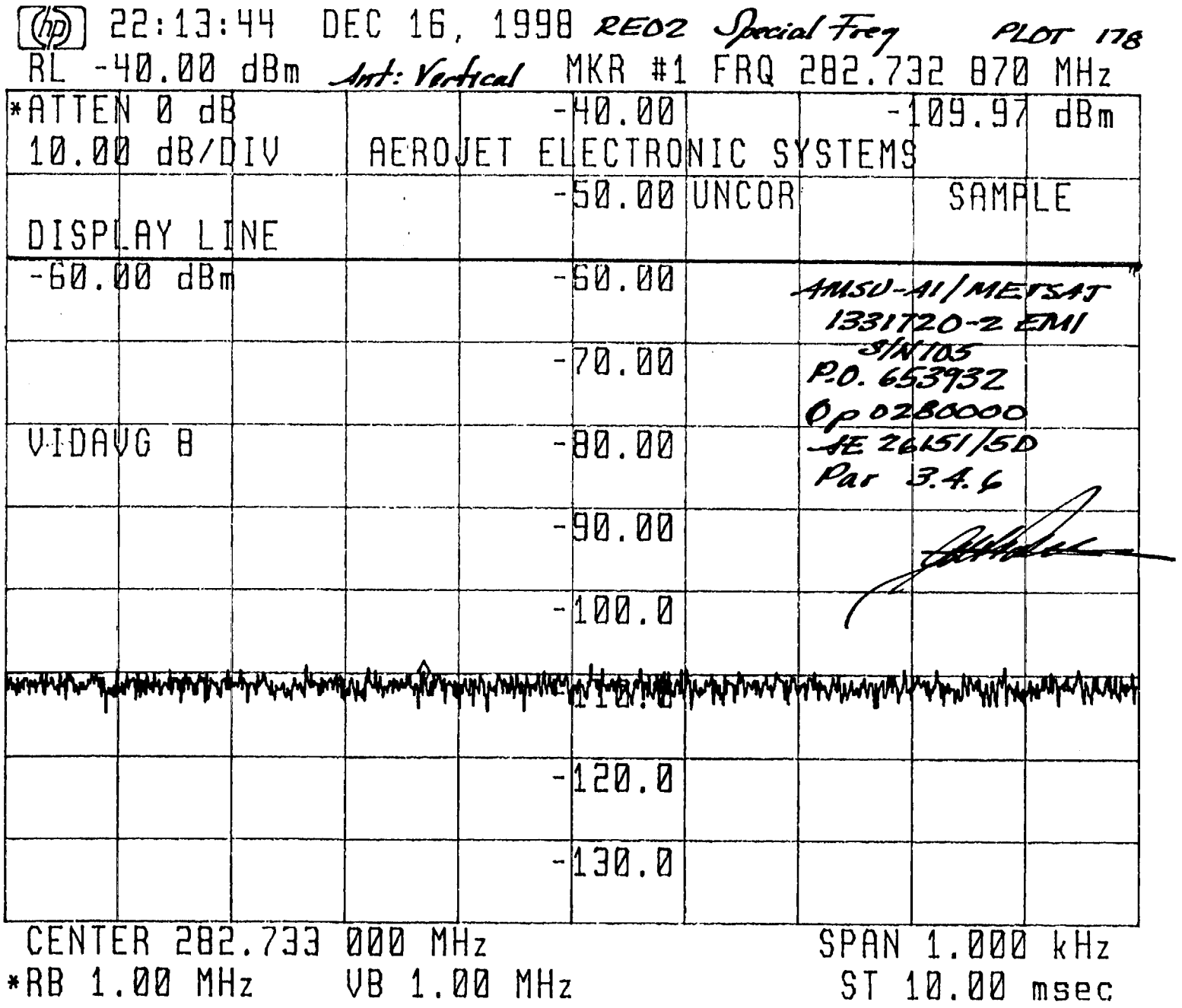
(V)


23:59:35 DEC 16, 1998 REO2 Special Freq PLOT 174
RL -40.00 dBm Ant: Vertical MKR #1 FRQ 59.457 514 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-120.24 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60 dBm
-60.00 dBm
-60.00
-70.00
-80.00
VIDAVG 8
-90.00
-100.0
-110.0
-120.0
-130.0
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
PO 653932
Op 0280000
4E 26151/5D
Par 3.4.6
CENTER 59.458 000 MHz
SPAN 1.000 kHz
*RB 30.0 kHz
VB 30.0 kHz
ST 10.00 msec


00:06:27 DEC 17, 1998
REQ2
Special Freq
PLOT 175
RL -40.00 dBm
Ant: Vertical
MKR #1 FRQ 60.099 515 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-120.73 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60.00 dBm
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-130.0
VIDAVG 8
AMSU-A1/METSAT
1331720-2 EMI
S/N105
PO 653932
Opo28000
4E 26151/GD
Par 3.4.6
CENTER 60.100 000 MHz
SPAN 1.000 kHz
*RB 30.0 kHz
VB 30.0 kHz
ST 10.00 msec
-60 dBm

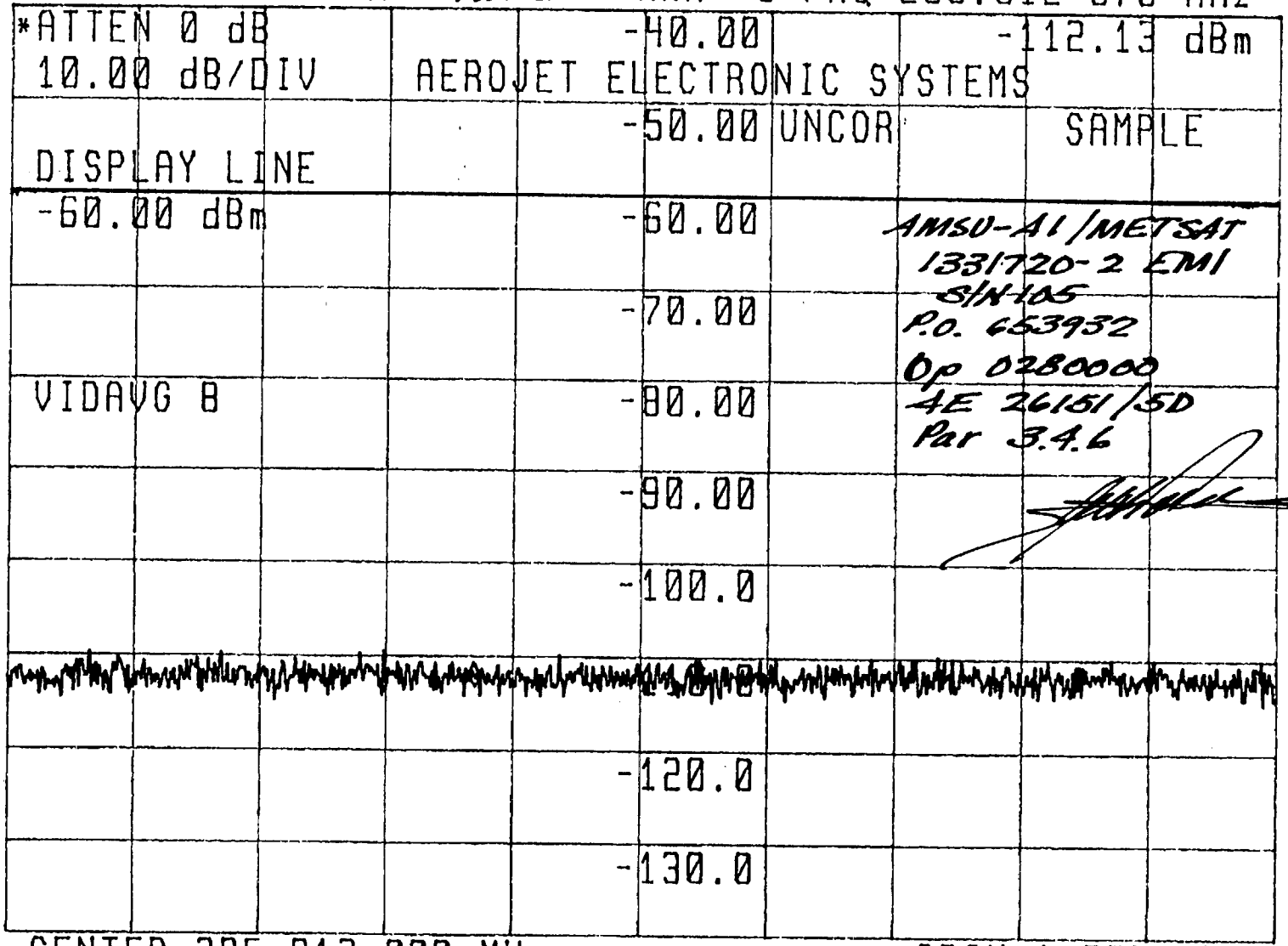

00:11:53 DEC 17, 1998 REO2 Special Freq PLOT 176
RL -40.00 dBm Ant. Vertical MKR #1 FRQ 141.360 285 MHz
*ATTEN 0 dB -40.00 -120.52 dBm
10.00 dB/DIV AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR SAMPLE
DISPLAY LINE -60.00
-60.00 dBm -70.00
VIDAVG 8 -80.00
-90.00
-100.0
-110.0
-130.0
AMSO-AI/METSAT
133720-2 EMI
S/N 105
P.O. 653932
Bp 028000
RE 26451/60
Par 3.4.6
CENTER 141.360 000 MHz SPAN 1.000 kHz
*RB 30.0 kHz VB 30.0 kHz ST 10.00 msec
-60 dBm


00:17:49 DEC 17, 1998 2E02 Special Freq
RL 40.00 dBm Ant. Vertical MKR #1 FRQ 142.899 949 MHz
*ATTEN 0 dB
10.00 dB/DIV
DISPLAY LINE
-60.00 dBm
VIDAVG 8
40.00
-50.00 UNCOR
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-130.0
AEROJET ELECTRONIC SYSTEMS
SAMPLE
120.64 dBm
AMSU-A1/METSAT
1351720-2 EM1
S/N 105
P.O. 6539232
Op 0280000
HE 26151/80
Par 3.4.6
CENTER 142.900 000 MHz
*RB 30.0 kHz
VB 30.0 kHz
SPAN 1.000 kHz
ST 10.00 msec
-60 dBm


22:13:44 DEC 16, 1998 RE02 Special Freq PLOT 178
RL -40.00 dBm Ant: Vertical MKR #1 FRQ 282.732 870 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-109.97 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60 dBm
-60.00 dBm
-50.00
AMSU-A1/METSAT
1331720-2 EMI
S/N105
P.O. 653932
Op 0280000
SE 26151/5D
Par 3.4.6
-70.00
VIDAVG 8
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
CENTER 282.733 000 MHz
SPAN 1.000 kHz
*RB 1.00 MHz
VB 1.00 MHz
ST 10.00 msec

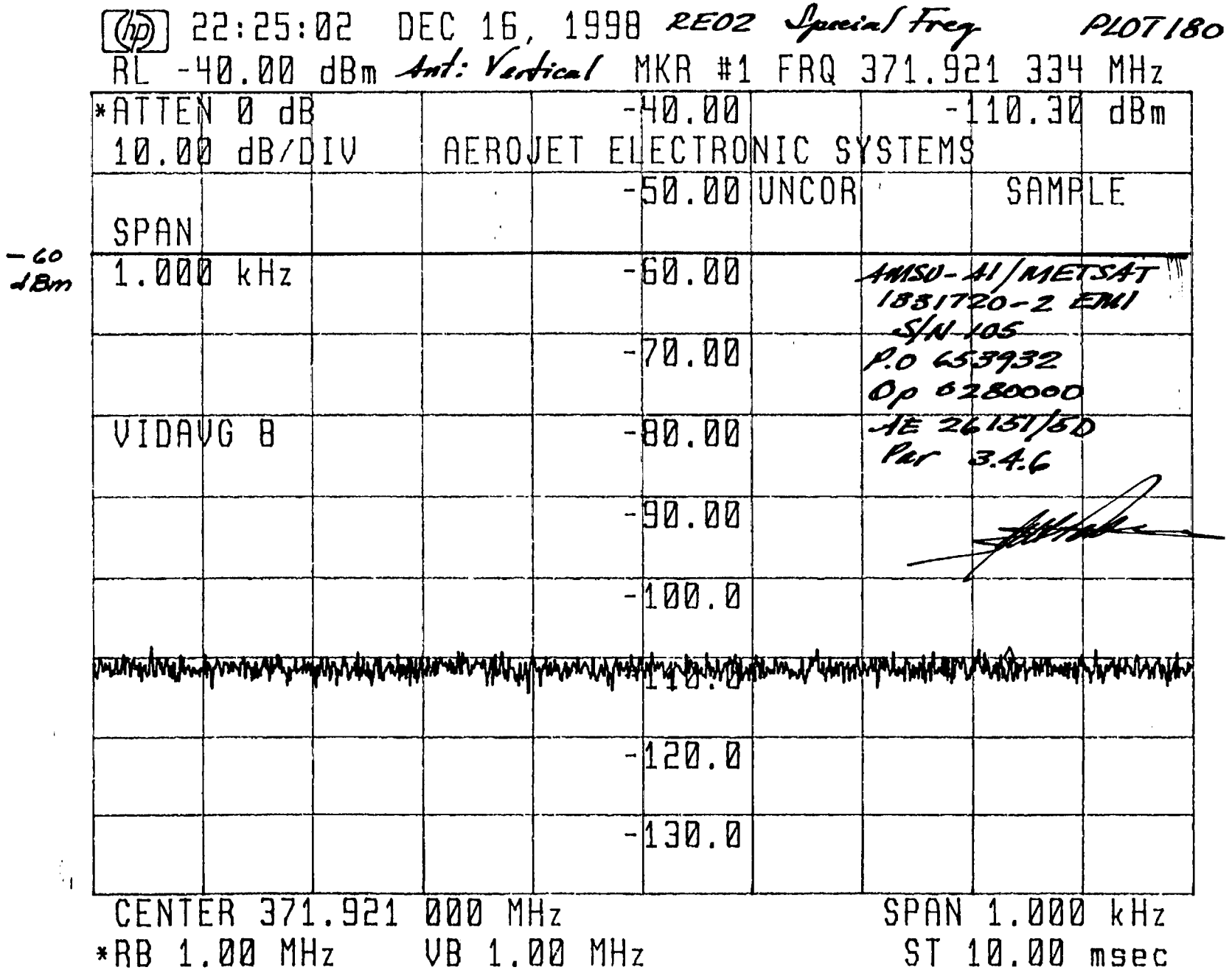
(V)

22:18:50 DEC 16, 1998 RE02 Special Freq PLOT 179
RL -40.00 dBm Ant: Vertical MKR #1 FRQ 285.812 870 MHz



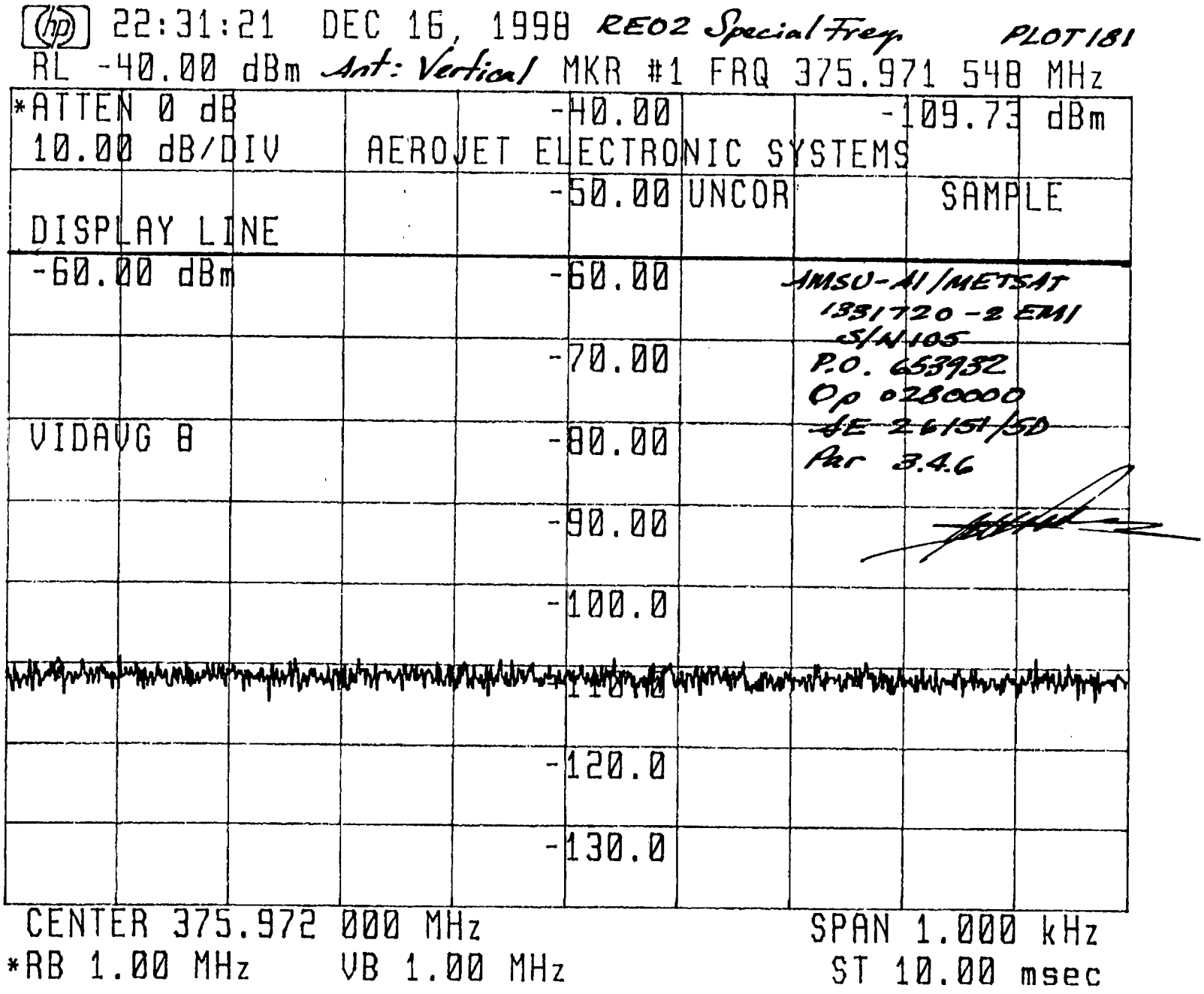
-60 dBm

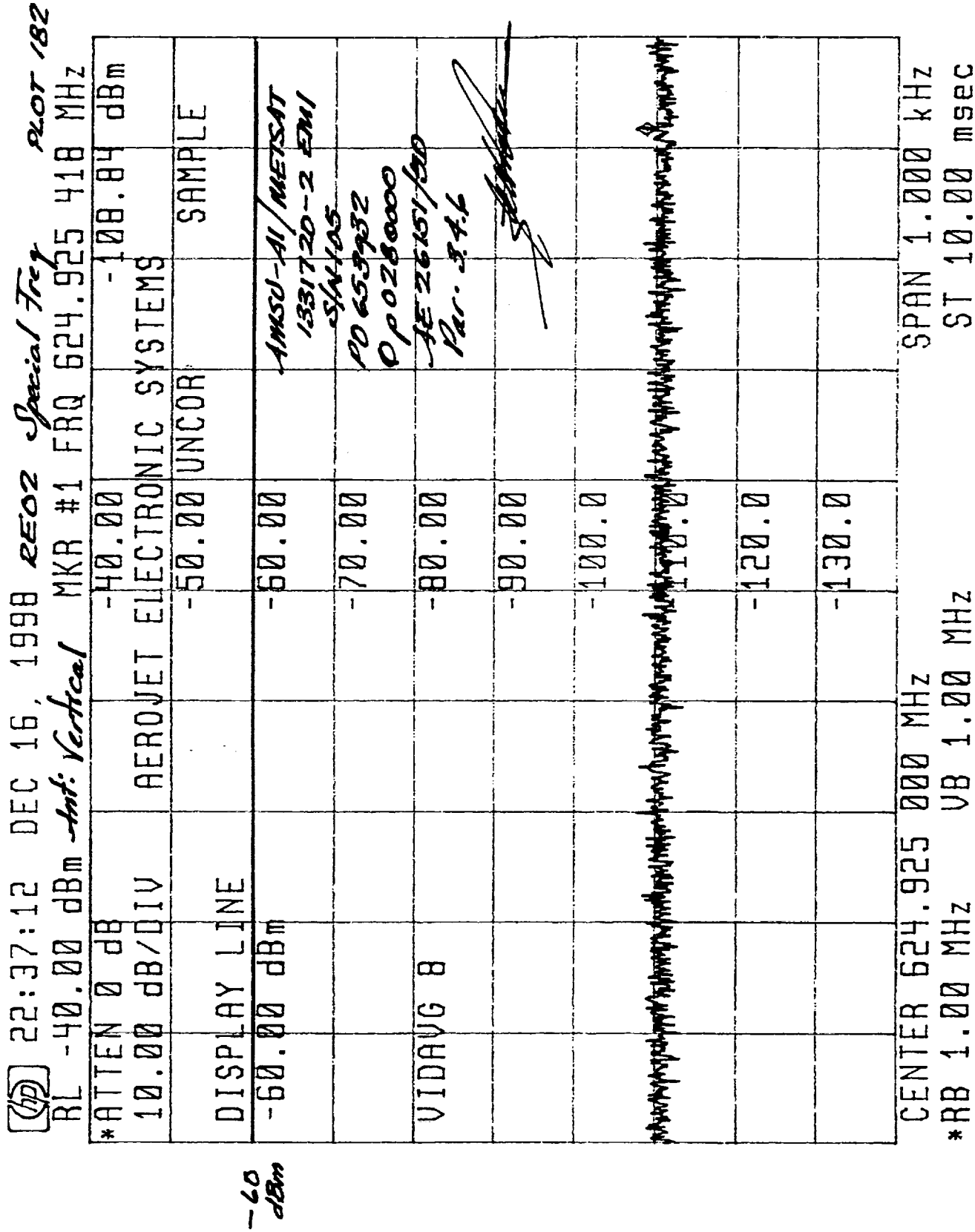
CENTER 285.813 000 MHz
SPAN 1.000 kHz
*RB 1.00 MHz
VB 1.00 MHz
ST 10.00 msec


22:25:02 DEC 16, 1998 RE02 Special Freq PLOT 180
RL -40.00 dBm Ant: Vertical MKR #1 FRQ 371.921 334 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-110.30 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
SPAN
1.000 kHz
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
AMSU-A1/METSAT
1851720-2 EMI
S/N 105
P.O 653932
Op 6280000
AE 26131/5D
Par 3.4.6
CENTER 371.921 000 MHz
SPAN 1.000 kHz
*RB 1.00 MHz
VB 1.00 MHz
ST 10.00 msec

-60 dBm

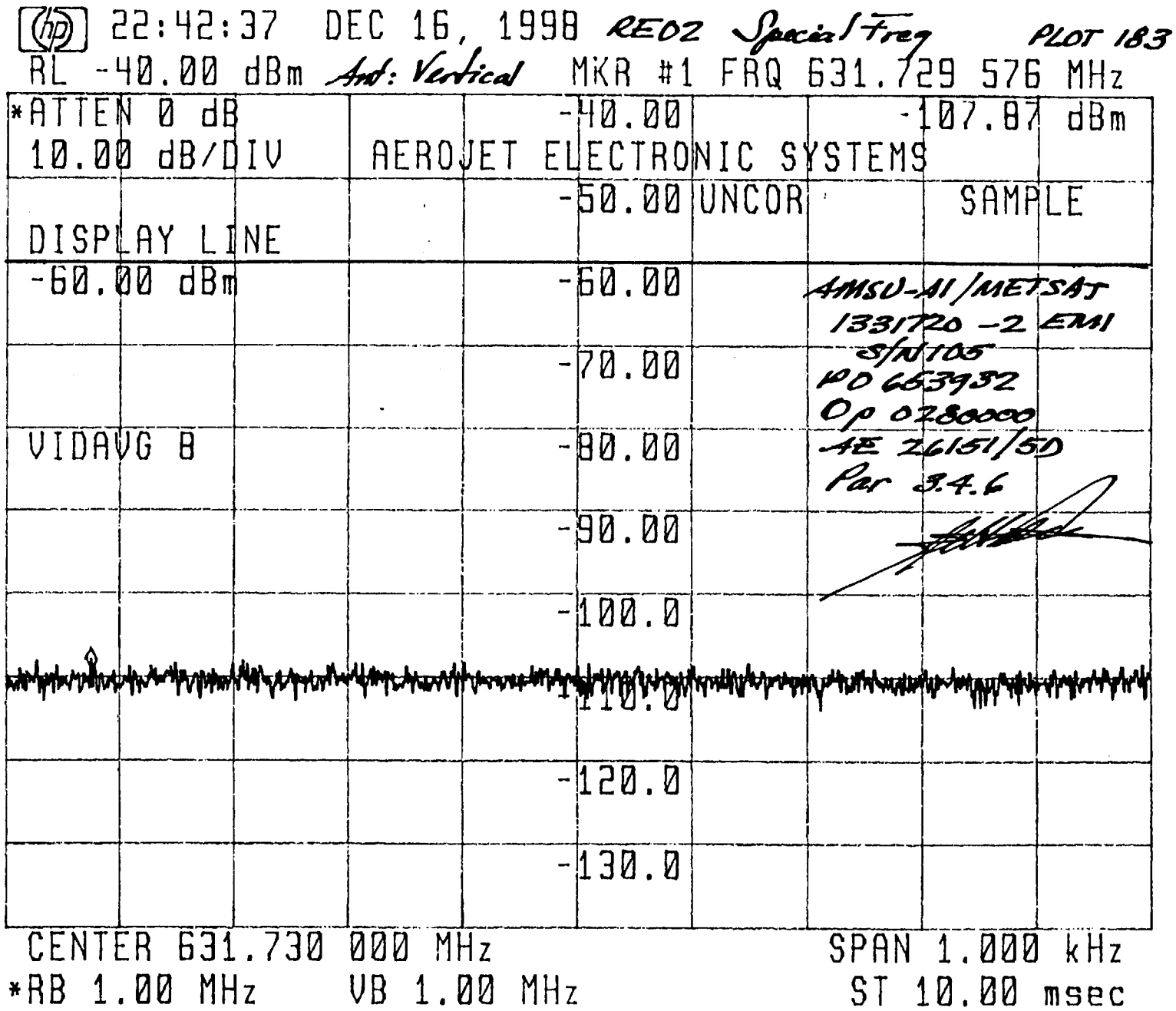
(V)

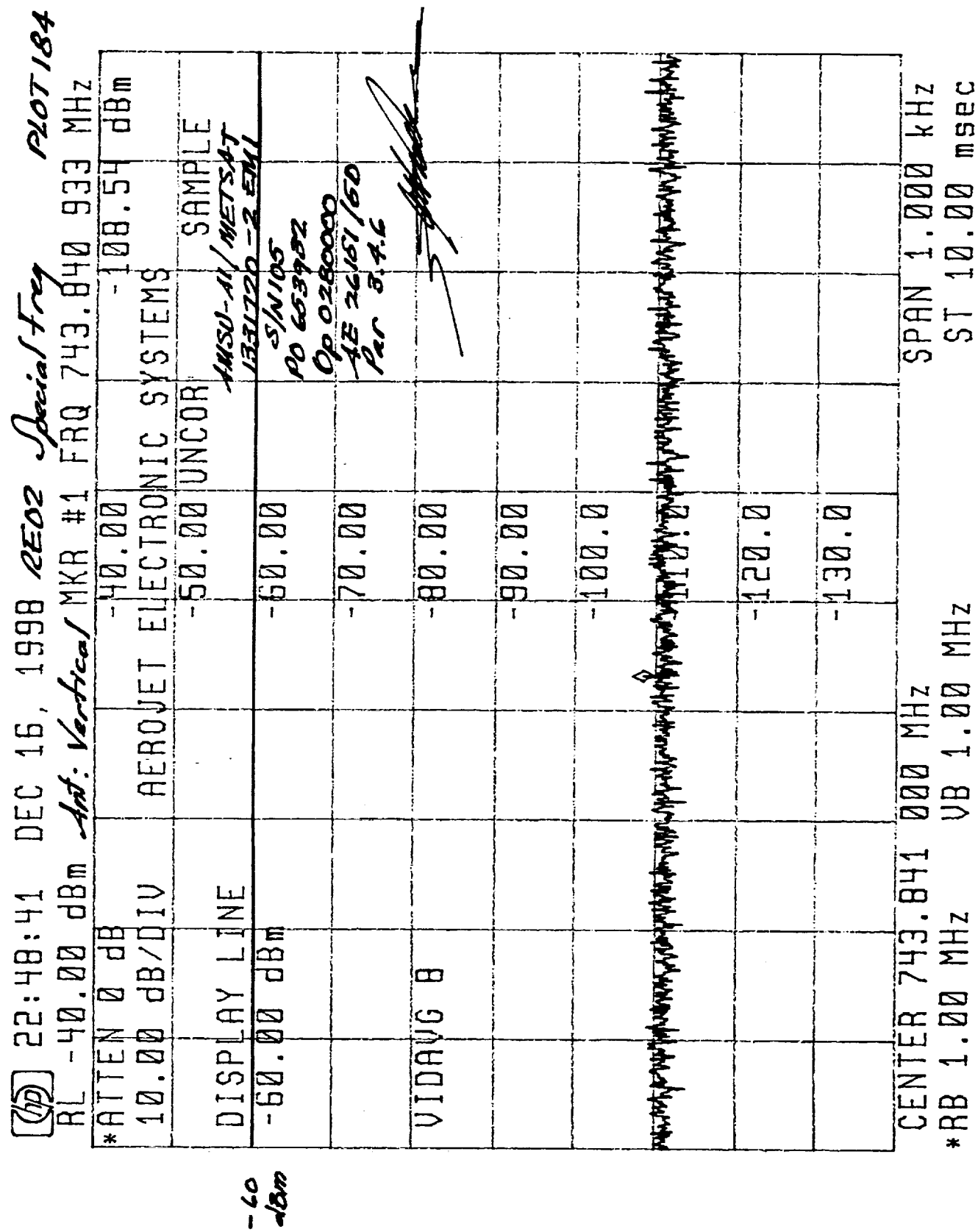

22:31:21 DEC 16, 1998 RE02 Special Freq PLOT 181
RL -40.00 dBm Ant: Vertical MKR #1 FRQ 375.971 548 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-109.73 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60 dBm
-60.00 dBm
-60.00
-70.00
VIDAVG 8
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
P.O. 653932
Op 0280000
dE 26151/5D
Par 3.4.6
CENTER 375.972 000 MHz
SPAN 1.000 kHz
*RB 1.00 MHz
VB 1.00 MHz
ST 10.00 msec

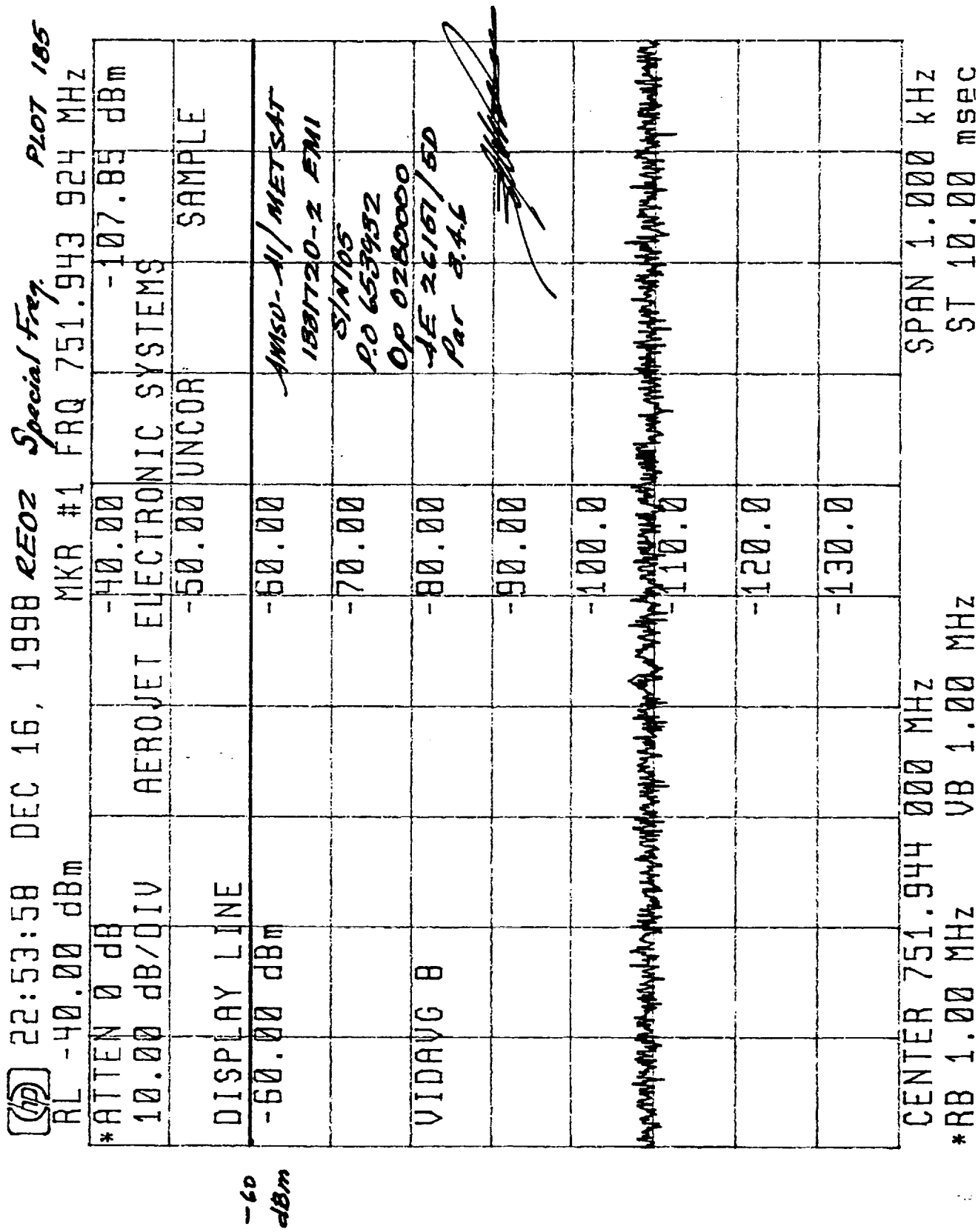

22:37:12 DEC 16, 1998 REQ2 Special Freq PLOT 182
RL -40.00 dBm Ant: Vertical MKR #1 FRQ 624.925 418 MHz
*ATTEN 0 dB
10.00 dB/DIV
DISPLAY LINE
-60.00 dBm
VIDAVG 8
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-100.84 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/NOAA
1331720-2 EM1
S/N105
PO 659932
PO 0028000
SE 26151/50
Par. 3.4.4
CENTER 624.925 000 MHz
*RB 1.00 MHz
VB 1.00 MHz
SPAN 1.000 kHz
ST 10.00 msec

-60 dBm

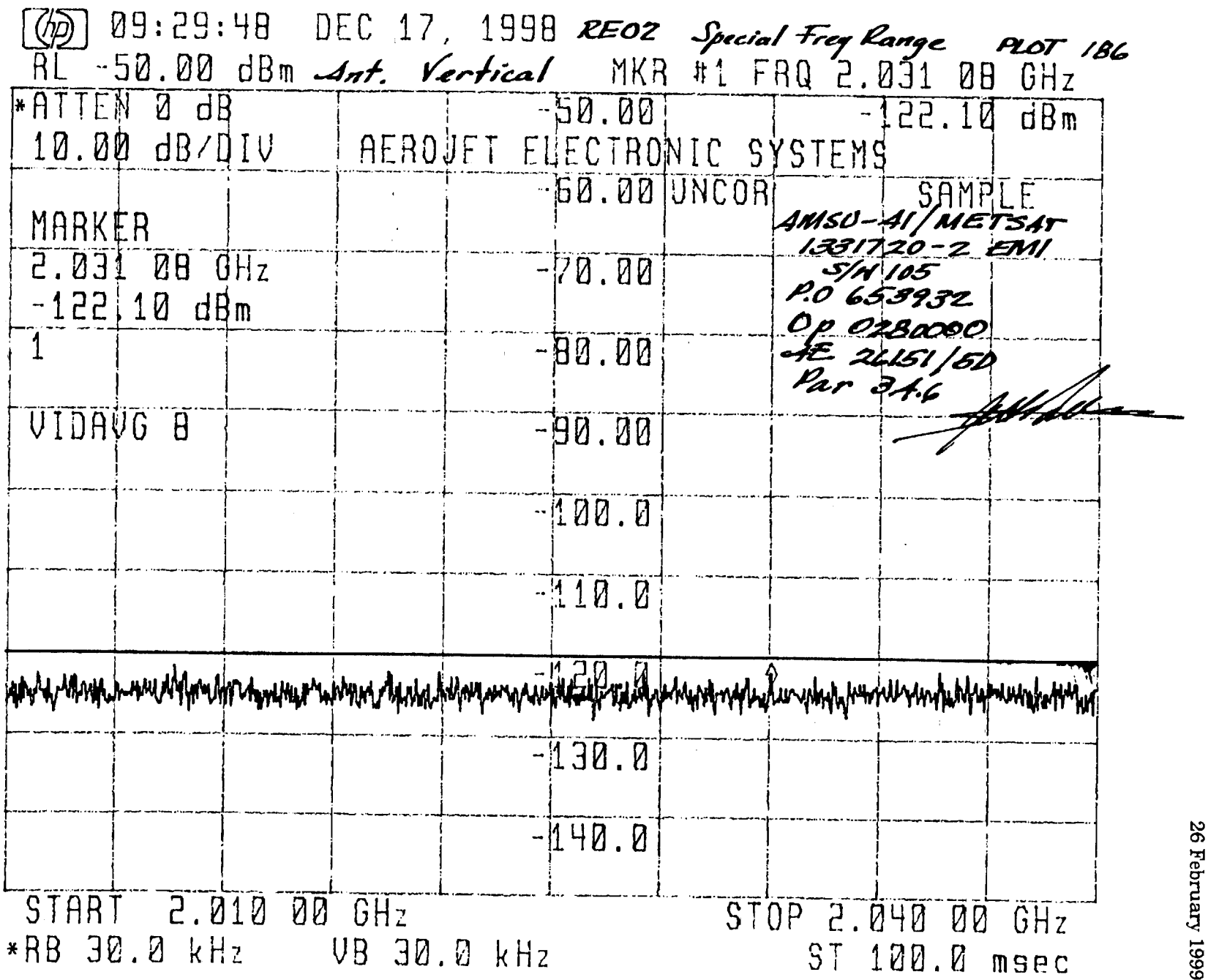
(V)


22:42:37 DEC 16, 1998 REQ2 Special Freq PLOT 183
RL -40.00 dBm Ant: Vertical MKR #1 FRQ 631.729 576 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-107.87 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60 dBm
-60.00 dBm
-60.00
AMSU-A1/METSAT
133720-2 EMI
S/N 105
PO 653932
Op 028000
4E 26151/5D
Par 3.4.6
-70.00
VIDAVG B
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
CENTER 631.730 000 MHz
SPAN 1.000 kHz
*RB 1.00 MHz
VB 1.00 MHz
ST 10.00 msec


22:48:41 DEC 16, 1998 RE02 Spacial Freq PLOT 184
RL -40.00 dBm Ant: Vertical MKR #1 FRQ 743.840 933 MHz
*ATTEN 0 dB
10.00 dB/DIV
DISPLAY LINE
-60.00 dBm
VIDAVG 8
AEROJET ELECTRONIC SYSTEMS
-40.00
-50.00 UNCOR
SAMPLE
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-108.54 dBm
CENTER 743.841 000 MHz
*RB 1.00 MHz
VB 1.00 MHz
SPAN 1.000 kHz
ST 10.00 msec

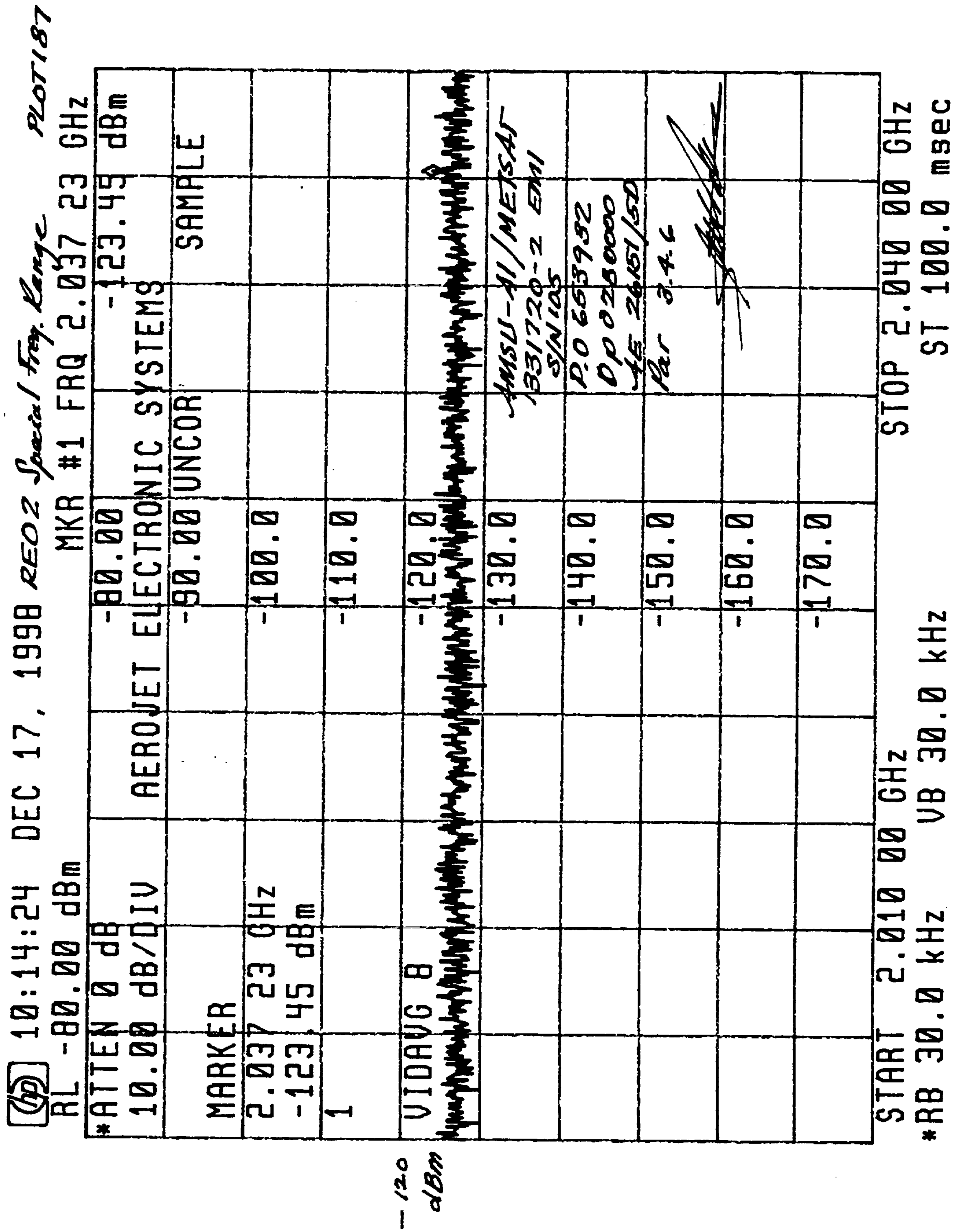

22:53:58 DEC 16, 1998 EE02 Special Frq. PLOT 185
RL -40.00 dBm
MKR #1 FRQ 751.943 924 MHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-107.85 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
DISPLAY LINE
-60.00 dBm
VIDAVG 8
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
AMSU-A1/METSAT
183T20-2 EMI
S/N105
P.O 653932
Op 0280000
IE 26167/80
Par 3.4.6
CENTER 751.944 000 MHz
SPAN 1.000 kHz
*RB 1.00 MHz
VB 1.00 MHz
ST 10.00 msec

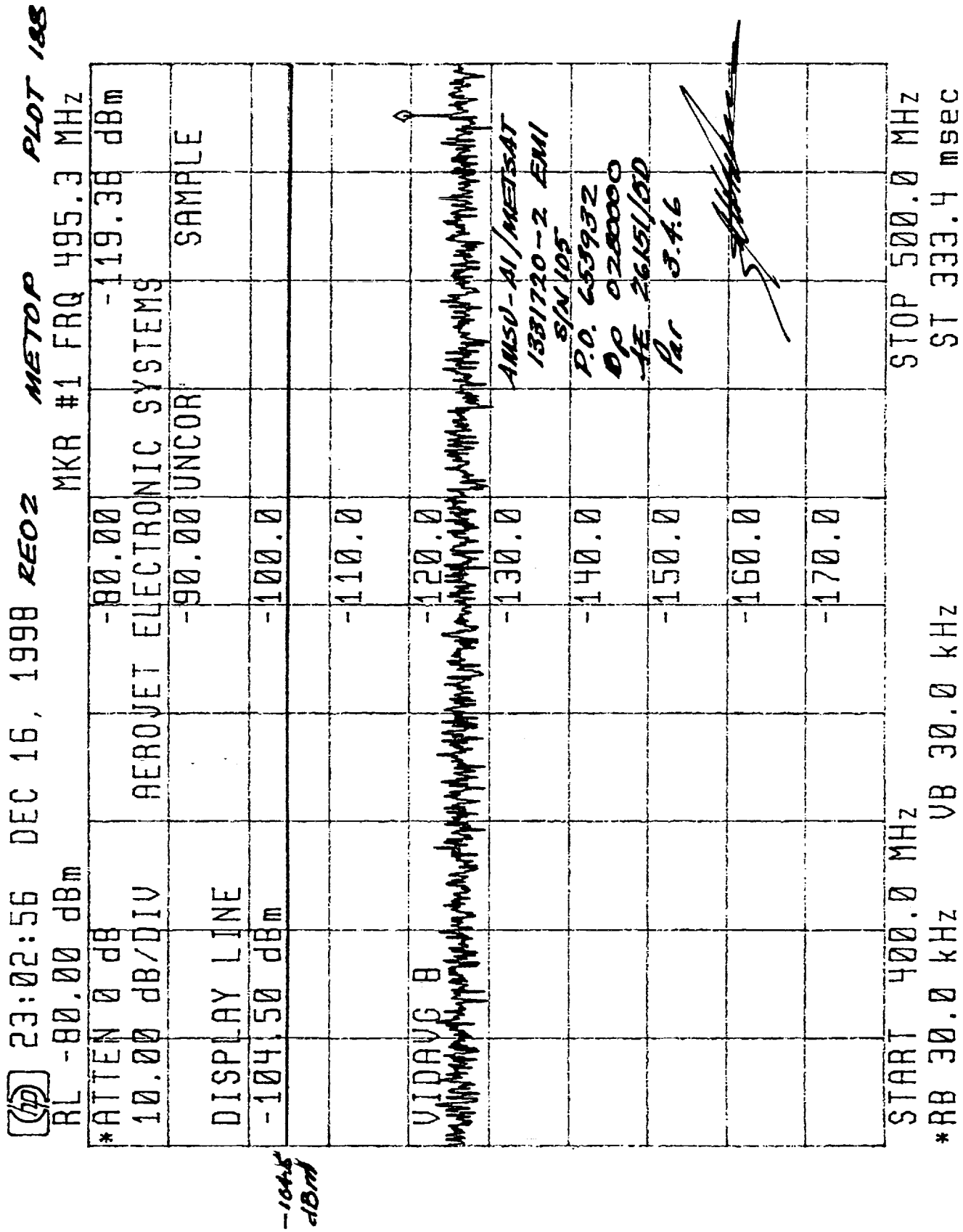
-60 dBm

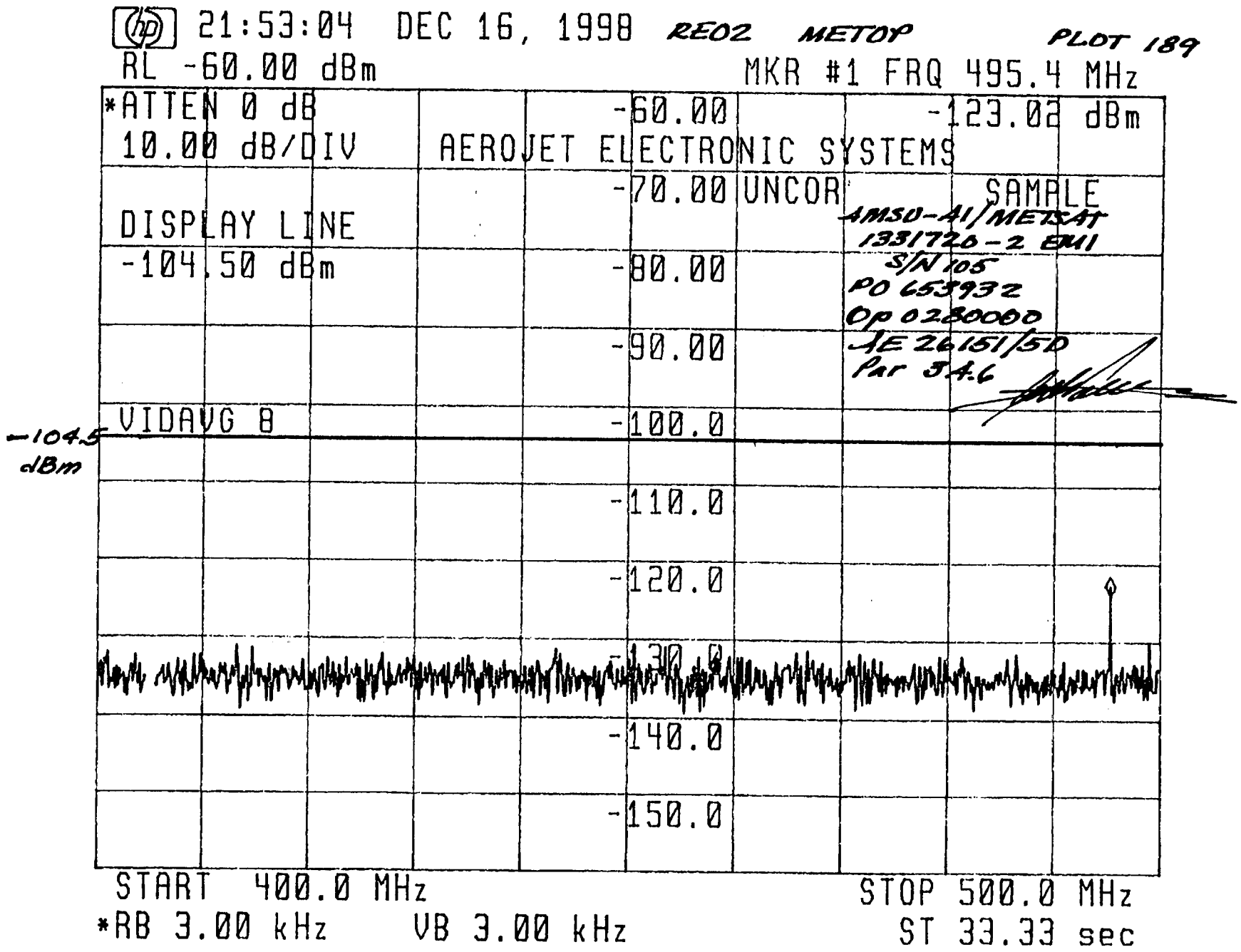

09:29:48 DEC 17, 1998 REOZ Special Freq Range PLOT 186
RL -50.00 dBm Ant. Vertical MKR #1 FRQ 2.031 00 GHz
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-122.10 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00 UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
P.O 653932
Op 028000
FE 26151/5D
Par 3.4.6
MARKER
2.031 00 GHz
-122.10 dBm
-70.00
1
-80.00
VIDAVG 8
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
START 2.010 00 GHz
STOP 2.040 00 GHz
*RB 30.0 kHz
VB 30.0 kHz
ST 100.0 msec

150

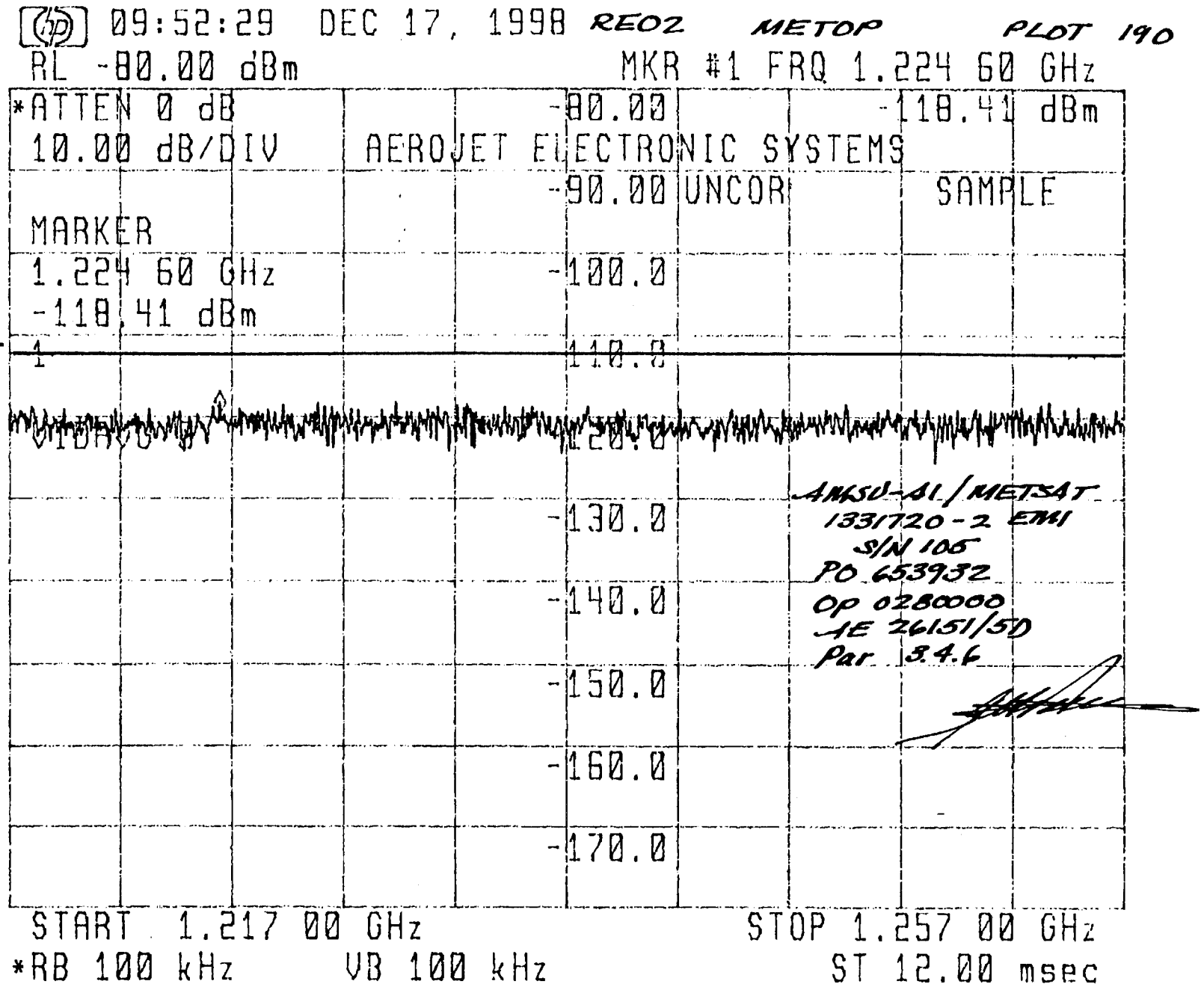
– 120 dBm


10:14:24 DEC 17, 1998
RL -80.00 dBm
MKR #1 FRQ 2.037 23 GHz
-123.45 dBm
*ATTEN 0 dB
10.00 dB/DIV
AEROJET ELECTRONIC SYSTEMS
MARKER
2.037 23 GHz
-123.45 dBm
VIDAVG 8
SAMPLE
-80.00
-90.00 UNCOR
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
START 2.010 00 GHz
STOP 2.040 00 GHz
*RB 30.0 kHz
VB 30.0 kHz
ST 100.0 msec

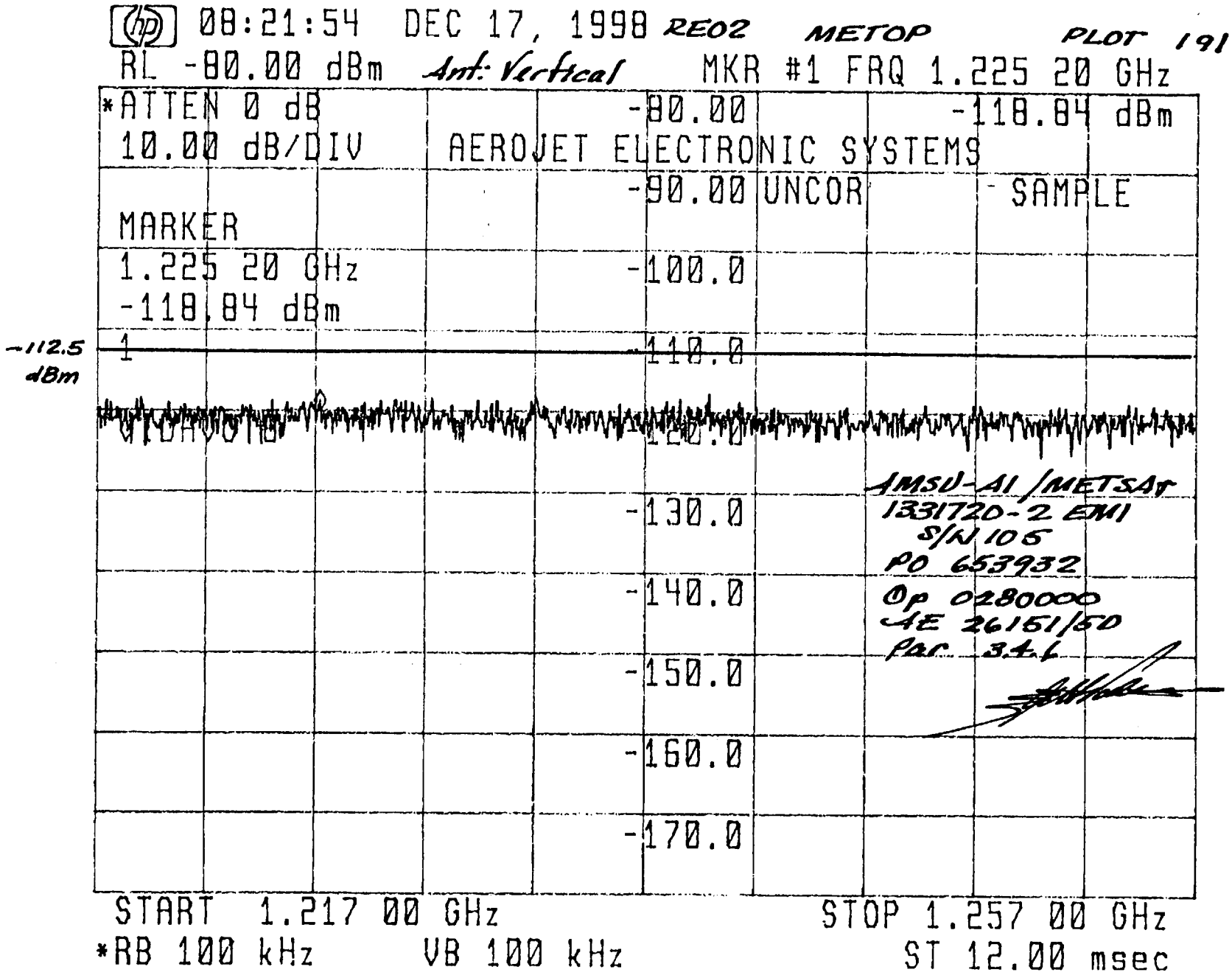

23:02:56 DEC 16, 1998 REO2 METOP PLOT 188
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
DISPLAY LINE
-104.50 dBm
VIDAVG 8
MKR #1 FRQ 495.3 MHz
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-119.36 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/METSAT
1381720-2 EMI
S/N 105
P.O. 639932
DO 0280000
FE 26451/000
Par 3.4.6
START 400.0 MHz
*RB 30.0 kHz
VB 30.0 kHz
STOP 500.0 MHz
ST 333.4 msec
-104.5 dBm

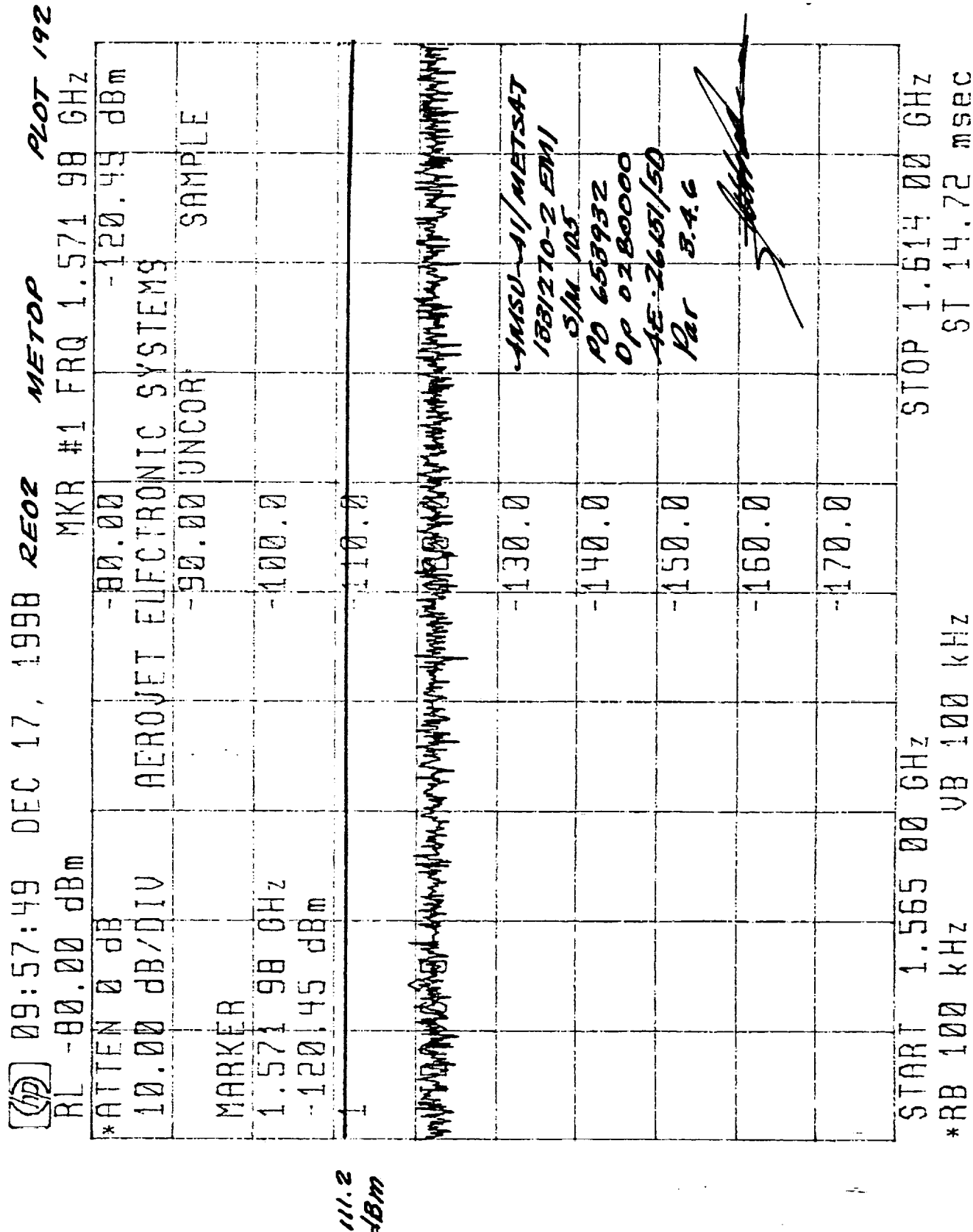

21:53:04 DEC 16, 1998 RE02 METOP PLOT 189
RL -60.00 dBm
MKR #1 FRQ 495.4 MHz
*ATTEN 0 dB
10.00 dB/DIV
-60.00
-123.02 dBm
AEROJET ELECTRONIC SYSTEMS
-70.00
UNCOR
SAMPLE
AMSO-41/METSAT
1331726-2 EMI
S/N 105
PO 653932
Op 0280000
JE 26151/5D
Par 3.4.6
DISPLAY LINE
-104.50 dBm
-80.00
-90.00
VIDAVG 8
-100.0
-104.5 dBm
-110.0
-120.0
-130.0
-140.0
-150.0
START 400.0 MHz
STOP 500.0 MHz
*RB 3.00 kHz
VB 3.00 kHz
ST 33.33 sec

(H)

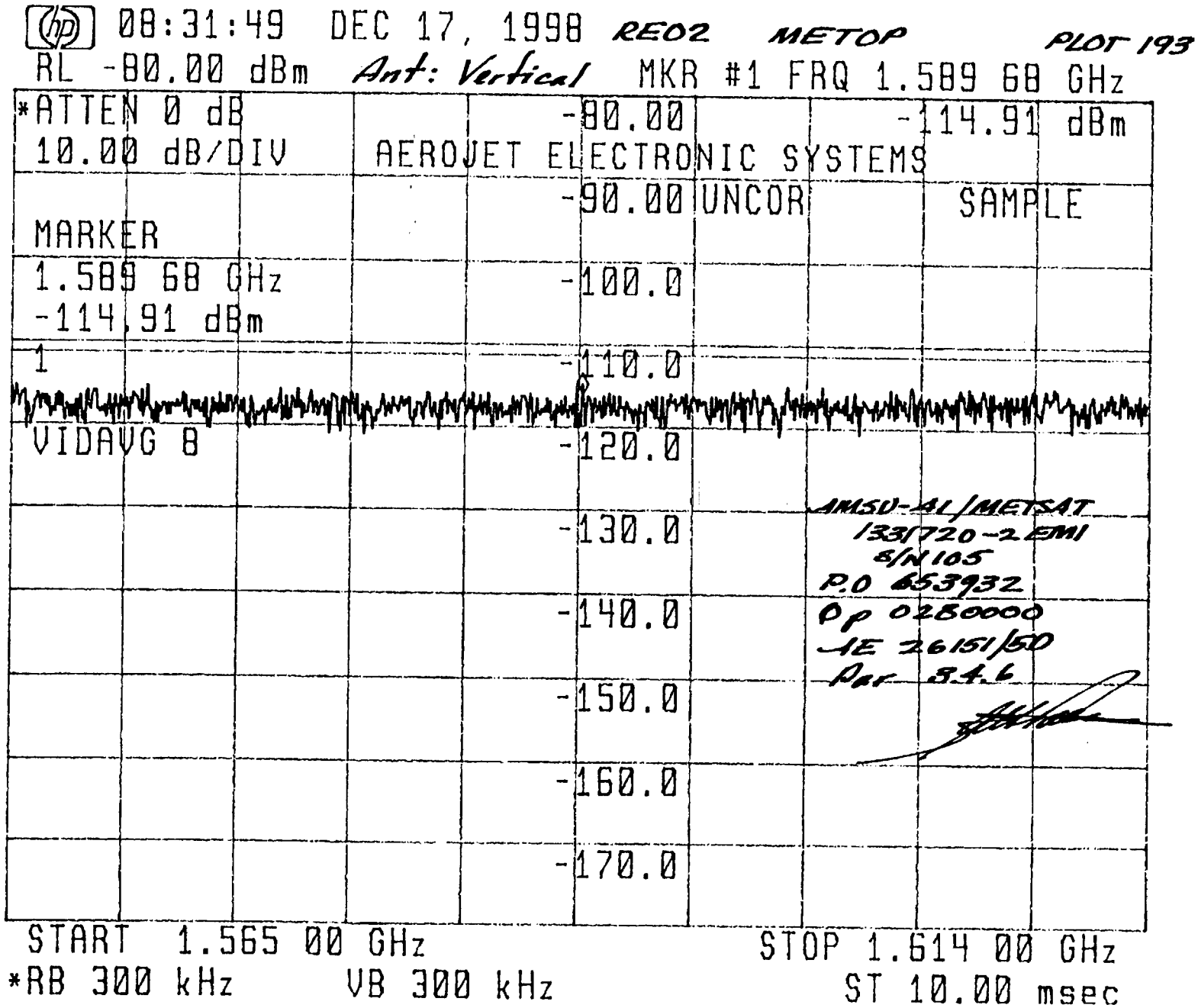

09:52:29 DEC 17, 1998 REO2 METOP PLOT 190
RL -80.00 dBm
MKR #1 FRQ 1.224 60 GHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-118.41 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
1.224 60 GHz
-118.41 dBm
-100.0
-112.5 dBm
1
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
AN/SU-81/METSAT
1331720-2 EMI
S/N 105
PO 653932
Op 0280000
AE 26151/5D
Par 3.4.6
START 1.217 00 GHz
STOP 1.257 00 GHz
*RB 100 kHz
VB 100 kHz
ST 12.00 msec

(V)

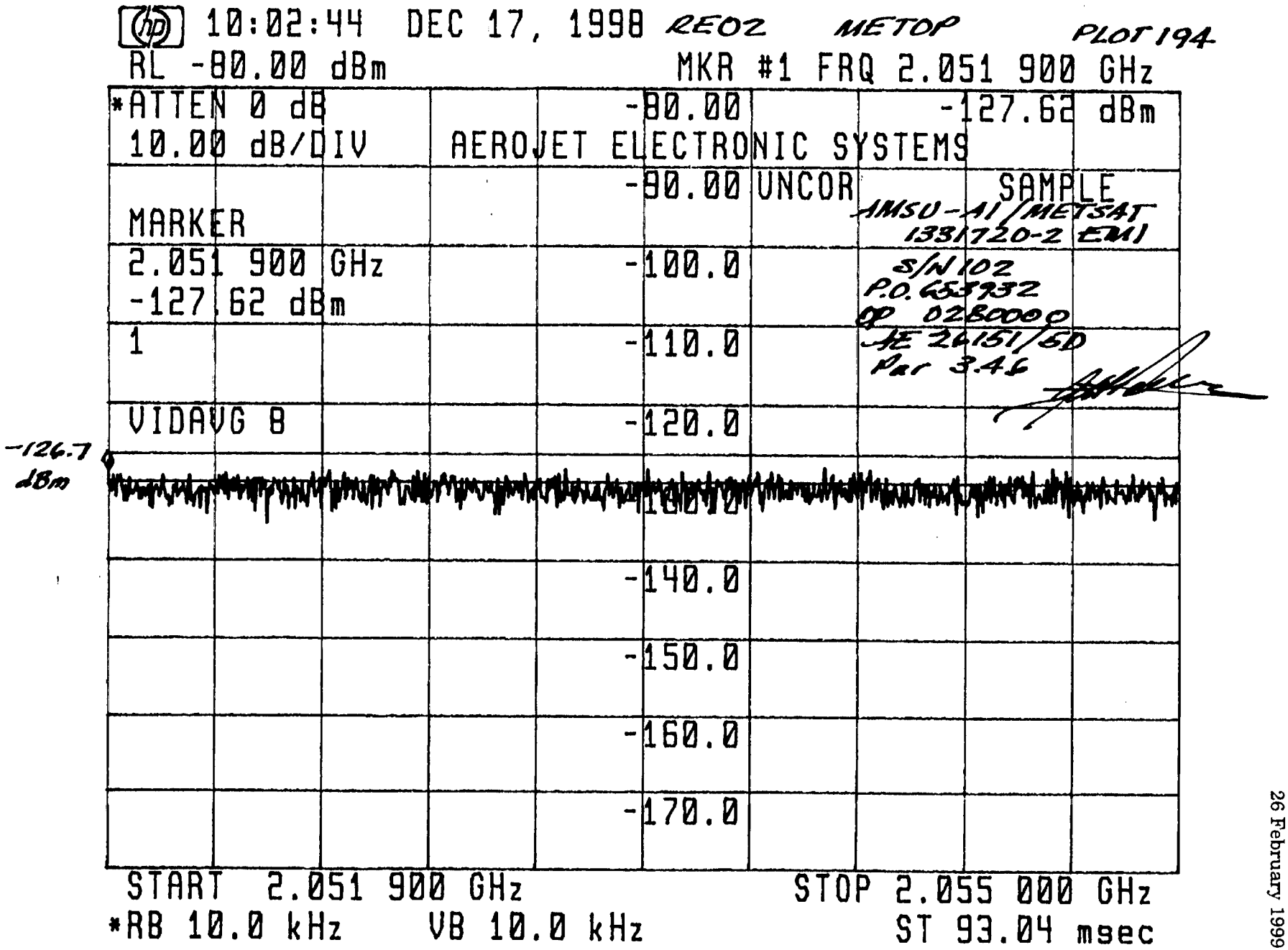

08:21:54 DEC 17, 1998 RE02 METOP PLOT 191
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 1.225 20 GHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-118.84 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
1.225 20 GHz
-118.84 dBm
-100.0
-112.5 dBm
1
-110.0
-120.0
AMSU-A1/METSAT
1331720-2 EMI
S/N 105
PO 653932
Op 0280000
4E 26151/50
Par 3.4.6
-130.0
-140.0
-150.0
-160.0
-170.0
START 1.217 00 GHz
STOP 1.257 00 GHz
*RB 100 kHz
VB 100 kHz
ST 12.00 msec


09:57:49 DEC 17, 1998 RE02 METOP PLOT 192
RL -80.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
MARKER
1.571 98 GHz
-120.45 dBm
MKR #1 FRQ 1.571 98 GHz
-80.00
-120.44 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
-100.0
-110.0
-130.0
-140.0
-150.0
-160.0
-170.0
-111.2 dBm
START 1.565 00 GHz
*RB 100 kHz
VB 100 kHz
STOP 1.614 00 GHz
ST 14.72 msec

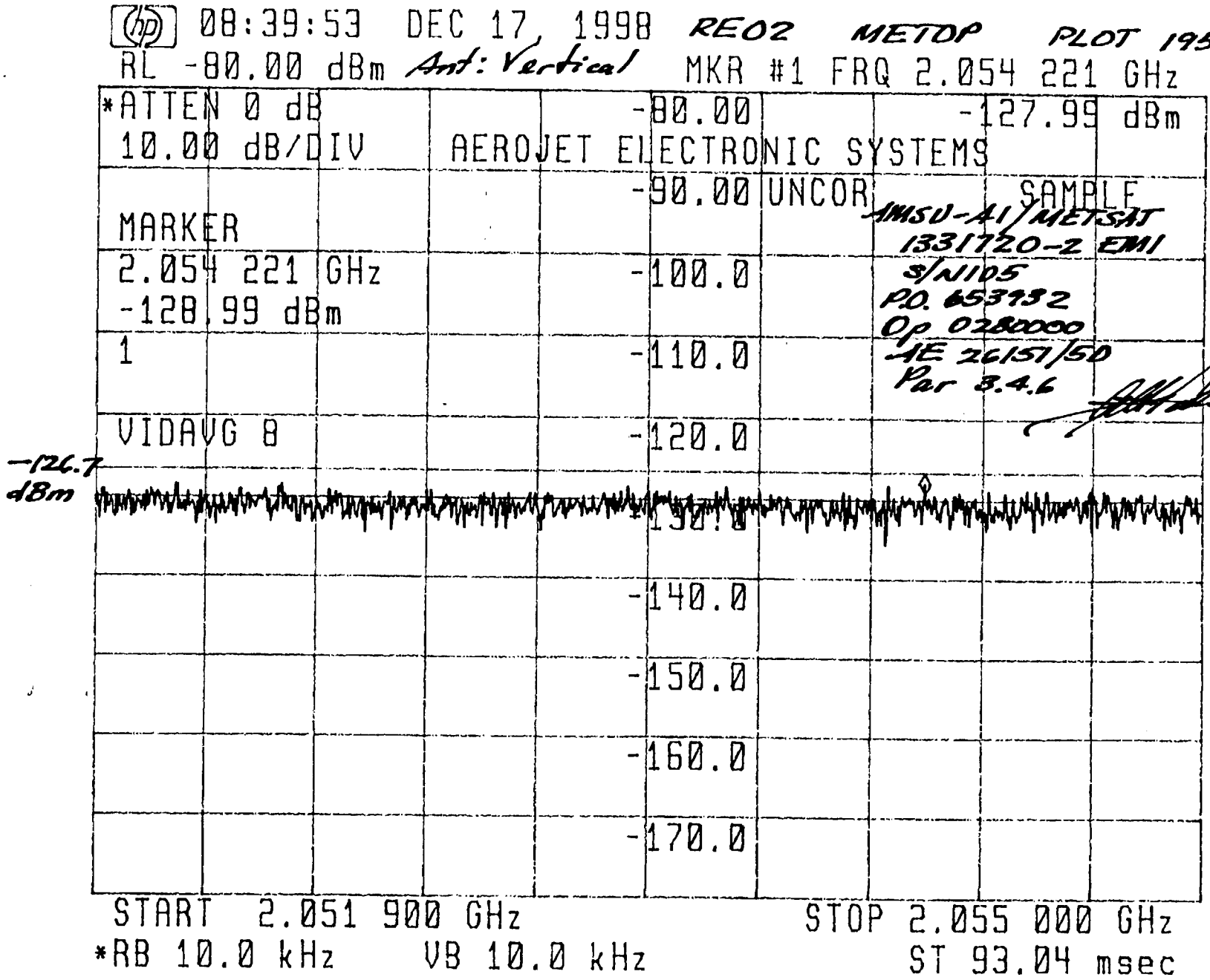
(V)

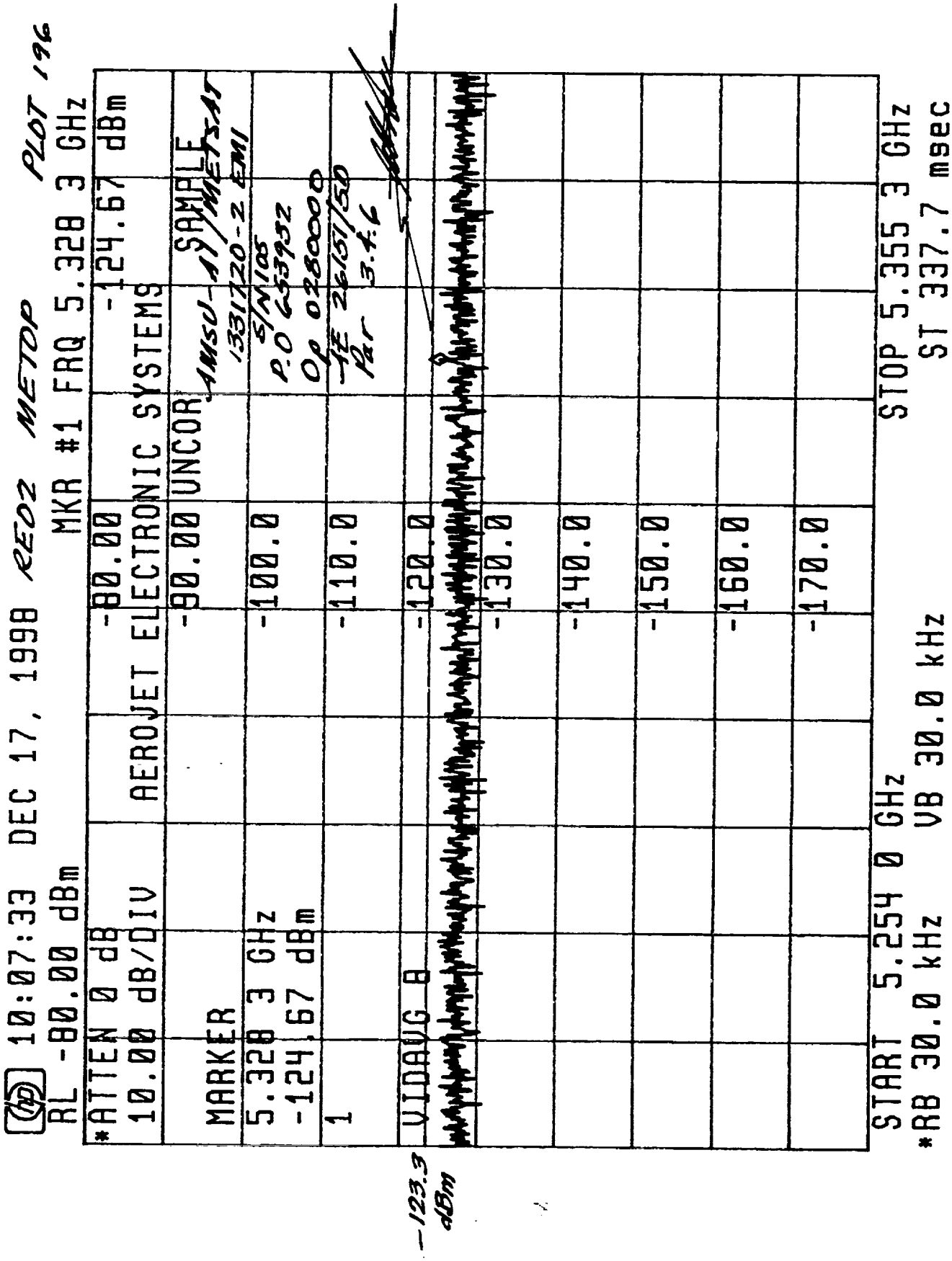

08:31:49 DEC 17, 1998 RE02 METOP PLOT 193
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 1.589 68 GHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-114.91 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
MARKER
1.589 68 GHz
-114.91 dBm
-100.0
-110.0
1
VIDAVG 8
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
AMSU-A1/METSAT
133720-2 EMI
S/N 105
P.O 653932
Op 0280000
IE 26151/50
Par 3.4.6
START 1.565 00 GHz
STOP 1.614 00 GHz
*RB 300 kHz
VB 300 kHz
ST 10.00 msec

(H)

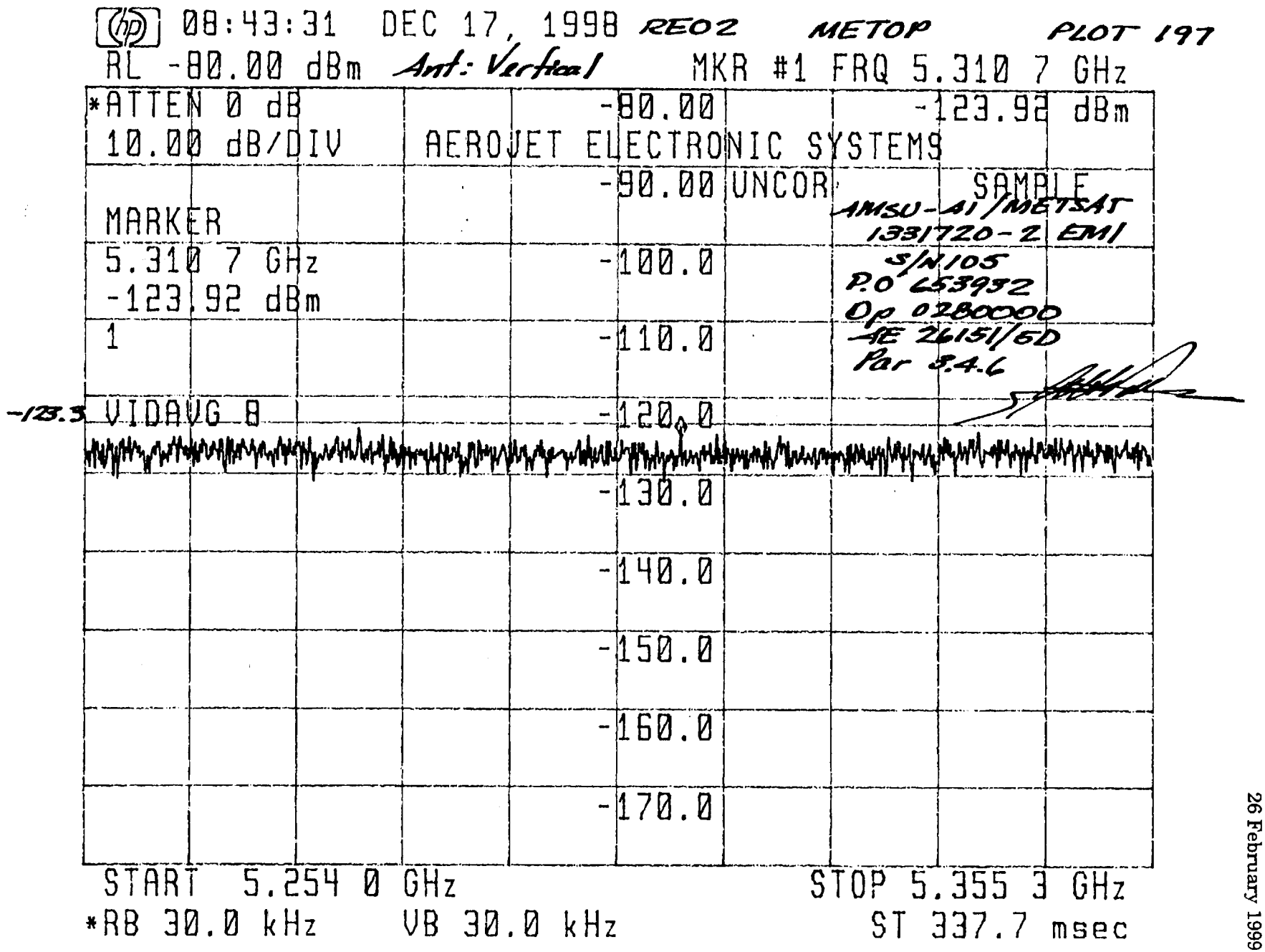

10:02:44 DEC 17, 1998 REOZ METOP PLOT 194
RL -80.00 dBm
MKR #1 FRQ 2.051 900 GHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-127.62 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1 / METSAT
133720-2 EM1
MARKER
2.051 900 GHz
-127.62 dBm
S/N 102
P.O. 653932
QP 0280000
AE 24151/6D
Par 3.4.6
-100.0
1
-110.0
VIDAVG 8
-120.0
-126.7 dBm
-130.0
-140.0
-150.0
-160.0
-170.0
START 2.051 900 GHz
STOP 2.055 000 GHz
*RB 10.0 kHz
VB 10.0 kHz
ST 93.04 msec

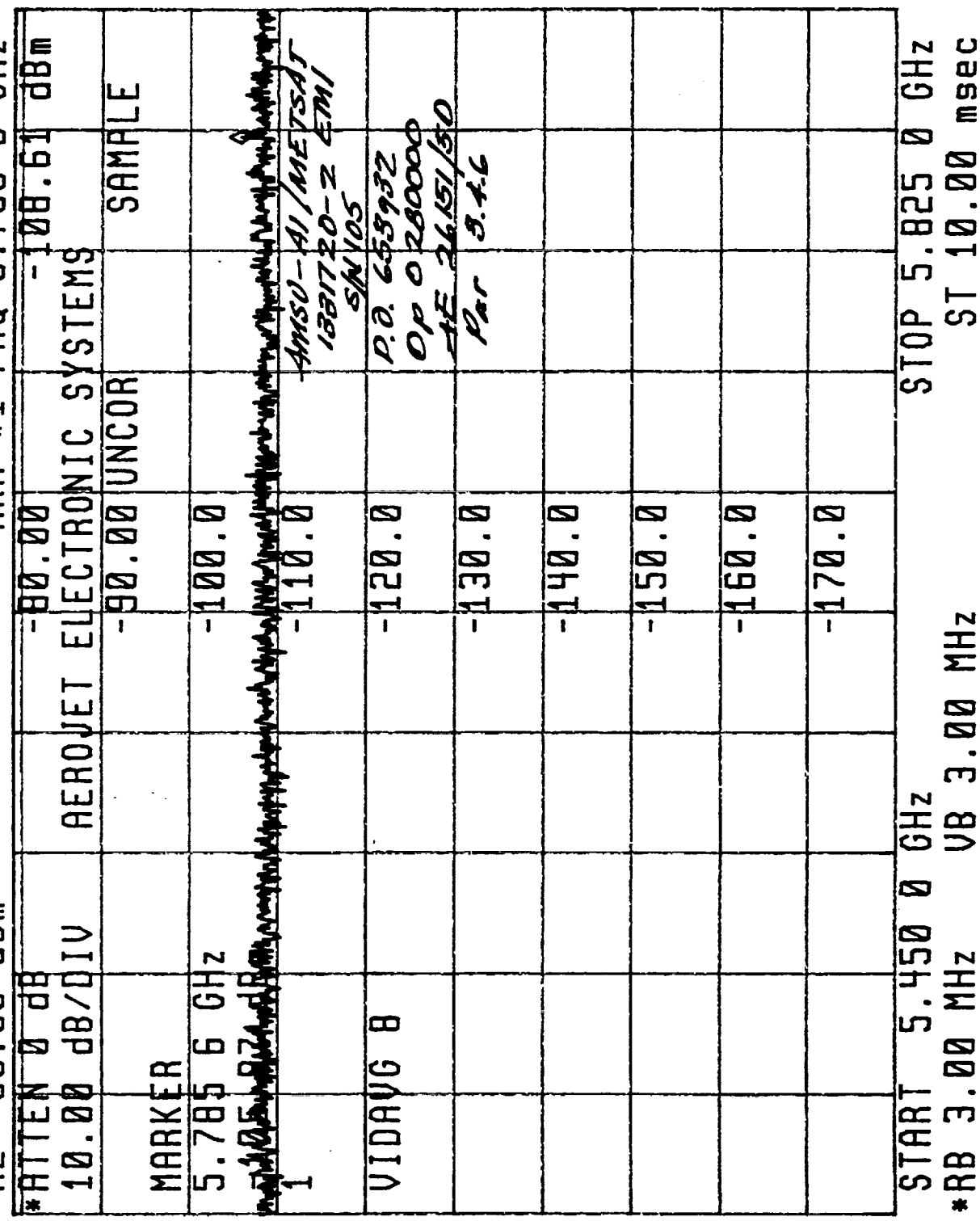
(V)


08:39:53 DEC 17, 1998 RE02 METOP PLOT 195
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 2.054 221 GHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-127.99 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EMI
S/N105
P.O. 653132
Op 0280000
AE 26151/50
Par 3.4.6
MARKER
2.054 221 GHz
-128.99 dBm
-100.0
1
-110.0
VIDAVG 8
-120.0
-126.7 dBm
-130.0
-140.0
-150.0
-160.0
-170.0
START 2.051 900 GHz
STOP 2.055 000 GHz
*RB 10.0 kHz
VB 10.0 kHz
ST 93.04 msec

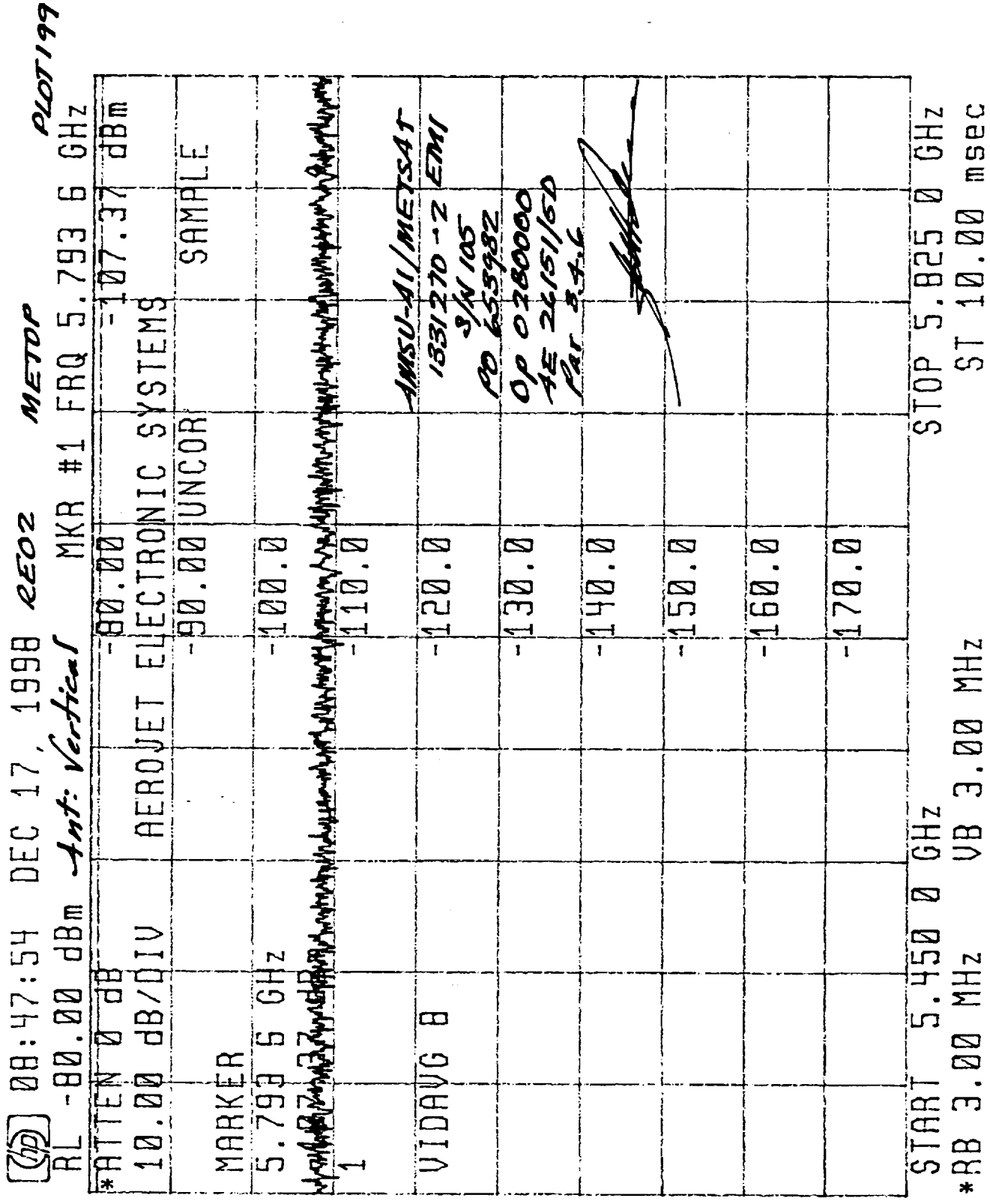

10:07:33 DEC 17, 1998 REDZ METOP PLOT 196
RL -80.00 dBm
MKR #1 FRQ 5.328 3 GHz
*ATTEN 0 dB
10.00 dB/DIV
MARKER
5.328 3 GHz
-124.67 dBm
1
VIDAVG 8
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-124.67 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1 METSAT
1331220-2 EMI
S/N 108
P.O 453932
Op 0280000
RE 26 ISI/ISO
Par 3.4.6
START 5.254 0 GHz
*RB 30.0 kHz
VB 30.0 kHz
STOP 5.355 3 GHz
ST 337.7 msec
-123.3 dBm

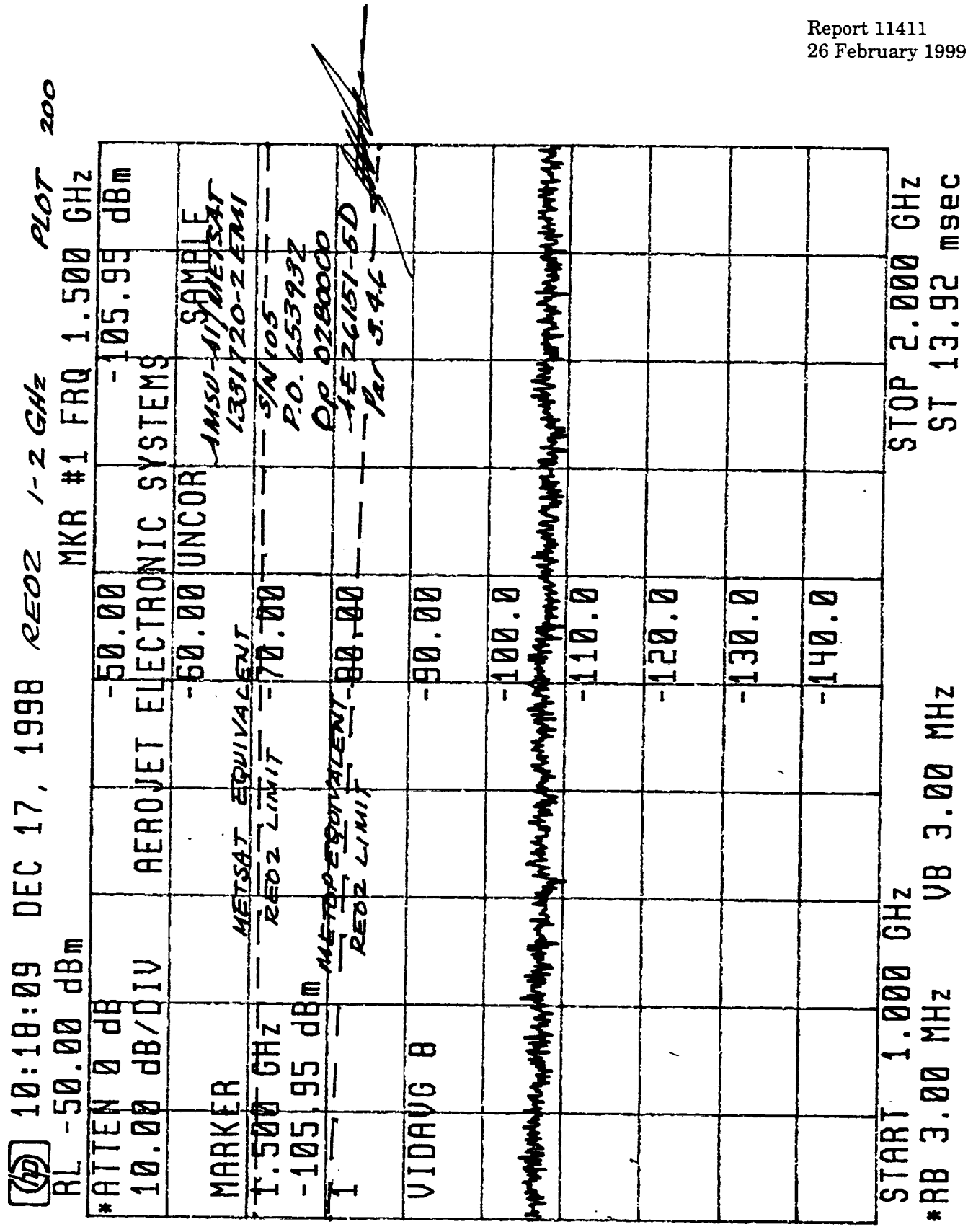
(V)


08:43:31 DEC 17, 1998 REO2 METOP PLOT 197
RL -80.00 dBm Ant: Vertical MKR #1 FRQ 5.310 7 GHz
*ATTEN 0 dB
10.00 dB/DIV
-80.00
-123.92 dBm
AEROJET ELECTRONIC SYSTEMS
-90.00 UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EM1
S/N105
P.O L53932
Op 0280000
AE 26151/6D
Par 3.4.6
MARKER
5.310 7 GHz
-123.92 dBm
-100.0
1
-110.0
-123.5
VIDAVG 8
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
START 5.254 0 GHz
STOP 5.355 3 GHz
*RB 30.0 kHz
VB 30.0 kHz
ST 337.7 msec


10:11:15 DEC 17, 1998 RE02 METOP PLOT 198
RL -80.00 dBm
MKR #1 FRQ 5.785 6 GHz
*ATTEN 0 dB
10.00 dB/DIV
AEROJET ELECTRONIC SYSTEMS
-80.00
-90.00 UNCOR
-100.61 dBm
SAMALE
MARKER
5.785 6 GHz
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
Ansu-41/METSAT
183720-2 EMI
S/N105
P.O. 653932
Op 0280000
AE 24151/50
Par 3.4.6
VIDAVG 8
START 5.450 0 GHz
*RB 3.00 MHz
VB 3.00 MHz
STOP 5.825 0 GHz
ST 10.00 msec

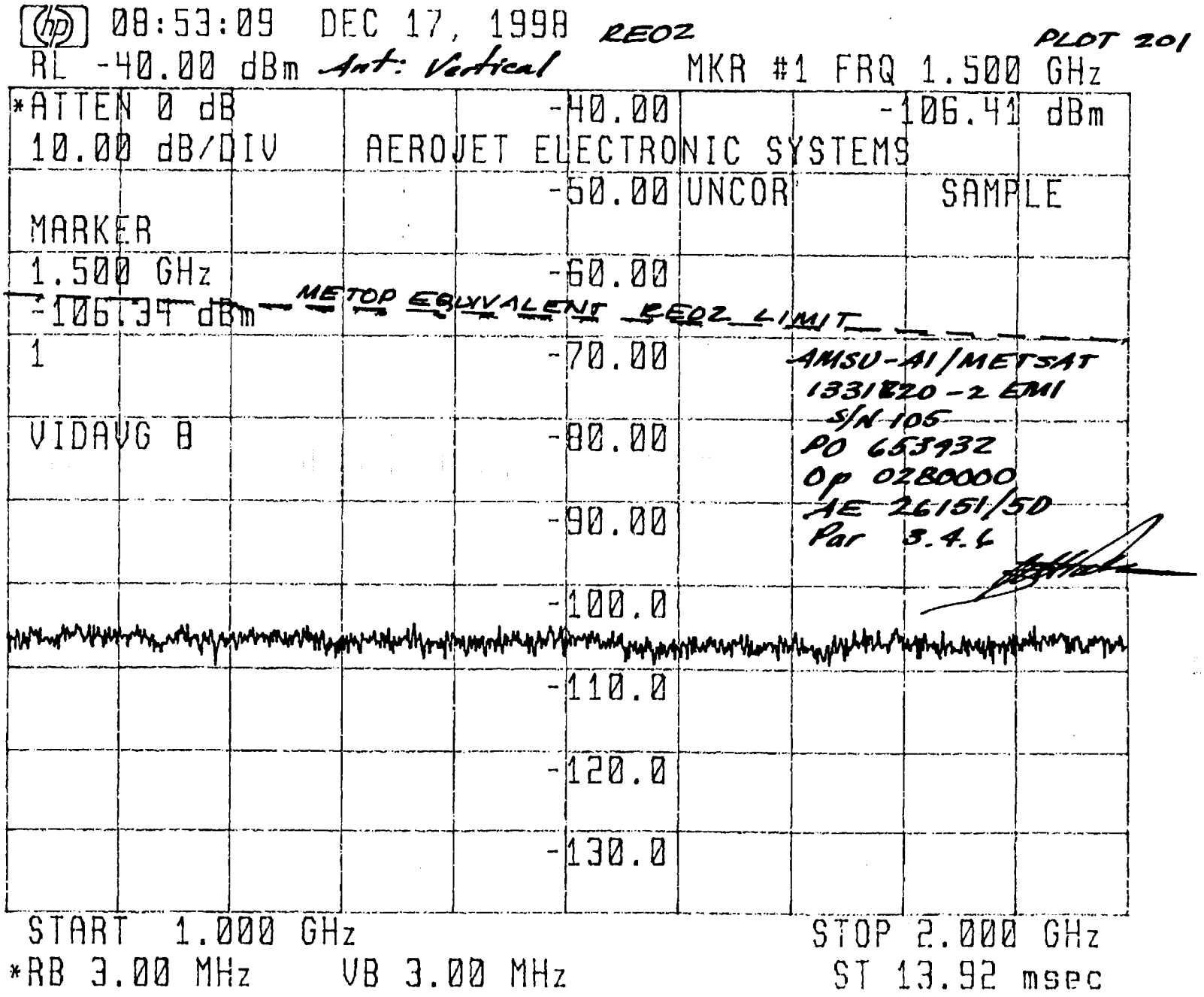
-80.7 dBm

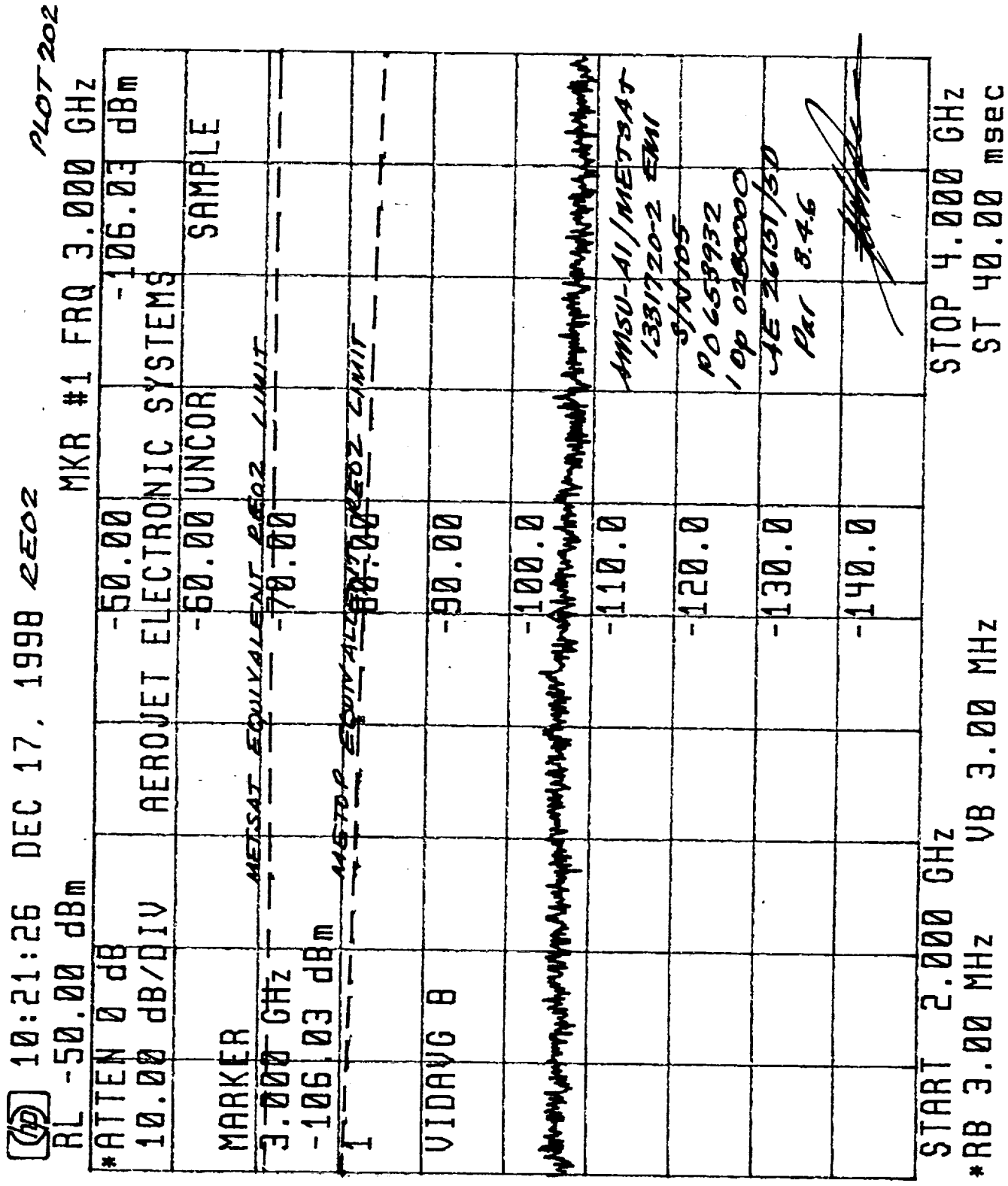

PLOT 199
METOP
2E02
08:47:54 DEC 17, 1998
Ant: Vertical
RL -80.00 dBm
MKR #1 FRQ 5.793 6 GHz
-107.37 dBm
*ATTEN 0 dB
10.00 dB/DIV
AEROJET ELECTRONIC SYSTEMS
SAMPLE
MARKER
5.793 6 GHz
-107.37 dBm
VIDAVG 8
-80.00
-90.00 UNCOR
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
AMSU-A1/METSAT
1831270-2 EMI
S/N 105
PO 655982
Op 0280000
AE 24151/60
Par 3.4.6
START 5.450 0 GHz
*RB 3.00 MHz
VB 3.00 MHz
STOP 5.825 0 GHz
ST 10.00 msec


10:18:09 DEC 17, 1998 REO2 1-2 GHz PLOT 200
RL -50.00 dBm
MKR #1 FRQ 1.500 GHz
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-60.00
-105.99 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
P.O. 653932
Op 028000
1E 26151-5D
Par 3.4.4
METSAT EQUIVALENT
REO2 LIMIT
-70.00
-80.00
MARKER
1.500 GHz
-105.95 dBm
1
VIDAVG 8
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
START 1.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
STOP 2.000 GHz
ST 13.92 msec

(H)

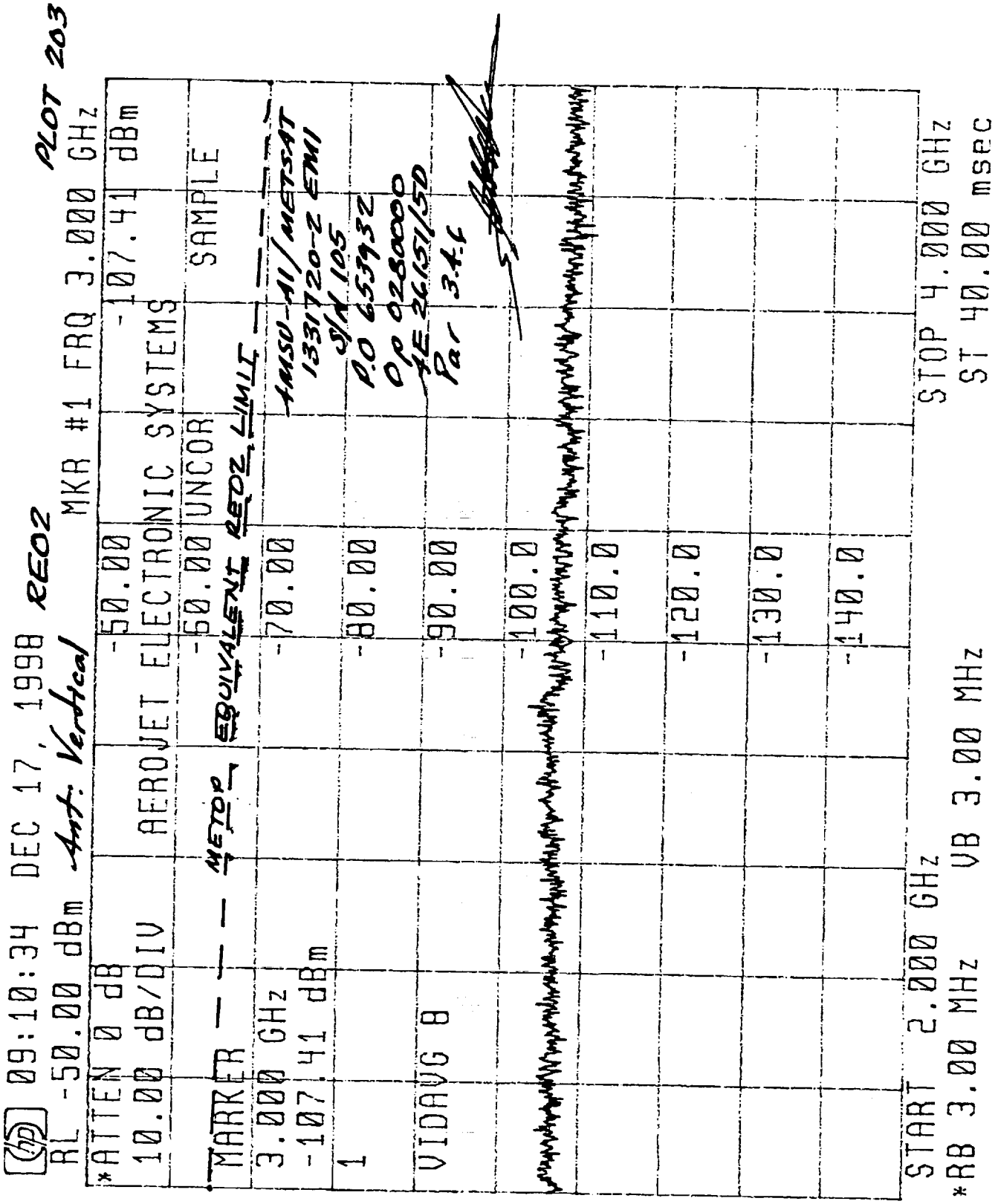
(V)


08:53:09 DEC 17, 1998 REQ2
PLOT 201
RL -40.00 dBm Ant: Vertical
MKR #1 FRQ 1.500 GHz
*ATTEN 0 dB
10.00 dB/DIV
-40.00
-106.41 dBm
AEROJET ELECTRONIC SYSTEMS
-50.00 UNCOR
SAMPLE
MARKER
1.500 GHz
-106.34 dBm
-60.00
METOP EQUIVALENT REQ2 LIMIT
1
-70.00
AMSU-A1/METSAT
1331820-2 EMI
S/N 105
PO 653932
Op 0280000
AE 26151/50
Par 3.4.6
VIDAVG 8
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
START 1.000 GHz
STOP 2.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
ST 13.92 msec

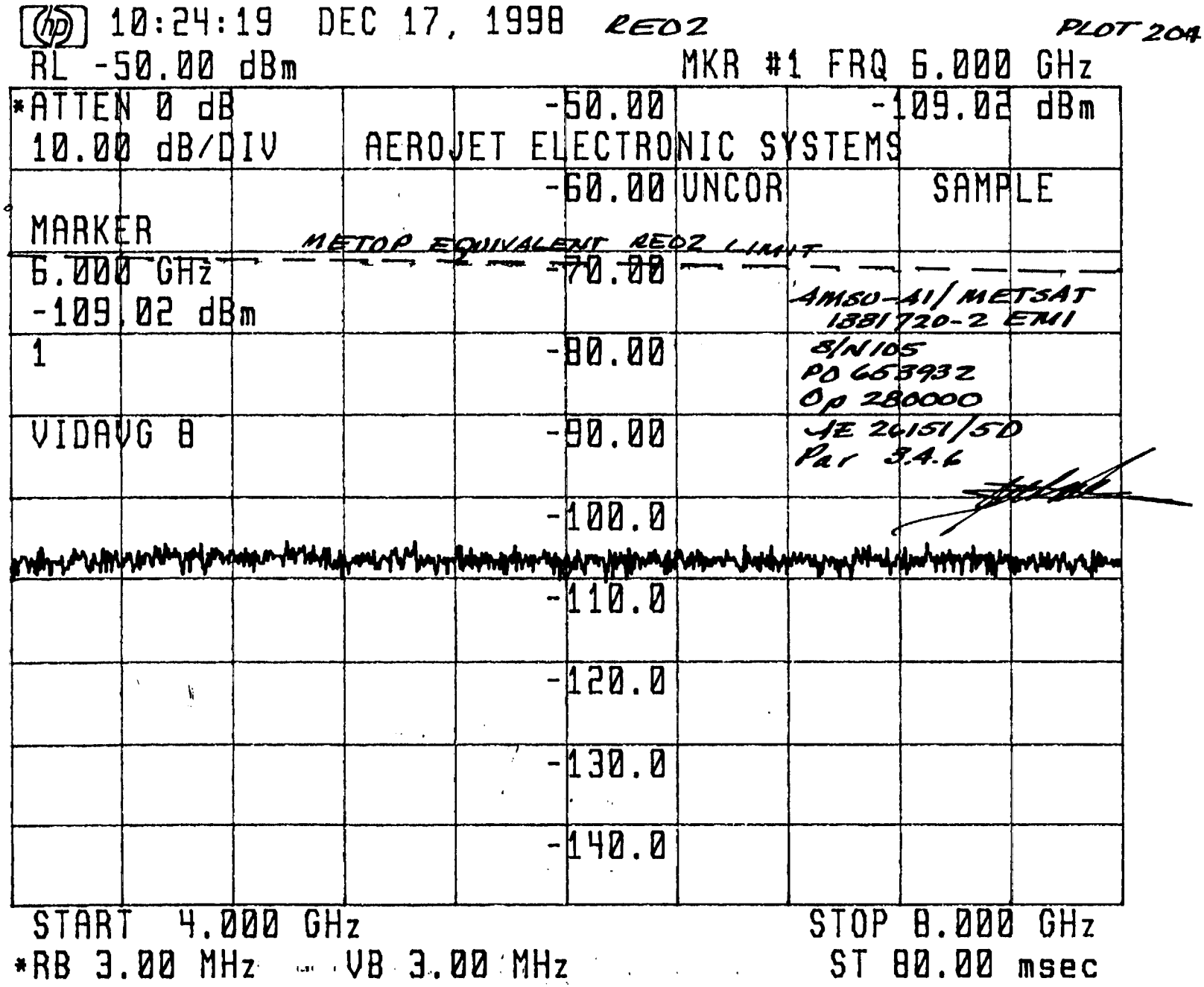

PLOT 202
10:21:26 DEC 17, 1998 2E02
MKR #1 FRQ 3.000 GHz
RL -50.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-106.03 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00 UNCOR
SAMPLE
MARKER
3.000 GHz
-106.03 dBm
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
VIDAVG B
START 2.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
STOP 4.000 GHz
ST 40.00 msec

(V)

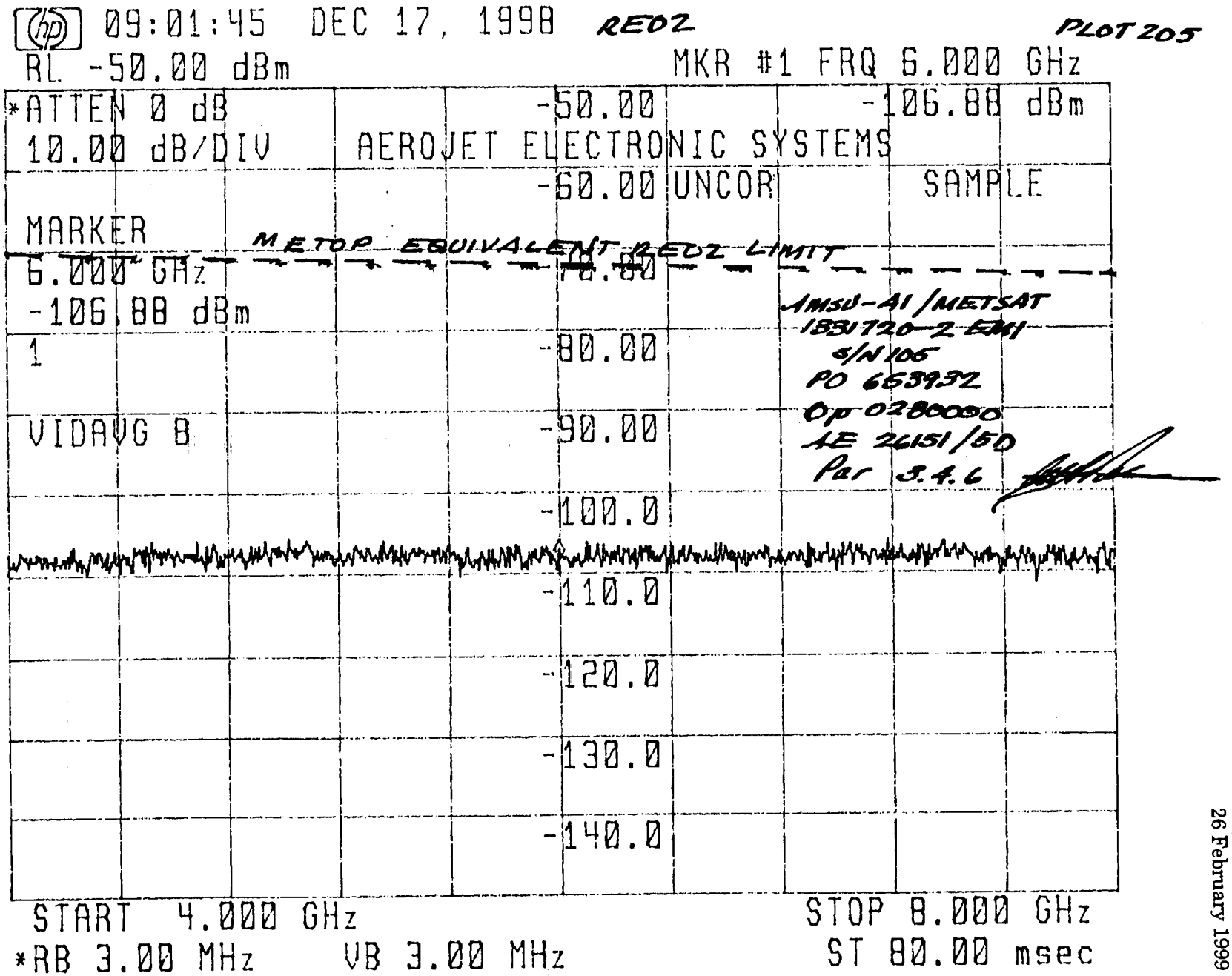
PLOT 203

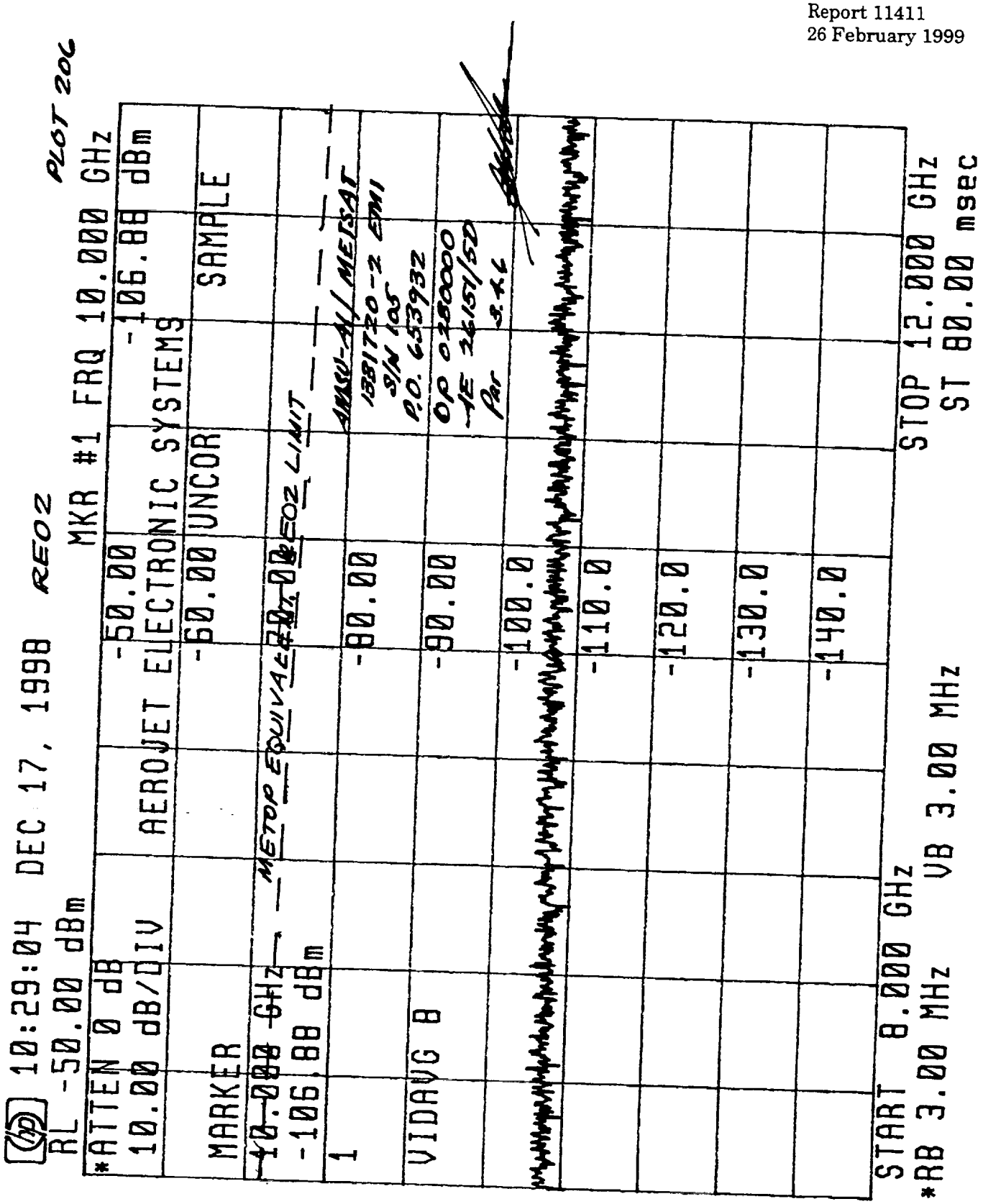

09:10:34 DEC 17, 1998 RE02
RL -50.00 dBm Ant: Vertical
MKR #1 FRQ 3.000 GHz
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-107.41 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00 UNCOR
SAMPLE
MARKER — — — METHOD EQUIVALENT RE02 LIMIT — — —
3.000 GHz
-107.41 dBm
1
VIDAVG 8
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
4450-A1/MESAT
1331720-2 EMI
S/N 105
P.O 659932
OP 0280000
SE 261351SD
Par 3.4.c
START 2.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
STOP 4.000 GHz
ST 40.00 msec

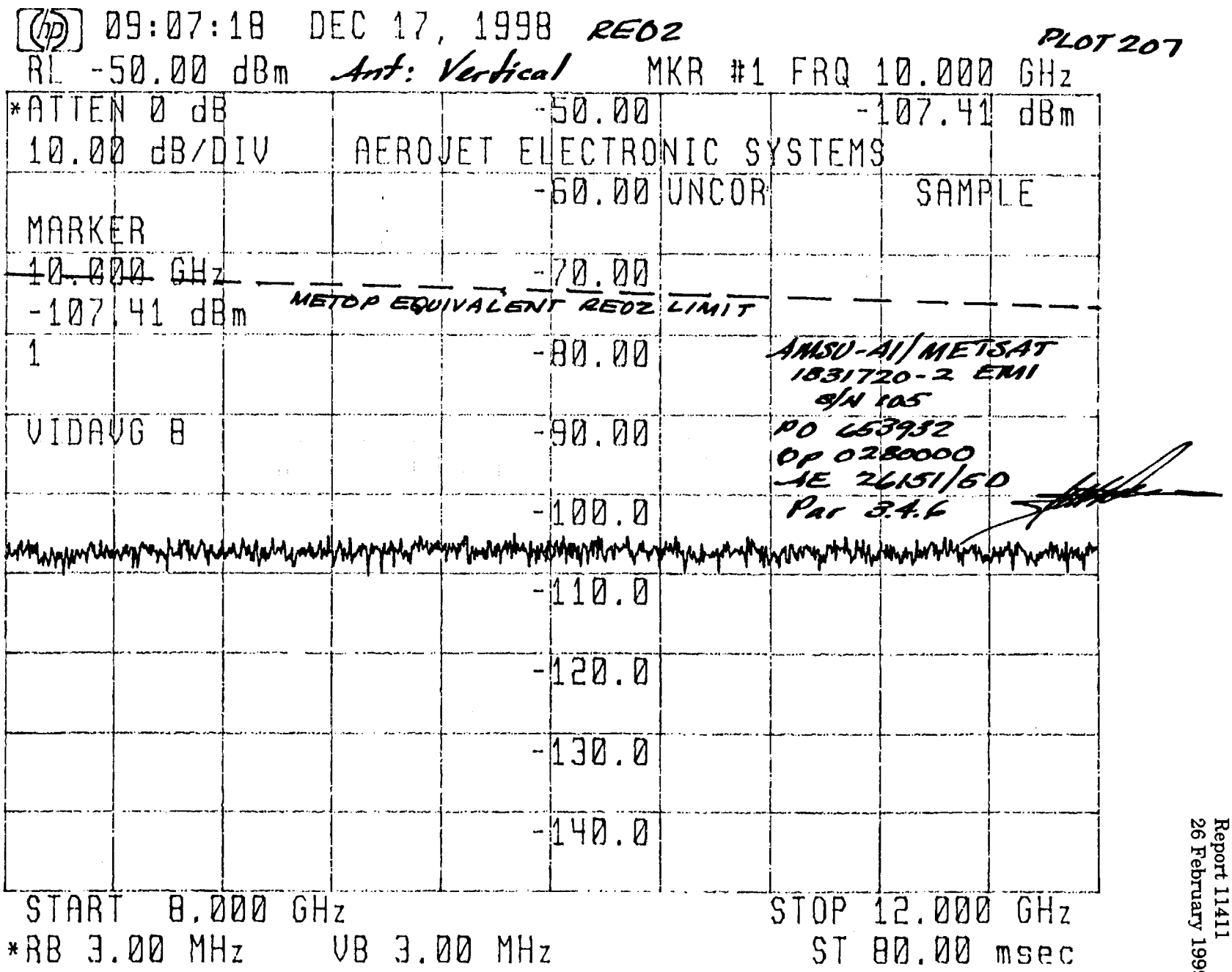
(H)


10:24:19 DEC 17, 1998 RE02
PLOT 204
RL -50.00 dBm
MKR #1 FRQ 6.000 GHz
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-109.02 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00
UNCOR
SAMPLE
MARKER
METOP EQUIVALENT RE02 LIMIT
6.000 GHz
-109.02 dBm
-70.00
AM50-41/METSAT
1381720-2 EMI
S/N 105
PO 653932
Op 280000
1
-80.00
VIDAVG 8
-90.00
JE 24151/5D
Par 3.4.6
-100.0
-110.0
-120.0
-130.0
-140.0
START 4.000 GHz
STOP 8.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
ST 80.00 msec

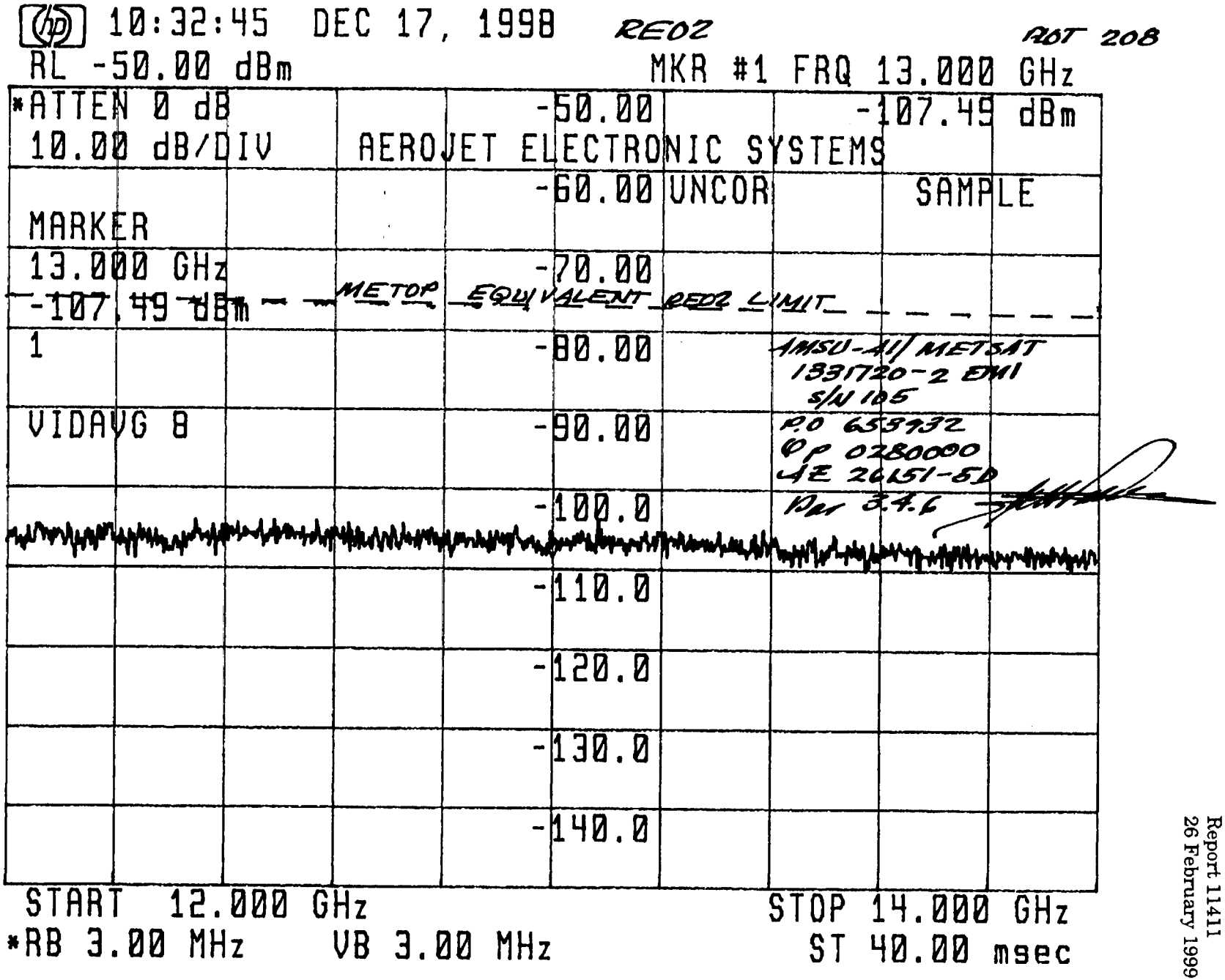
(V)


09:01:45 DEC 17, 1998
RE02
PLOT 205
RL -50.00 dBm
MKR #1 FRQ 6.000 GHz
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-106.88 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00 UNCOR
SAMPLE
MARKER
METOP EQUIVALENT RE02 LIMIT
6.000 GHz
-106.88 dBm
AMSU-A1/METSAT
1831720-2 EM1
S/N 106
PO 663932
Op 0280090
AE 26151/50
Par 3.4.6
1
-80.00
VIDAVG 8
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
START 4.000 GHz
STOP 8.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
ST 80.00 msec

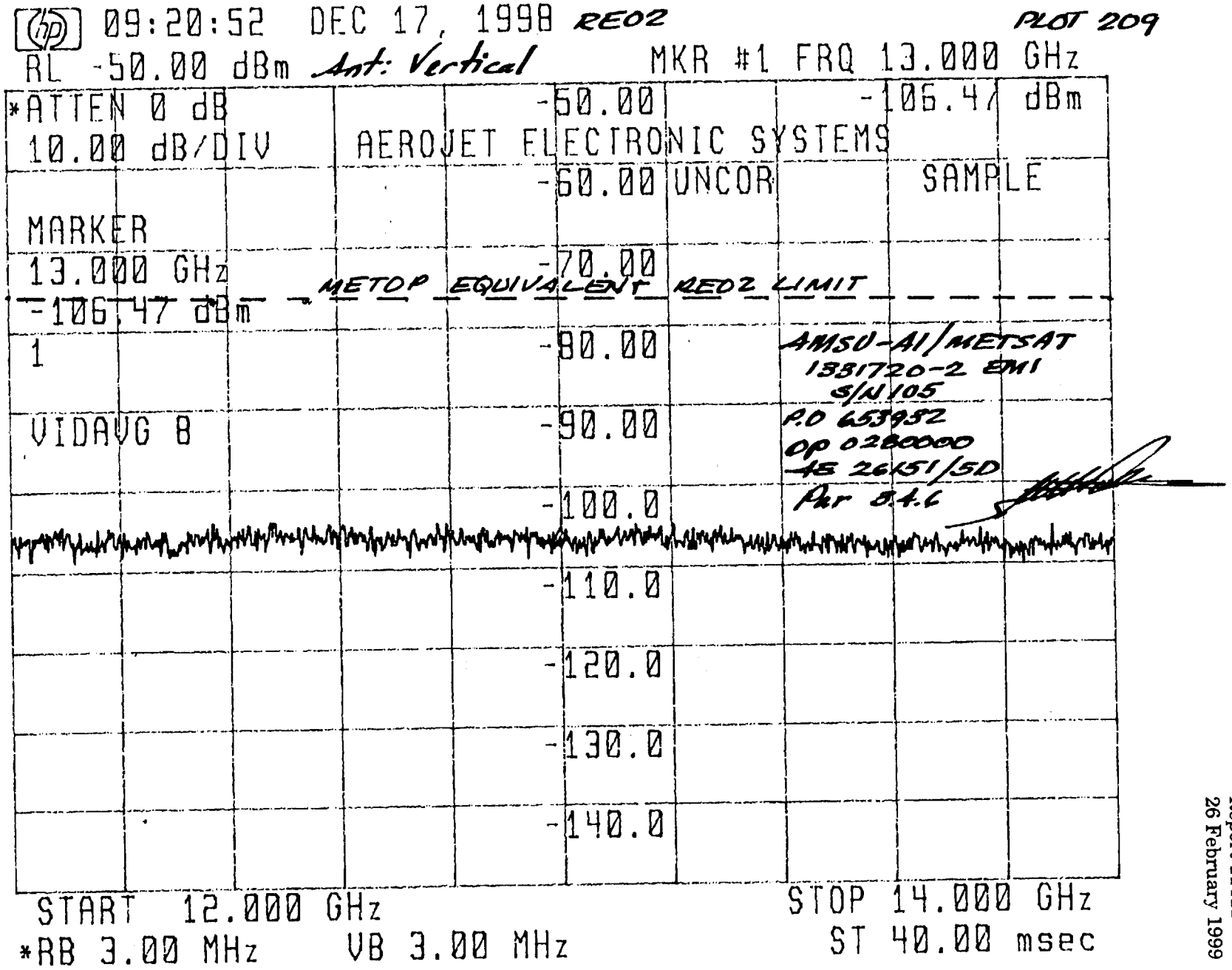

PLOT 20C
10:29:04 DEC 17, 1998 REO2
RL -50.00 dBm
MKR #1 FRQ 10.000 GHz
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-106.88 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00 UNCOR
SAMPLE
MARKER
10.000 GHz
-106.88 dBm
METHOD EQUIVALENT TO REO2 LIMIT
AMSU-A1 MESAT
1881720-2 EMI
S/N 105
P.O. 453932
1 -80.00
VIDAVG B
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
START 8.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
STOP 12.000 GHz
ST 80.00 msec

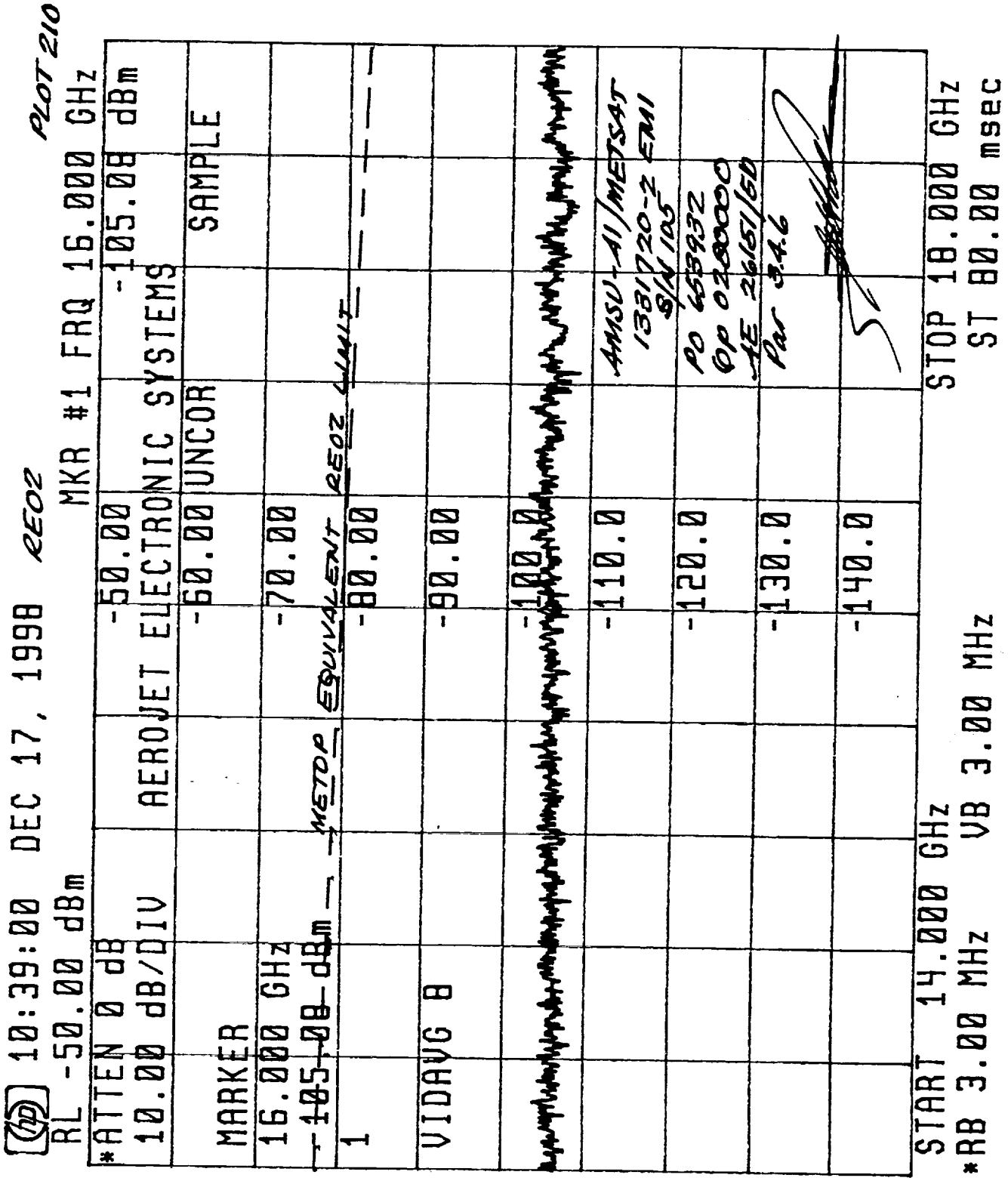

09:07:18 DEC 17, 1998 RE02
PLOT 207
RL -50.00 dBm Ant: Vertical
MKR #1 FRQ 10.000 GHz
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-107.41 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00 UNCOR
SAMPLE
MARKER
10.000 GHz
-107.41 dBm
-70.00
METOP EQUIVALENT RE02 LIMIT
-80.00
1
AMSU-A1/METSAT
1831720-2 EMI
S/N 105
PO 663932
Op 0280000
AE 26151/60
Par 3.4.6
VIDAVG 8
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
START 8.000 GHz
STOP 12.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
ST 80.00 msec

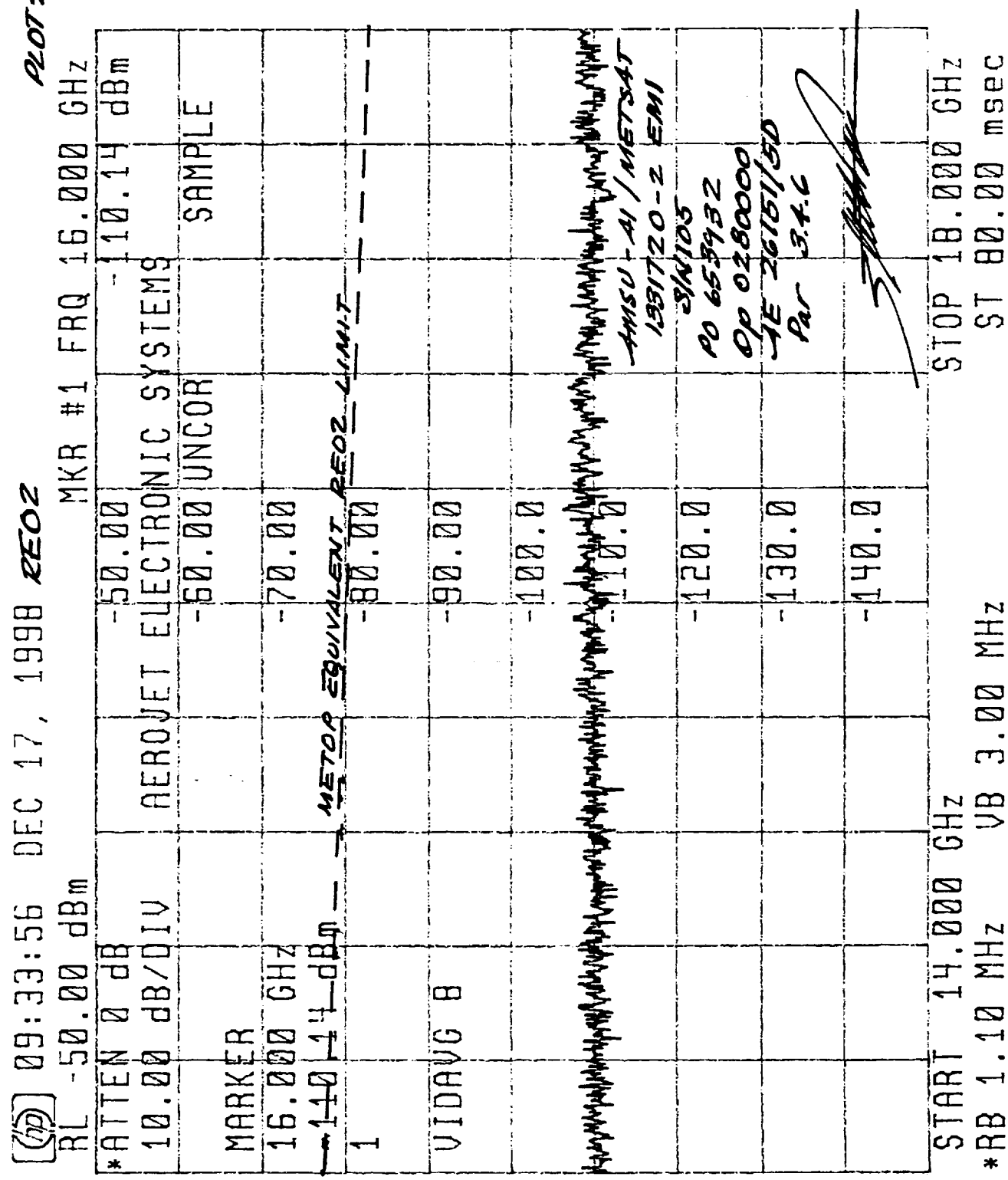
(H)


10:32:45 DEC 17, 1998
RE02
RL -50.00 dBm
MKR #1 FRQ 13.000 GHz
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-107.49 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00
UNCOR
SAMPLE
MARKER
13.000 GHz
-107.49 dBm
-70.00
METOP EQUIVALENT RE02 LIMIT
1
-80.00
AMSU-A1/METSAT
1331720-2 EM1
S/N 105
VIDAVG 8
-90.00
P.O 653932
Op 0280000
AE 26151-5D
Par 3.4.6
-100.0
-110.0
-120.0
-130.0
-140.0
START 12.000 GHz
STOP 14.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
ST 40.00 msec

(Y)


09:20:52 DEC 17, 1998 RE02
PLOT 209
RL -50.00 dBm Ant: Vertical
MKR #1 FRQ 13.000 GHz
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-106.47 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00 UNCOR
SAMPLE
MARKER
13.000 GHz
-106.47 dBm
-70.00
METOP EQUIVALENT RE02 LIMIT
1
-80.00
AMSU-A1/METSAT
1331720-2 EM1
S/N105
P.O 653952
OP 0280000
VIDAVG B
-90.00
46 26451/5D
Par 5.4.6
-100.0
-110.0
-120.0
-130.0
-140.0
START 12.000 GHz
STOP 14.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
ST 40.00 msec


PLOT 210
10:39:00 DEC 17, 1998
RE02
MKR #1 FRQ 16.000 GHz
RL -50.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-105.00 dBm
AEROJET ELECTRONIC SYSTEMS
-60.00 UNCOR
SAMPLE
MARKER
16.000 GHz
-105.00 dBm
-70.00
METOP EQUIVALENT RE02 LIMIT
1
-80.00
VIDAVG B
-90.00
-100.0
-110.0
AMSU-A1/METSAT
137/720-2 EMI
S/N 105
PO 459932
OP 020000
HE 26151/60
Par 34.6
-120.0
-130.0
-140.0
START 14.000 GHz
*RB 3.00 MHz
VB 3.00 MHz
STOP 18.000 GHz
ST 80.00 msec


PLOT 211
09:33:56 DEC 17, 1998 RE02
MKR #1 FRQ 16.000 GHz
RL -50.00 dBm
*ATTEN 0 dB
10.00 dB/DIV
-50.00
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-110.14 dBm
AEROJET ELECTRONIC SYSTEMS
UNCOR
SAMPLE
MARKER
16.000 GHz
-110.14 dBm
1
VIDAVG 8
METOP EQUIVALENT RE02 LIMIT
ANSI-AI/NETSAT
1997 20-2 EMI
SIGNOS
PO 6594322
OP 0280000
TE 26151/SD
PAR 34.6
START 14.000 GHz
*RB 1.10 MHz
VB 3.00 MHz
STOP 18.000 GHz
ST 80.00 msec

TEST DATA SHEET 3 (Sheet 1 of 3)
3.4.7: RE04 Test

AE-26151/5D
22 Sep 98

Test Setup Verified: Ken Shane 12/21/98
Signature

3.4.7.3.1 Step 2: Test Equipment Log

Item	Manufacturer	Model/ Part No.	Aerojet Inventory No.	Calibration Date	Calibration Due Date
GAUSSMETER	F.W.BELL	9500	R300690	9/14/98	9/14/00
MAGNETIC FIELD PROBE	F.W.BELL	BEL-MOX-99-2506	R300642	4/27/98	4/27/99

3.4.7.3.2 Step 3: Magnetic Field Emissions

Step	Direction*	Measured mG	Required	Mag field within limits? Yes	Mag field within limits? No	Comments/ Observations
1	0 degrees	-0.01	See 3.4.7.2	✓		
2	30 degrees	+0.28	See 3.4.7.2	✓		
3	60 degrees	+0.13	See 3.4.7.2	✓		
4	90 degrees	-0.30	See 3.4.7.2	✓		
5	120 degrees	-0.60	See 3.4.7.2	✓		
6	150 degrees	-0.84	See 3.4.7.2	✓		
7	180 degrees	-0.88	See 3.4.7.2	✓		
8	210 degrees	-0.77	See 3.4.7.2	✓		
9	240 degrees	-0.67	See 3.4.7.2	✓		
10	270 degrees	-0.51	See 3.4.7.2	✓		
11	300 degrees	-0.25	See 3.4.7.2	✓		
12	330 degrees	-0.06	See 3.4.7.2	✓		

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test log, additional comments or observations, etc.) to this data sheet.
* Relative to instrument connector side.

Signature/Date

Unit AMSU-A1/METSAT
Serial No. 105
Shop Order 653932 Oper 0280000

Engineer: William H. Parker / 12/21/98
Quality Control: 7A 258 12/21/98
Customer Representative: 12-2

AE-26151/5D
22 Sep 98

TEST DATA SHEET 3 (Sheet 2 of 3)
3.4.7: RE04 Test (Cont)

Test Setup Verified: _____ 12/21/98
Signature

3.4.7.3.2 Step 9 (10 inches above): Magnetic Field Emissions

Step	Direction*	Measured mG	Required	Mag field within limits? Yes	Mag field within limits? No	Comments/ Observations
1	0 degrees	+0.53	See 3.4.7.2	✓		
2	30 degrees	+0.14	See 3.4.7.2	✓		
3	60 degrees	+0.11	See 3.4.7.2	✓		
4	90 degrees	-0.20	See 3.4.7.2	✓		
5	120 degrees	-0.43	See 3.4.7.2	✓		
6	150 degrees	-0.53	See 3.4.7.2	✓		
7	180 degrees	-0.24	See 3.4.7.2	✓		
8	210 degrees	-0.23	See 3.4.7.2	✓		
9	240 degrees	-0.12	See 3.4.7.2	✓		
10	270 degrees	+0.06	See 3.4.7.2	✓		
11	300 degrees	+0.14	See 3.4.7.2	✓		
12	330 degrees	+0.15	See 3.4.7.2	✓		

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test log, additional comments or observations, etc.) to this data sheet.
* Relative to instrument connector side.

TEST DATA SHEET 3 (Sheet 3 of 3)
3.4.7: RE04 Test (Cont)

Test Setup Verified: Ken Shane 12/21/98
Signature

3.4.7.3.2 Step 9 (10 inches ~~above~~ below WHP 12/21/98): Magnetic Field Emissions

Step	Direction*	Measured mG	Required	Mag field within limits? Yes	No	Comments/ Observations
1	0 degrees	-0.05	See 3.4.7.2	✓		
2	30 degrees	-0.10	See 3.4.7.2	✓		
3	60 degrees	-0.18	See 3.4.7.2	✓		
4	90 degrees	-0.35	See 3.4.7.2	✓		
5	120 degrees	-0.69	See 3.4.7.2	✓		
6	150 degrees	-0.74	See 3.4.7.2	✓		
7	180 degrees	-0.79	See 3.4.7.2	✓		
8	210 degrees	-0.83	See 3.4.7.2	✓		
9	240 degrees	-0.82	See 3.4.7.2	✓		
10	270 degrees	-0.76	See 3.4.7.2	✓		
11	300 degrees	-0.68	See 3.4.7.2	✓		
12	330 degrees	-0.59	See 3.4.7.2	✓		

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test log, additional comments or observations, etc.) to this data sheet.
* Relative to instrument connector side.

Unit AMSU-A1/METSAT
Serial No. 105
Shop Order 653 Oper 028000

Signature/Date
Engineer: William H. Parker / 12/21/98
Quality Control: (7A 258) 12/21/98
Customer Representative: 12-22-98

TEST DATA SHEET 4 (Sheet 1 of 4)
3.4.8: CS01/CS02 Test

Test Setup Verified: Ken Shanes 12-11-98
Signature

3.4.8.3.1 Step 1: Test Equipment Log

Item	Manufacturer	Model/ Part No.	Aerojet Inventory No.	Calibration Date	Calibration Due Date
Function Generator	HP	3325A	46560	10-6-98	2-6-00
Oscilloscope	Tek	TDS380	200084	5-29-97	2-24-99
Amplifier	McIntosh	MC2205	45071	NDG	NDG
Transformer	Solar	6220-1A	L502141	CNR	CNR

3.4.8.3.2: Susceptibility to Injected Electromagnetic Energy on Power Leads, 30 Hz to 150 kHz

+28V Main Power Bus

Frequency Range	Test Level (Volts) p-p	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts) p-p	Comments/ Observations
			ST	EL	SL		
30 - 300 Hz	0.3	SINE			✓	0.3	PASS
0.3 - 3.0 kHz	0.3	SINE			✓	0.3	PASS
3.0 - 30 kHz	0.3	SINE			✓	0.3	PASS
30 - 150 kHz	0.3	SINE			✓	0.3	PASS

* ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test logs, additional comments or observations, etc.) to this data sheet.

Unit AMSU-A1/METSAT

Serial No. 105

Shop Order 653932 Oper 0280000

Signature/Date

Engineer: William H. Parker 12/11/98

Quality Control: Estelle M. Hayslett 12/14/98

Customer Representative: J. Sanford 12-14-98

AE-2615-SL
22 Sep 98

TEST DATA SHEET 4 (Sheet 2 of 4)
3.4.8: CS01/CS02 Test (Cont)

28V Main Bus Return

Frequency Range	Test Level (Volts)	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts) p-p	Comments/ Observations
			ST	EL	SL		
30-300 HZ	1-p 0.3	SINE			✓	0.3	PASS
0.3-3.0 KHZ	0.3	SINE			✓	0.3	PASS
3.0-30 KHZ	0.3	SINE			✓	0.3	PASS
30-150 KHZ	0.3	SINE			✓	0.3	PASS

+28V Pulse Load Bus

Frequency Range	Test Level (Volts)	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts) p-p	Comments/ Observations
			ST	EL	SL		
30-300 HZ	1-p 0.4	SINE			✓	0.4	PASS
0.3-3.0 KHZ	0.4	SINE			✓	0.4	PASS
3.0-30 KHZ	0.4	SINE			✓	0.4	PASS
30-150 KHZ	0.4	SINE			✓	0.4	PASS

28V Pulse Load Bus Return

Frequency Range	Test Level (Volts)	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts) p-p	Comments/ Observations
			ST	EL	SL		
30-300 HZ	0.4 p-p	SINE			✓	0.4	PASS
0.3-3.0 KHZ	0.4	SINE			✓	0.4	PASS
3.0-30 KHZ	0.4	SINE			✓	0.4	PASS
30-150 KHZ	0.4	SINE			✓	0.4	PASS

* ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit

TEST DATA SHEET 4 (Sheet 3 of 4)
3.4.8: CS01/CS02 Test (Cont)

+28V Analog Telemetry Bus

Frequency Range	Test Level (Volts)	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts)	Comments/ Observations
			ST	EL	SL		
30 - 300HZ	0.32	SINE			✓	0.3	
0.3 - 3.0KHZ	0.32	SINE			✓	0.3	
3.0 - 30KHZ	0.32	SINE			✓	0.3	
30 - 150KHZ	0.34	SINE			✓	0.3	

28V Analog Telemetry Bus Return

Frequency Range	Test Level (Volts)	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts)	Comments/ Observations
			ST	EL	SL		
30 - 300HZ	0.31	SINE			✓	0.3	
0.3 - 3.0KHZ	0.32	SINE			✓	0.3	
3.0 - 30KHZ	0.32	SINE			✓	0.3	
30 - 150KHZ	0.34	SINE			✓	0.3	

+10V Interface Bus

Frequency Range	Test Level (Volts)	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts)	Comments/ Observations
			ST	EL	SL		
30 - 300HZ	0.12	SINE			✓	0.1	
0.3 - 3.0KHZ	0.12	SINE			✓	0.1	
3.0 - 30KHZ	0.13	SINE			✓	0.1	
30 - 150KHZ	0.14	SINE			✓	0.1	

* ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit

TEST DATA SHEET 4 (Sheet 4 of 4)
3.4.8: CS01/CS02 Test (Cont)

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22 Sep 98

10V Interface Bus Return

Frequency Range	Test Level (Volts) p-p	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts) p-p	Comments/ Observations
			ST	EL	SL		
30-300HZ	0.11	SINE			✓	0.1	
0.3-3.0KHZ	0.12	SINE			✓	0.1	
3.0-30KHZ	0.13	SINE			✓	0.1	
30-150 KHZ	0.14	SINE			✓	0.1	

*** ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit**

TEST DATA SHEET 5 (Sheet 1 of 2)
3.4.8: CS02 Test (CM)

Test Setup Verified: R. Khouri
Signature

3.4.8.3.1 Step 1: Test Equipment Log

Item	Manufacturer	Model/ Part No.	Aerojet Inventory No.	Calibration Date	Calibration Due Date
LISN	NASA	N/A	N/A	N/A	N/A
Current Probe	AIL TECH	91550-2B	L-509571	4-23-97	10-23-99
O'Scope	TEKTRONIX	TDS380	C200084	5-24-97	2-24-99
Plotter	HP	7470A	57707	N/A	N/A
EMC Analyzer	HP	8591EM	C200229	1-16-98	1-16-99
Function Generator	HP	HP3325A	46560	10-6-98	2-6-00
Swept Signal Gen.	HP	83630B	C200202	01-15-98	01-15-99
Power Amplifier	Eaton	5001	R300637	4-13-98	4-13-99
Power Amplifier	Eaton	5020B	46126	4-7-92	NDG

3.4.8.3.2: Susceptibility to Injected Electromagnetic Energy on Power Leads, 100 kHz to 50 MHz, CM

+28V Main Power Bus Return

Frequency Range	Test Level (Volts) p-p	Signal Type or Waveform	Limit Factor* ST	EL	SL	Spec Limit Criteria (Volts) p-p	Comments/ Observations
100-500 KHz	.34	Sine			✓	0.3	
500-1000 KHz	.34	Sine			✓	0.3	
1-5 MHz	.35	Sine			✓	0.3	
5-10 MHz	0.32	SINE			✓	0.3	
10-20 MHz	0.34	SINE			✓	0.3	
20-50 MHz	0.35	SINE			✓	0.3	

* ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test logs, additional comments or observations, etc.) to this data sheet.

Signature/Date

Unit AMSU-A1 /METSAT

Serial No. 105

Shop Order 653932 Oper 0280000

Engineer: William H. Parker /14 DEC 1998

Quality Control: (TA 258) C. Morgan 12/14/98

Customer Representative: [signature] 12-15-98

TEST DATA SHEET 5 (Sheet 2 of 2)
3.4.8: CS02 Test, (CM) (Cont)

+28V Pulse Load Bus Return

Frequency Range	Test Level (Volts)	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts)	Comments/ Observations
			ST	EL	SL		
100 - 500KHZ	0.45 p-p	SINE			✓	0.4	
500 - 1000KHZ	0.43	SINE			✓	0.4	
1 - 5 MHZ	0.43	SINE			✓	0.4	
5 - 10 MHZ	0.43	SINE			✓	0.4	
10 - 20 MHZ	0.44	SINE			✓	0.4	
20 - 50 MHZ	0.44	SINE			✓	0.4	

+28V Analog Telemetry Bus Return

Frequency Range	Test Level (Volts)	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts)	Comments/ Observations
			ST	EL	SL		
100 - 500KHZ	0.33 p-p	SINE			✓	0.3	
500 - 1000KHZ	0.33	SINE			✓	0.3	
1 - 5 MHZ	0.33	SINE			✓	0.3	
5 - 10 MHZ	0.33	SINE			✓	0.3	
10 - 20 MHZ	0.33	SINE			✓	0.3	
20 - 50 MHZ	0.33	SINE			✓	0.3	
						0.3	

+10V Interface Bus Return

Frequency Range	Test Level (Volts)	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria (Volts)	Comments/ Observations
			ST	EL	SL		
100 - 500KHZ	0.13 p-p	SINE			✓	0.1	
500 - 1000KHZ	0.13	SINE			✓	0.1	
1 - 5 MHZ	0.12	SINE			✓	0.1	
5 - 10 MHZ	0.13	SINE			✓	0.1	
10 - 20 MHZ	0.14	SINE			✓	0.1	
20 - 50 MHZ	0.13	SINE			✓	0.1	

* ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit

TEST DATA SHEET 6 (Sheet 1 of 2)
3.4.9: CS06 Test

Test Setup Verified: Ken Shane 12/22/98
Signature

3.4.9.3.1 Step 3: Test Equipment Log

Item	Manufacturer	Model/ Part No.	Aerojet Inventory No.	Calibration Date	Calibration Due Date
25 Pin Breakout box	Aerojet	SK1358704-2	743-5910-08	CNR	CNR
(4) Feed Thru Capacitor	Solar	6512-106R	L80364 thru 4	CNR	CNR
(4) Feed Thru Capacitor	Solar	6512-106R	L80365 thru 3	CNR	CNR
Spike Generator	Solar	7054-1	46134-3	NDG	NDG
O'Scope	Tek	TDS-380	C200084	5-24-97	2-29-99

3.4.9.3.2: Susceptibility to Injected Transients on Power Leads

+28V Main Power Bus

Pulse Amplitude and Polarity	Signal Type or Waveform	Test Level	Limit Factor*			Spec Limit Criteria	Comments/ Observations
			ST	EL	SL		
10V, Positive	See Figure 9	+10V			✓	+10V	
12V, Negative	See Figure 9	-12.4V			✓	-12V	

+28V Analog Telemetry Bus

Pulse Amplitude and Polarity	Signal Type or Waveform	Test Level	Limit Factor*			Spec Limit Criteria	Comments/ Observations
			ST	EL	SL		
10V, Positive	See Figure 9	+10.2V			✓	+10V	
12V, Negative	See Figure 9	-12.4V			✓	-12V	

* ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit

Signature/Date

Unit AMSU-A1/METSAT

Engineer: William D. Parker / 12/22/98

Serial No. 105

Quality Control: (7A 258) C Morgan 12/22/98

Shop Order 653932 Oper 0280000

Customer Representative: DEC 23 98

TEST DATA SHEET 6 (Sheet 2 of 2)
3.4.9: CS06 Test (Cont)

AE-26151/5D
22 Sep 98

+28V Pulse Load Bus

Pulse Amplitude and Polarity	Signal Type or Waveform	Test Level	Limit Factor*			Spec Limit Criteria	Comments/ Observations
			ST	EL	SL		
8V, Positive	See Figure 9	+8.2V			✓	+8V	
13V, Negative	See Figure 9	-13.2V			✓	-13V	

+10V Interface Bus

Pulse Amplitude and Polarity MNAP 12/22/98	Signal Type or Waveform	Test Level	Limit Factor*			Spec Limit Criteria MNAP 12/22/98	Comments/ Observations
			ST	EL	SL		
1V ~~10V~~, Positive	See Figure 9	+1.1V			✓	~~+10V~~ +1V	
1V ~~12V~~, Negative	See Figure 9	-1.1V			✓	~~-12V~~ -1V	
MNAP 12/22/98						MNAP 12/22/98	

AMSU-B BEST 12-22-98

* ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit

12/21/98

Report 11411
26 February 1999

TEST DATA SHEET 7 (Sheet 2 of 4) 12/21/98

3.4.10: RS03 Test

Test Setup Verified: Jon Brandenburg 12-21-98
Signature

3.4.10.3.2 Step 1: Test Equipment Log

Item	Manufacturer	Model/ Part No.	Aerojet Inventory No.	Calibration Date	Calibration Due Date
10MHZ - 26.5 GHZ SWEPT SIGNAL GENERATOR	H-P	83630B	C200202	1/15/98	1/15/99
SPECTRUM ANALYZER	H-P	70004A	C200064	11/12/98	11/12/99
PLOTTER	H-P	7470A	57707	N/A	N/A
1-2 GHZ TWTA	VARIAN	VZL6941 K1COF	AC0047566	N/A	N/A
2-4 GHZ TWTA	VARIAN	VZ56951 K2COF	46957	N/A	N/A
4-8 GHZ TWTA	VARIAN	VZC691 K2COF	47517	N/A	N/A
8-18 GHZ TWTA	VARIAN	VZM6991 K3AD	R300670	8/19/98	8/19/99
RIDGED GUIDE HORN ANTENNA	EATON	960001	46134-6	N/A	N/A
RIDGED GUIDE HORN ANTENNA	ELECTROMETRICS	RGA-18C	L508357	10/21/98	10/21/99
PULSE GENERATOR	H-P	8114A	C200291	2/21/98	2/21/99

NOTE: Attach all backup data generated during the test (photos, printouts, plots, test logs, additional comments or observations, etc.) to this data sheet.

Signature/Date

Unit AMSU-A1 / METSAT

Engineer: 21 Dec 98

Serial No. 105

Quality Control: 12/21/98

Shop Order 653932 Oper 0280000

Customer Representative: 12-22-98

TEST DATA SHEET 7 (Sheet 3 of 4)

3.4.10: RS03 Test (Cont)

3.4.10.3: Susceptibility to Radiated Electric Fields

Frequency Range	Test Level V/m	Signal Type or Waveform	Limit Factor* ST	Limit Factor* EL	Limit Factor* SL	Spec Limit Criteria V/m	Comments/ Observations
14-50 KHz	2.0	SINE			✓	1.0	
50-100 KHz	2.0	SINE			✓	1.0	
100-500KHz	2.0	SINE			✓	1.0	
500-1000KHz	2.0	SINE			✓	1.0	
1 - 5MHz	2.0	SINE			✓	1.0	
5 - 10MHz	2.0	SINE			✓	1.0	
10 - 30MHz	2.0	SINE			✓	1.0	
30 - 50MHz	2.0	SINE			✓	1.0	HORIZONTAL POLARIZATION
50 - 100MHz	2.0	SINE			✓	1.0	" "
100 - 200MHz	2.0	SINE			✓	1.0	" "
30 - 50 MHz	2.0	SINE			✓	1.0	VERTICAL POLARIZATION
50 - 100 MHz	2.0	SINE			✓	1.0	" "
100 - 200 MHz	2.0	SINE			✓	1.0	" "
200 - 500 MHz	2.0	SINE			✓	1.0	
500 - 1000 MHz	2.0	SINE			✓	1.0	
468 MHz	12.2	SINE			✓	12 V/m	
137.1 MHz	37.4	SINE			✓	37 V/m	Vertical / Horizontal
137.5 to 137.62 MHz	7.2	sine			✓	6.9 V/m	Vertical / Horiz
1544.5 MHz	14.1	Sine			✓	14.0	Vertical / Horiz
1698.0 MHz	10.0	Sine			✓	9.8	Vertical / Horiz
1701.0 MHz	38.5	Sine			✓	38	Vertical / Horiz
1702.5 MHz	5.0	Sine			✓	4.8	Vertical / Horiz
1707.0 MHz	19.0	Sine			✓	18.4	Vertical / Horiz
2230.0	10.0	Sine			✓	10.0	Vertical / Horiz
2247.5	45	Sine			✓	4.3	Vertical / Horiz
5220.0	39	Sine			✓	38.0	Vertical / Horiz

* ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit

TEST DATA SHEET 7 (Sheet 2 of 2)
3.4.10: RS03 Test (Cont)

3.4.10.3.3: Susceptibility to Radiated Electric Fields

Frequency Range	Test Level V/m	Signal Type or Waveform	Limit Factor*			Spec Limit Criteria V/m	Comments Observations
			ST	EL	SL		
1 - 2 GHz	2	SINE			✓	2	HORIZONTAL ANT...
2 - 4 GHz	2	SINE			✓	2	
4 - 8 GHz	2	SINE			✓	2	
8 - 10 GHz	2	SINE			✓	2	
10 - 12 GHz	2	SINE			✓	2	
12 - 14 GHz	2	SINE			✓	2	
14 - 16 GHz	2	SINE			✓	2	
16 - 17 GHz	2	SINE			✓	2	↓
17 - 18 GHz	2	SINE			✓	2	HORIZONTAL ANTENNA
1 - 2 GHz	2	SINE			✓	2	VERTICAL ANTENNA
2 - 4 GHz	2	SINE			✓	2	
4 - 8 GHz	2	SINE			✓	2	
8 - 10 GHz	2	SINE			✓ MAX	2	
10 - 12 GHz	2	SINE			✓	2	
12 - 14 GHz	2	SINE			✓	2	
14 - 16 GHz	2	SINE			✓	2	
16 - 17 GHz	2	SINE			✓	2	↓
17 - 18 GHz	2	SINE			✓	2	VERTICAL ANTENNA
7800 MHz	8.5 V/m	Sine			✓	8 V/m	Vertical/Horiz

* ST = Susceptibility Threshold, EL = Equipment Limit, SL = Specification Limit

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