

RFI Test - IVULOTO Softek TxPort

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1 Introduction

This document shows RFI test (electric field only) description and results for the two (2) IVULOTO Softek TxPort units for the Visitor Center. Figure 1 shows the device with power supply in the RFI/EMI shielded enclosure. Figure 2 shows the box closed. The numbers indicate the test points, where the electric field probe was located. Test requested by Jorge Rodriguez.

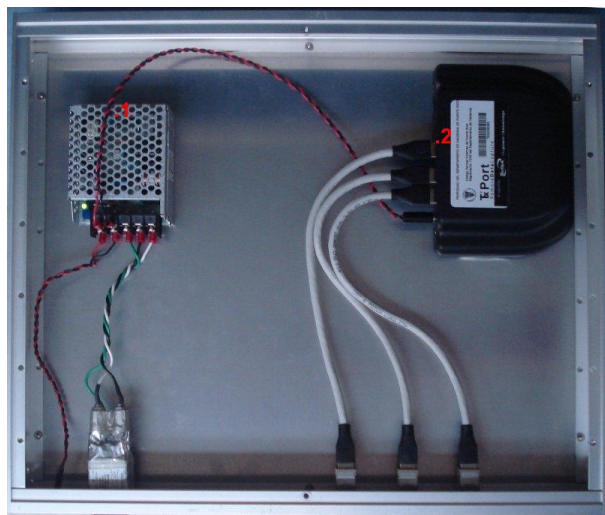


Figure 1: Shielding Open.

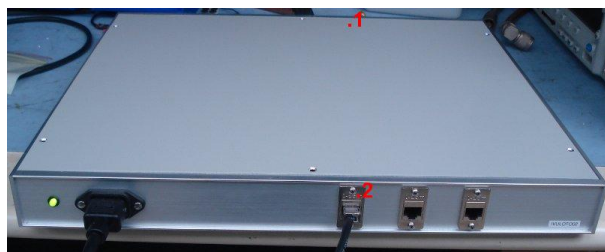


Figure 2: Shielding Closed.

2 Test Equipment

Agilent E4445A Spectrum Analyzer:

- Trace 1: Clear Write, Average ON, 20 spec.
- Trace 2: Max Hold.
- Trace 3: Min Hold.
- 8192 points per spec.
- Internal Amplifier ON.
- 6dB Attenuation.
- SCPI Commands from Python.

ETS Model 7405[1] probe No.904:

- Electric field.
- Res. Freq. >1.0GHz.
- H/E Rejection 30dB.
- Performance: Fig. 3.
- + 15ft coax cable

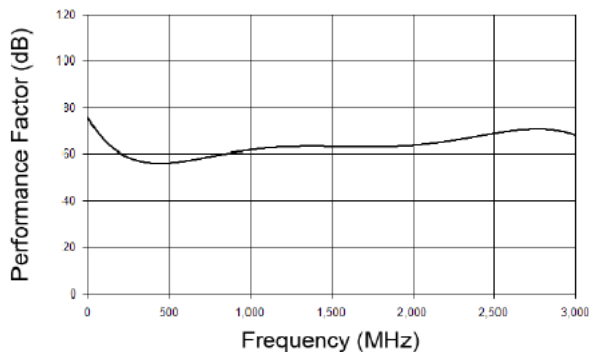


Figure 3: Probe No. 904 Performance.

3 Test Procedure

- 1U rack mount shielded enclosure with Softek TxPort, power supply, AC filter and shielded Ethernet cables. Tested with the top cover open, and closed. Test points indicated in Figs. 1 and 2. Two Units tested.
- Agilent E4445A Spectrum Analyzer preheated for more than 1hour.
- Thirty (30) 100MHz bandwidth scans (12.207kHz per channel), from 0 to 3000MHz, electric and magnetic field.
- Twenty (20) seconds “integration” time.
- Screen/shielded room front door closed. Fluorescent lights OFF.
- A/C ON, eth. switch ON, 10MHz buffer OFF, 10MHz ref. cable disconnected.
- 430MHz and S-band transmitters OFF.

4 Results

Figure 4 shows the results for the test points 1 (top, power supply) and 2 (bottom, Softek TxPort) for the Unit 1 with the top cover of the enclosure removed.

Figure 5 shows the results of points 1 (rear panel, close to the TxPort) and 2 (front panel, close to the network connection) for Unit 1.

Figures 6 and 7 show the results of Unit 2 for the open and closed enclosure configurations, respectively.

References

- [1] ETS LINDGREN, *ETS Near-Field Probe Set Model 7405*.

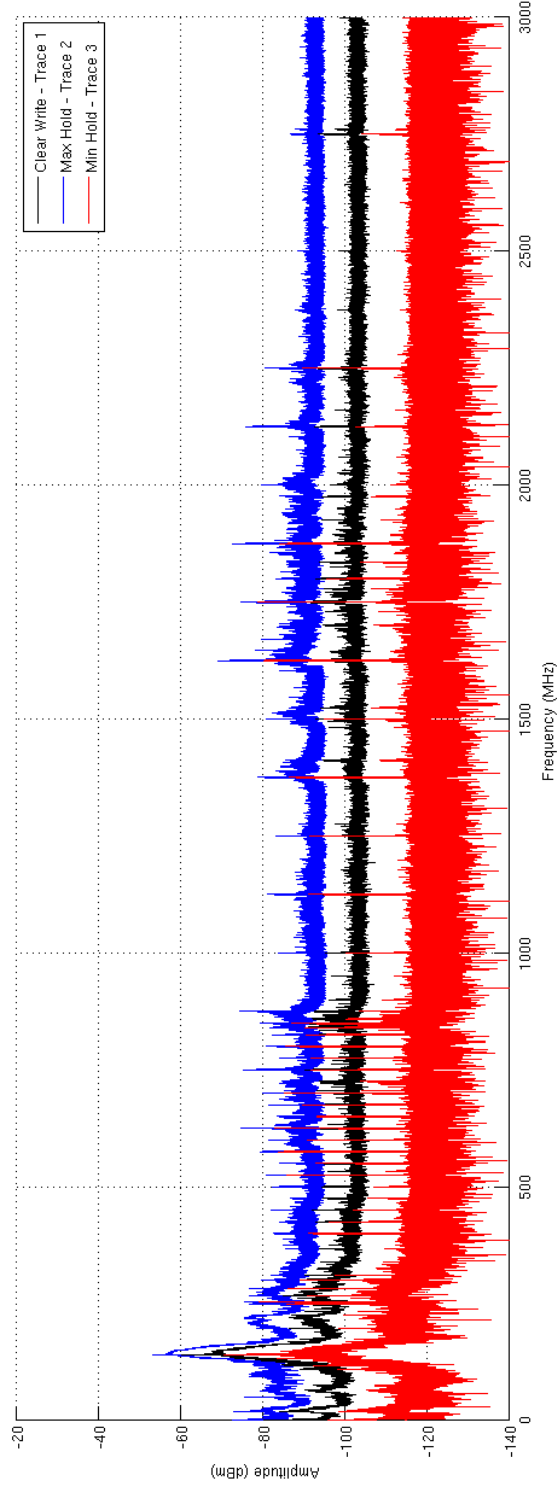
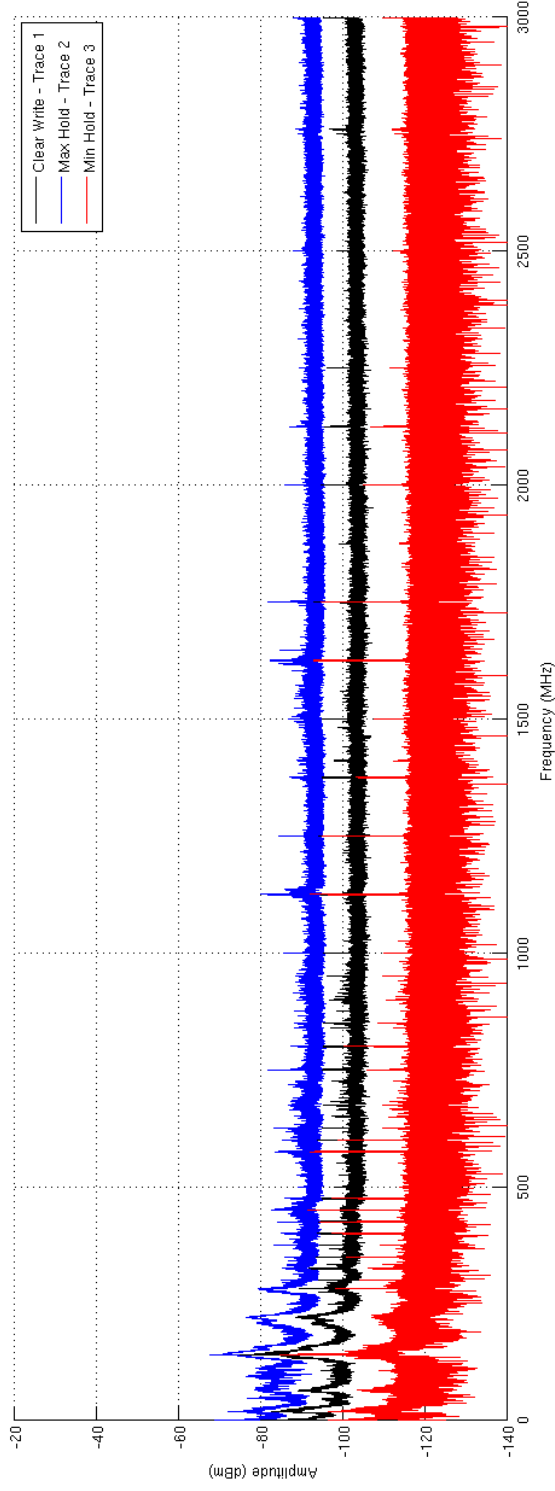


Figure 4: Electric Field Results, Unit 1, open box. Top: Position 1 (PSU); Bottom: Position 2 (TxPort).

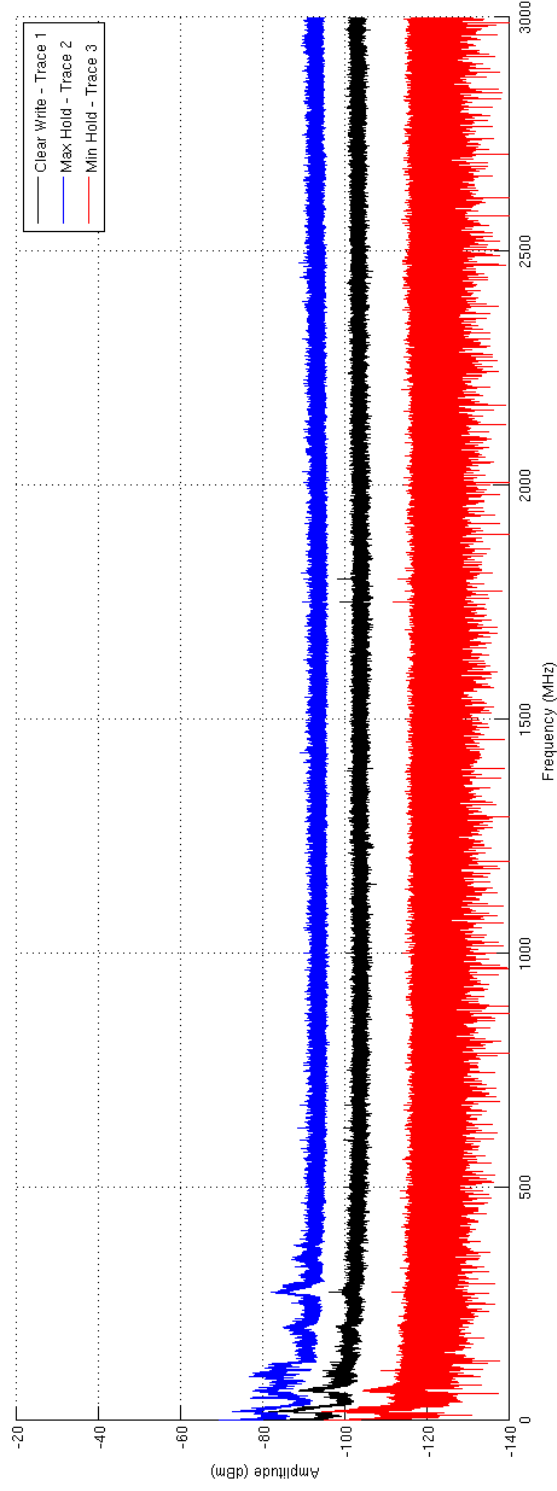
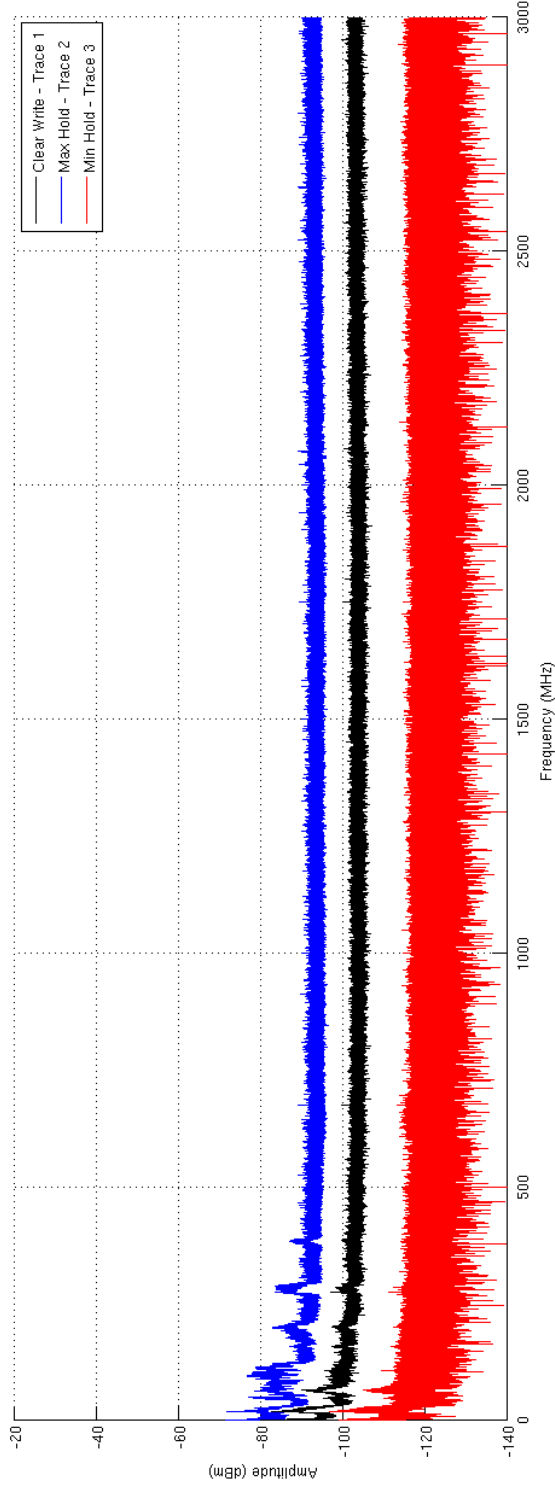


Figure 5: Electric Field Results, Unit 1, closed box. Top: Position 1 (rear); Bottom: Position 2 (front).

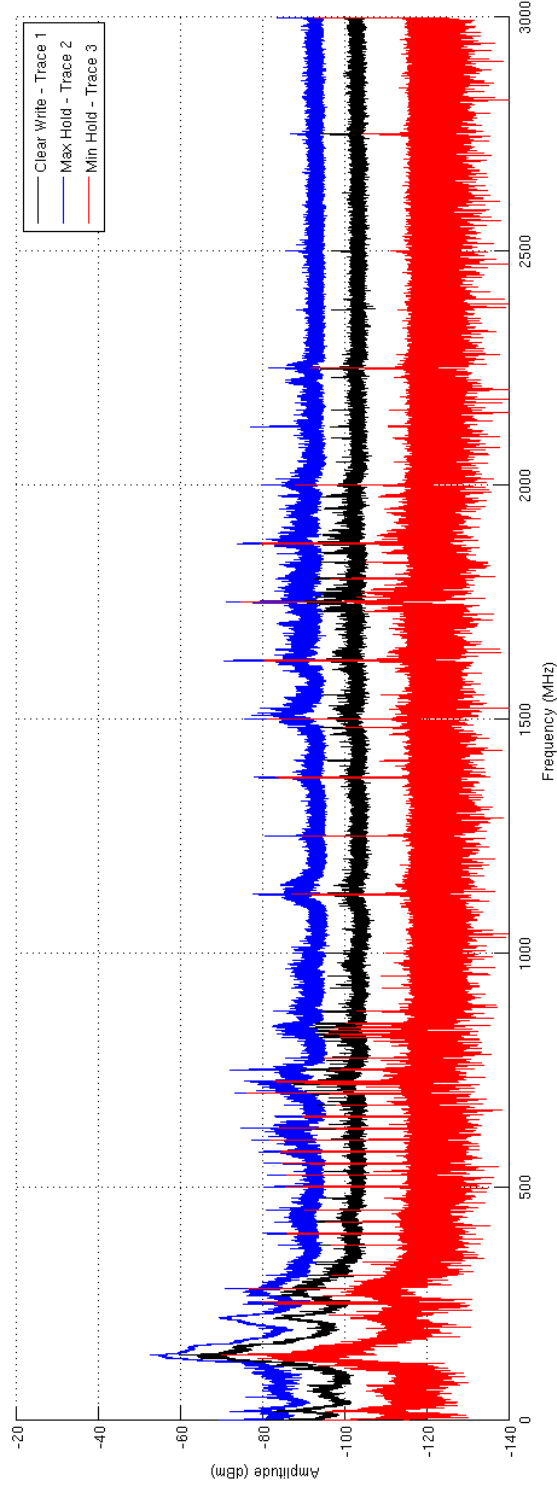
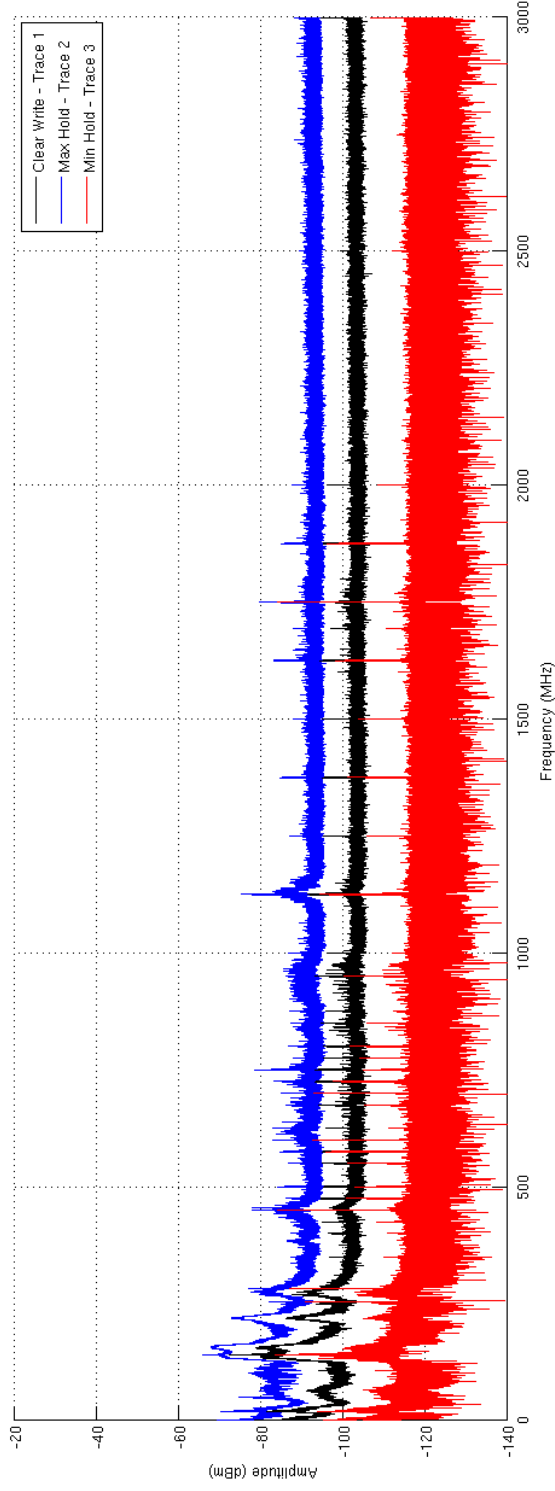


Figure 6: Electric Field Results, Unit 2, open box. Top: Position 1 (PSU); Bottom: Position 2 (TxPort).

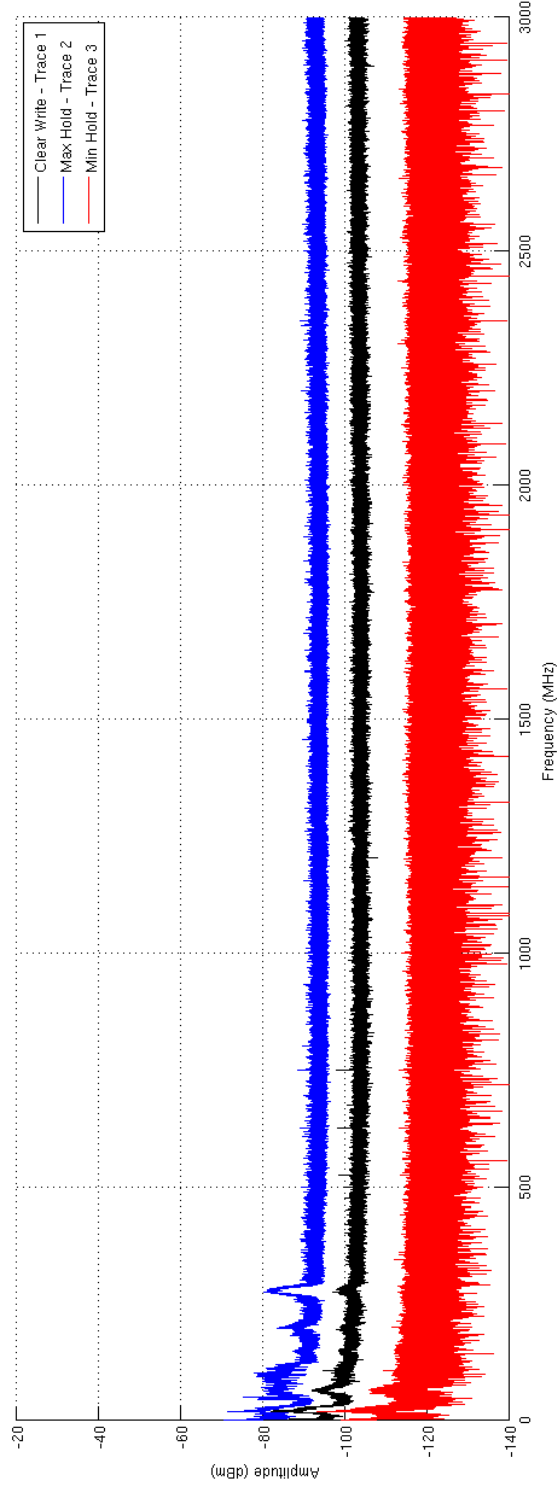
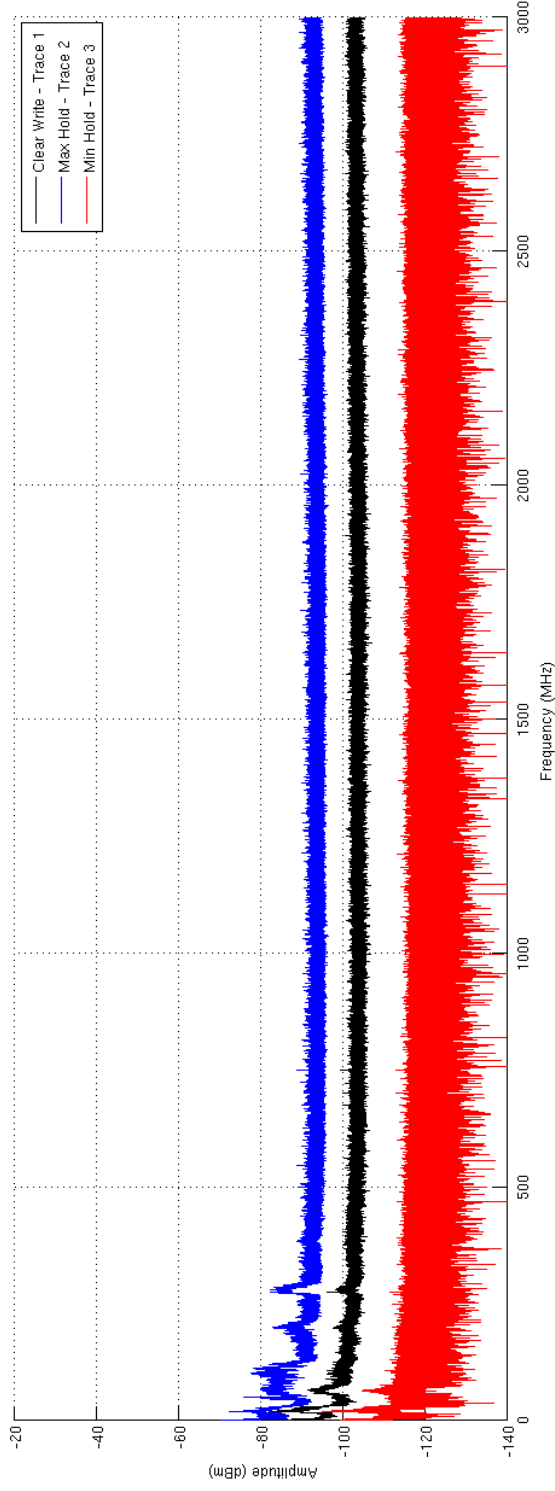


Figure 7: Electric Field Results, Unit 2, closed box. Top: Position 1 (rear); Bottom: Position 2 (front).