
Review of RFI ambience around New Servo Lab located in central square near Jog shed

Report By: SSK/PAR/SBB

Dated 3rd March 2011

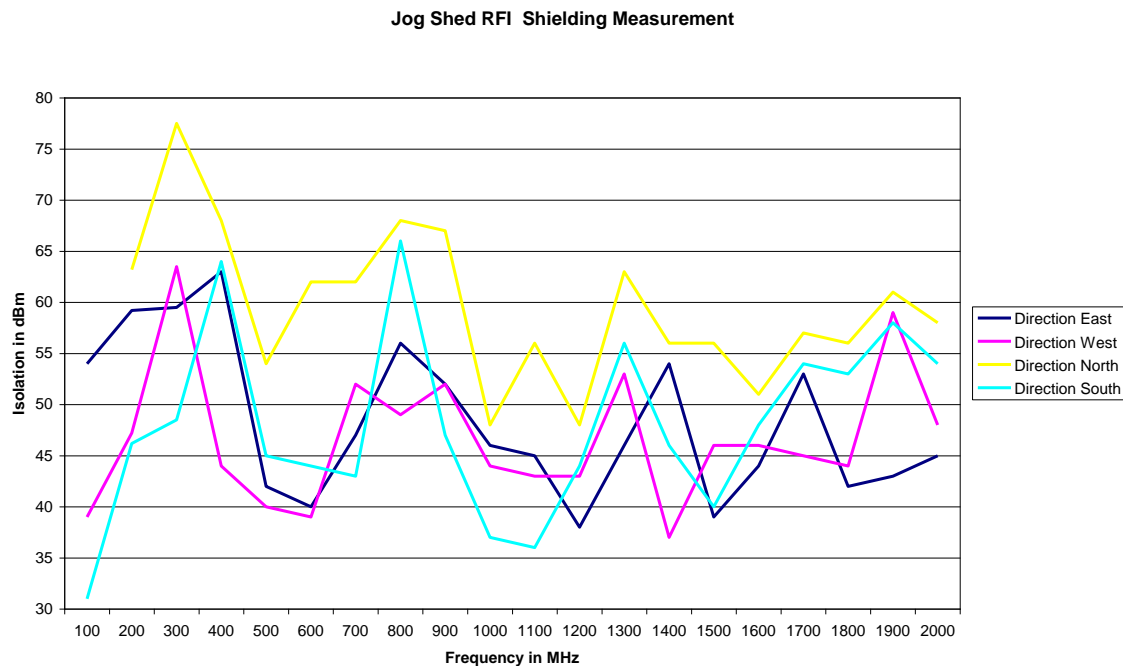
1.0 Introduction

The New servo lab is operational in central square near Jogshed. The servo lab is provided with RFI shielding and the isolation and shielding effectiveness is shown in figure 1. With the servo lab moved to this shielded lab and currently fully functional the RFI group has evaluated the contribution of this lab to increase in RFI levels around this lab located in central square. This is done with completely switching off the AC power to the lab and their by ensuring that no equipment is turned ON during the measurement. The second part of the RFI measurement was done by turning ON the AC supply and also by ensuring that all equipments including PCs, Air-condition units, network equipments along with all other servo system. The measurements are given below as spectrum analyser plots with two traces showing one with completely switched OFF and switched ON condition. The RFI spurious lines generated from the lab is highlighted with frequency label for reference.

Isolation measurement ¹ result (16th Aug. 2010) :

- 1) The average Isolation measured for Jog shed in all direction is about 45 dB.
- 2) The lowest isolation measured in south direction (door side) at 1.1 GHz is 36 dB.
- 3) The highest Average Isolation measured in North direction is 55 dB

Figure 1. New Servo Lab RFI Shielding Isolation measurement result



2.0 Review of RFI ambience around New Servo Lab located in central square near Jog shed (2nd March 2010)

Measurement setup:

1. The measurements were taken at 10 meter distance from the center of the lab from all four directions.
2. A 20dB Amplifier with LPDA and Rhohe and Schwarz Spectrum analyzer is used for the measurement.
3. The measurement was done in two test condition (i) With Lab ON and (ii) with Lab OFF.

Measurement Result:

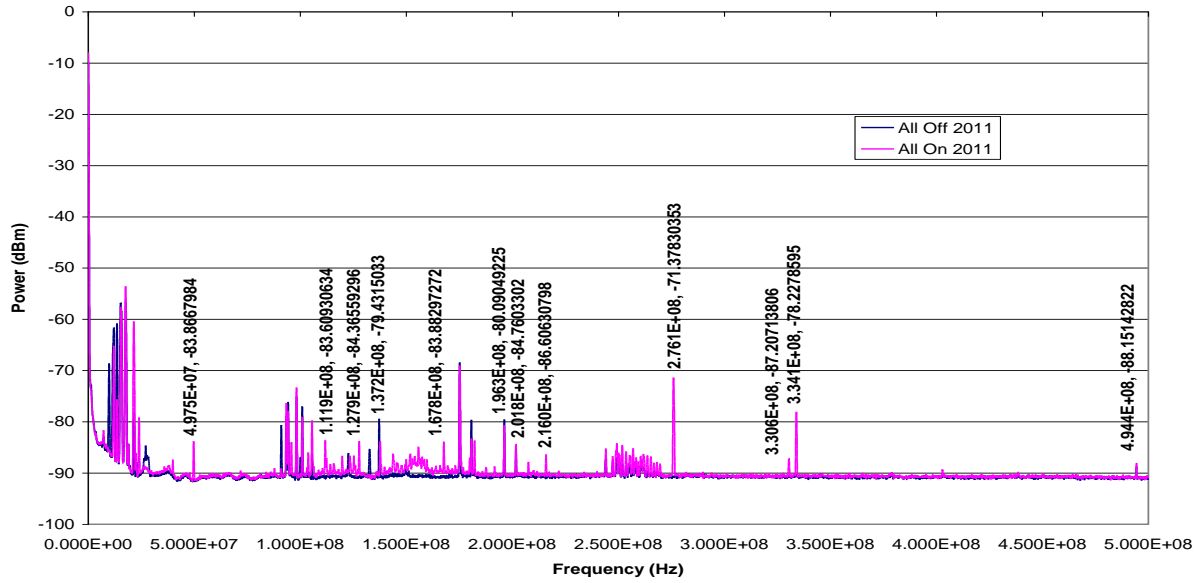
Figures 2, 3, 4 and 5 shows the spectrum analyser plots for frequency ranges 0 – 500 MHz, 500 – 1000 MHz and 1000 – 2000 MHz in all four directions East, West, North and South directions with antenna facing the New Servo Lab from outside the building. The RFI lines generated with New Servo Lab ON is shown with frequency labels for analysis.

3.0 Conclusion:

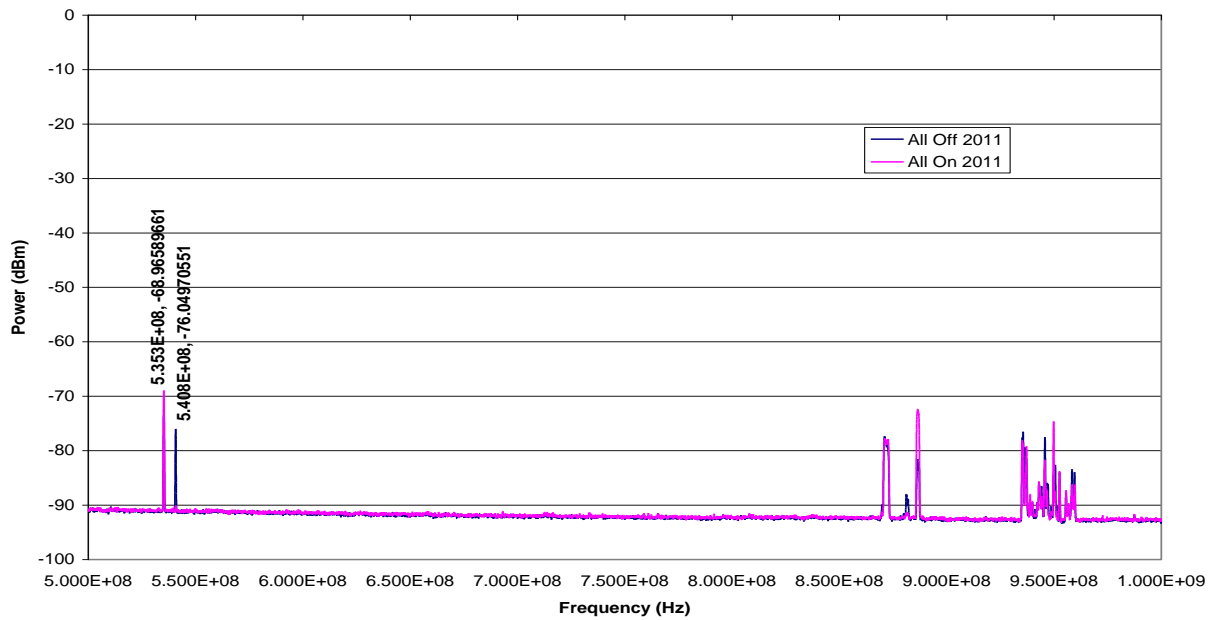
1. A second level of controlled measurement will be carried to identify the equipment generating these spurious lines.

Figure 2. RFI from East Side of Jogshed (New Servo) Lab

Jogshed lab RFI data East side 0-500MHz (03/03/2011)



Jogshed lab RFI data East side 500-1000MHz (03/03/2011)



Jogshed lab RFI data 1000-2000MHz (03/03/2011)

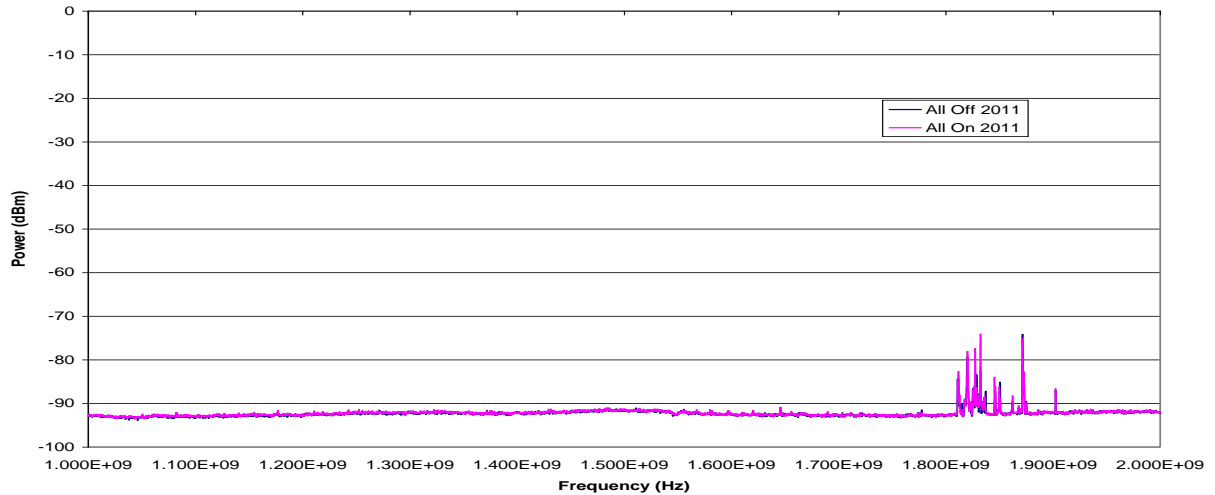
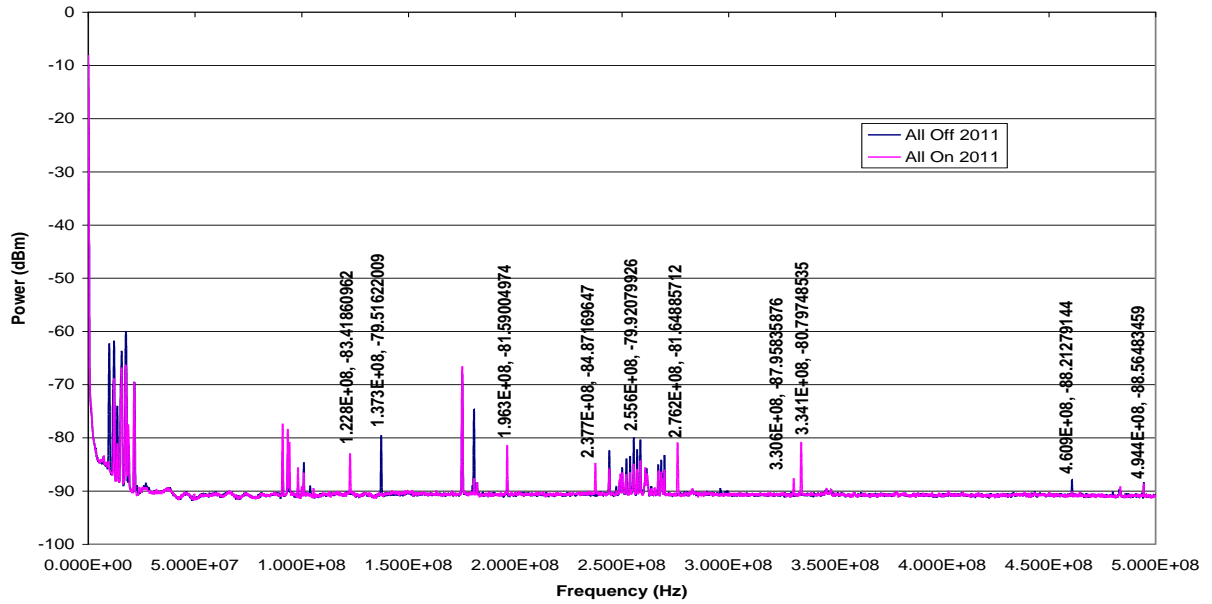
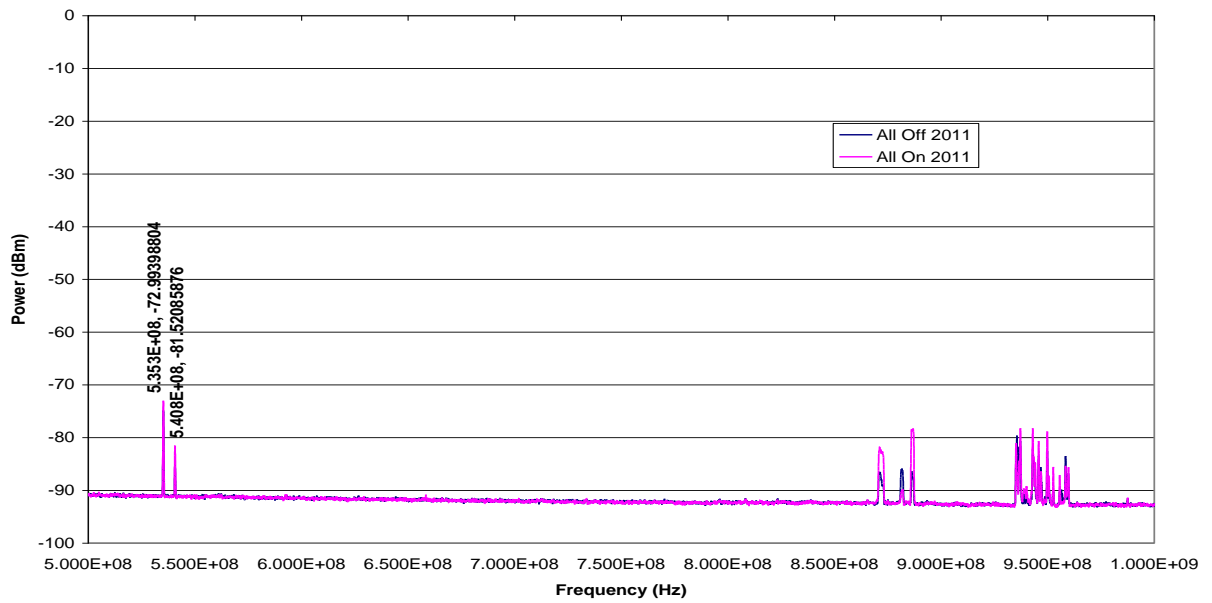


Figure 3. RFI from West Side of Jogshed (New Servo) Lab

Jogshed lab RFI data West side 0-500MHz (03/03/2011)



Jogshed lab RFI data West side 500-1000MHz (03/03/2011)



Jogshed lab RFI data West side 1000-2000MHz (03/03/2011)

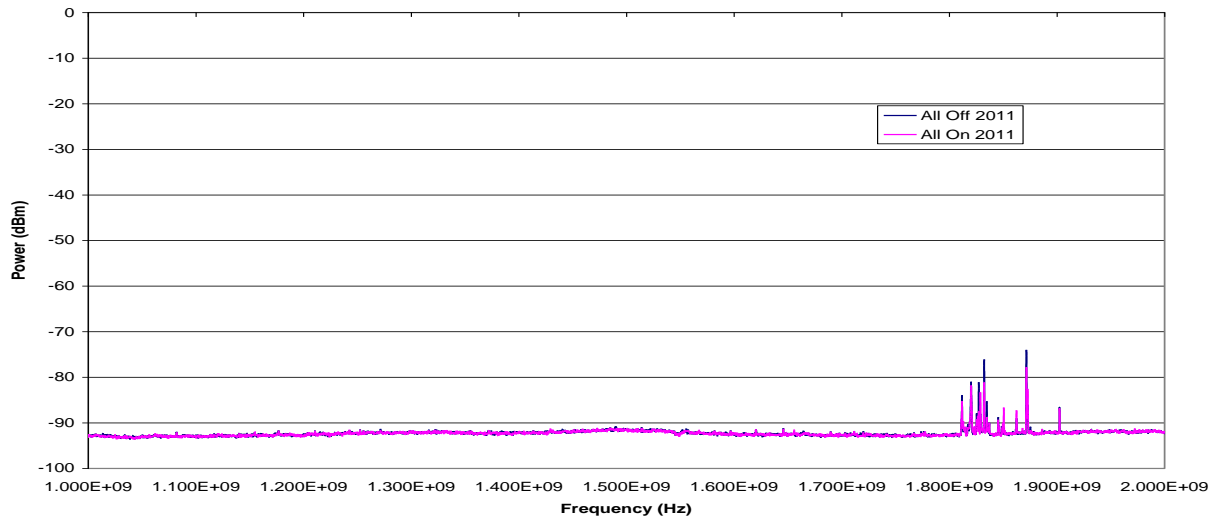
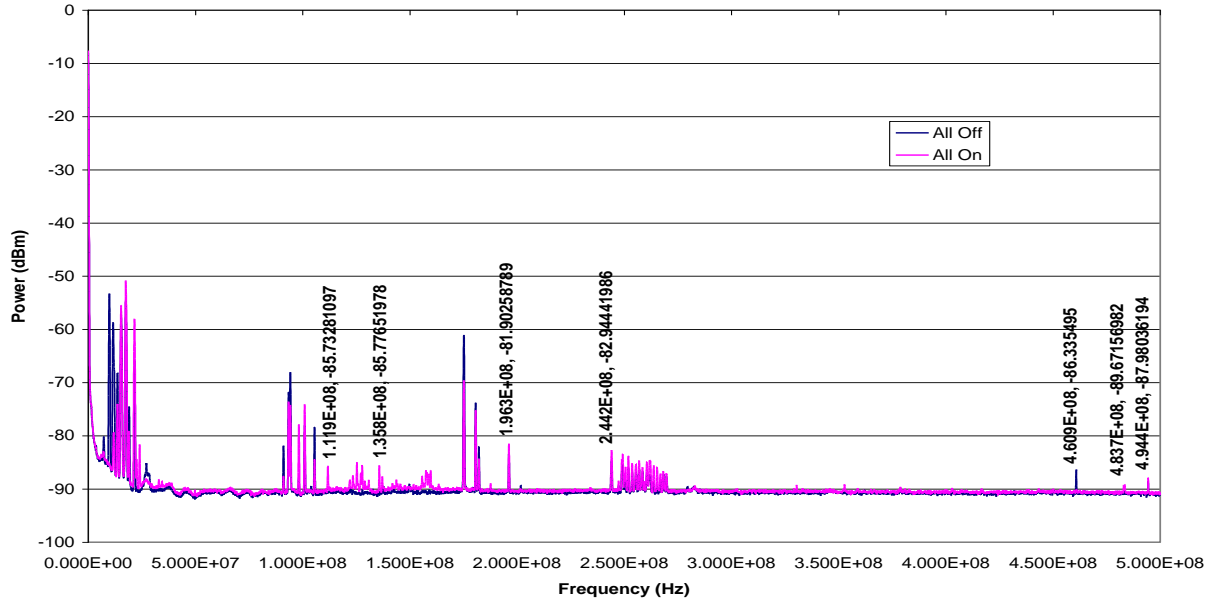
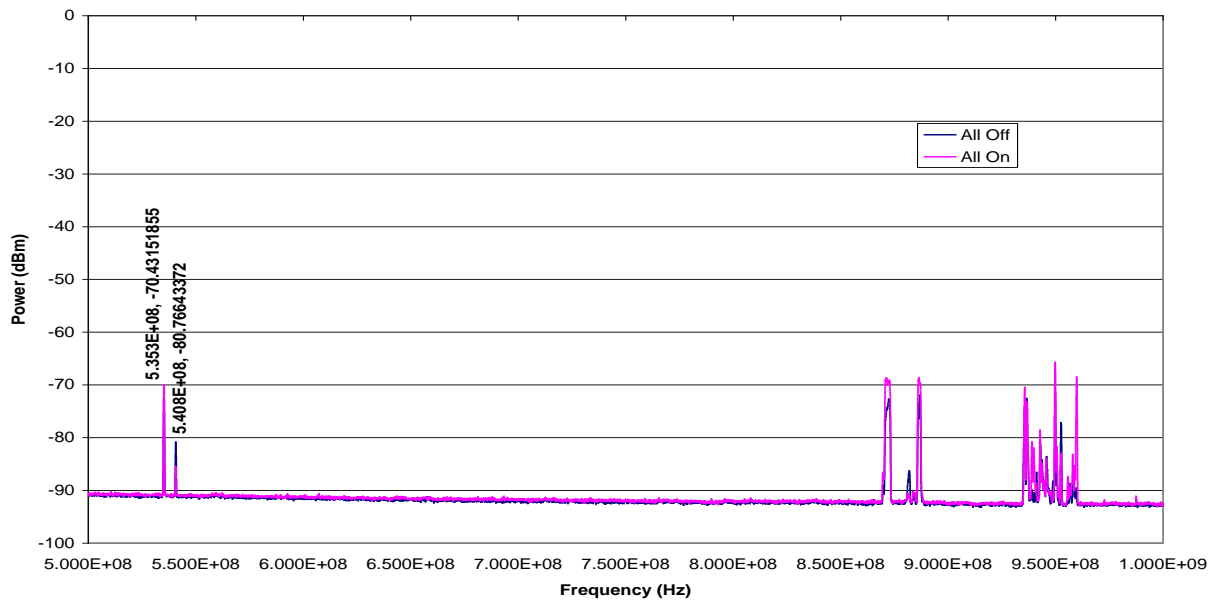


Figure 4. RFI from North Side-front of Jogshed (New Servo) Lab

Jogshed lab RFI data North side 0-500MHz (03/03/2011)



Jogshed lab RFI data North side 500-1000MHz (03/03/2011)



Jogshed lab RFI data North side 1000-2000MHz (03/03/2011)

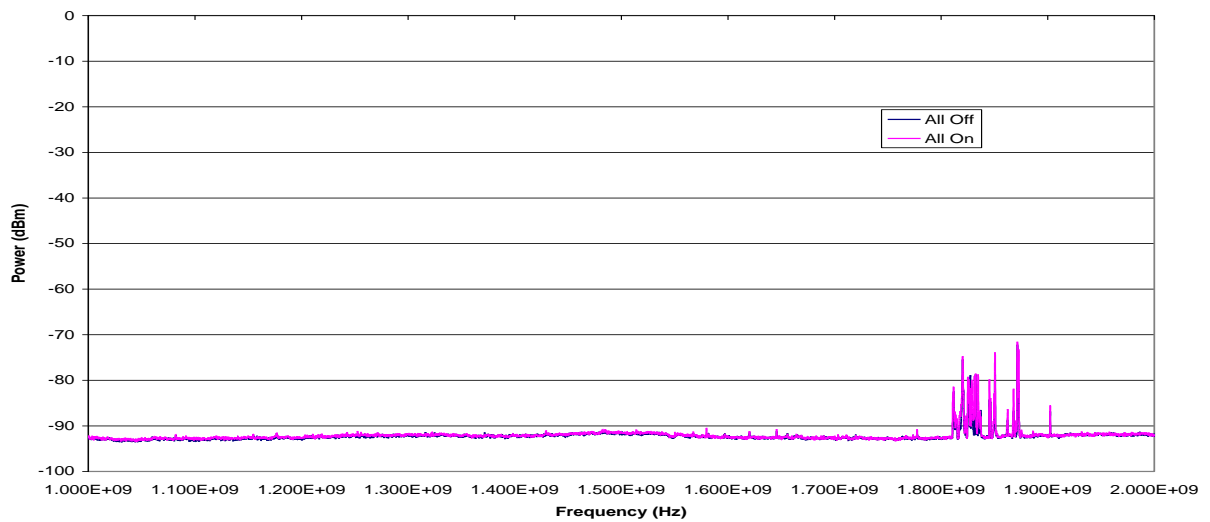
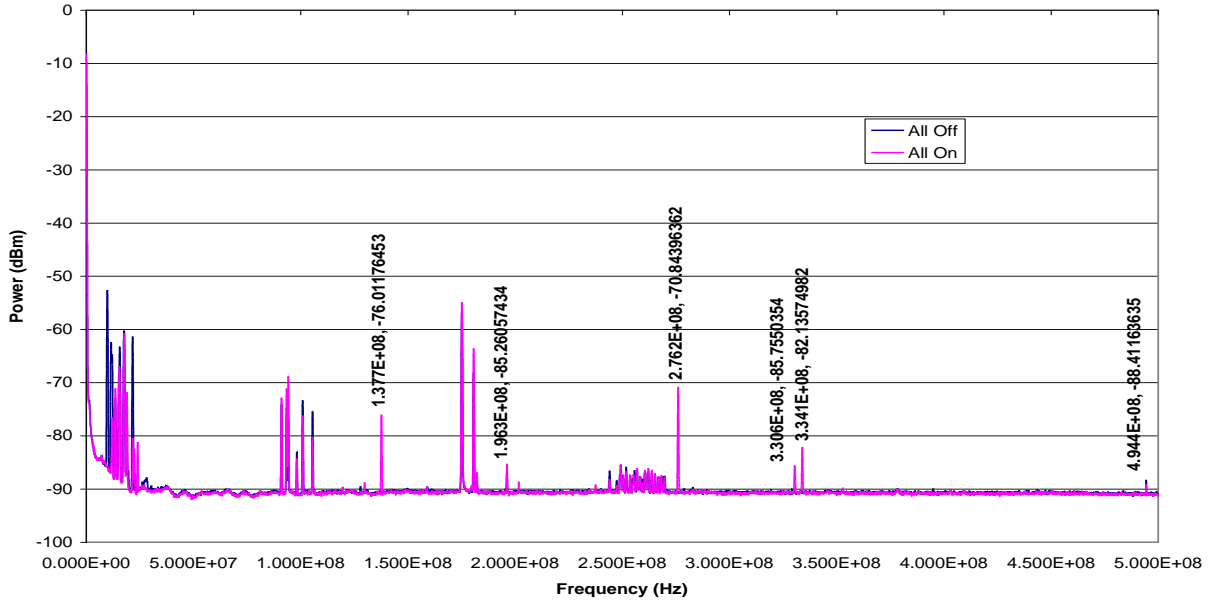
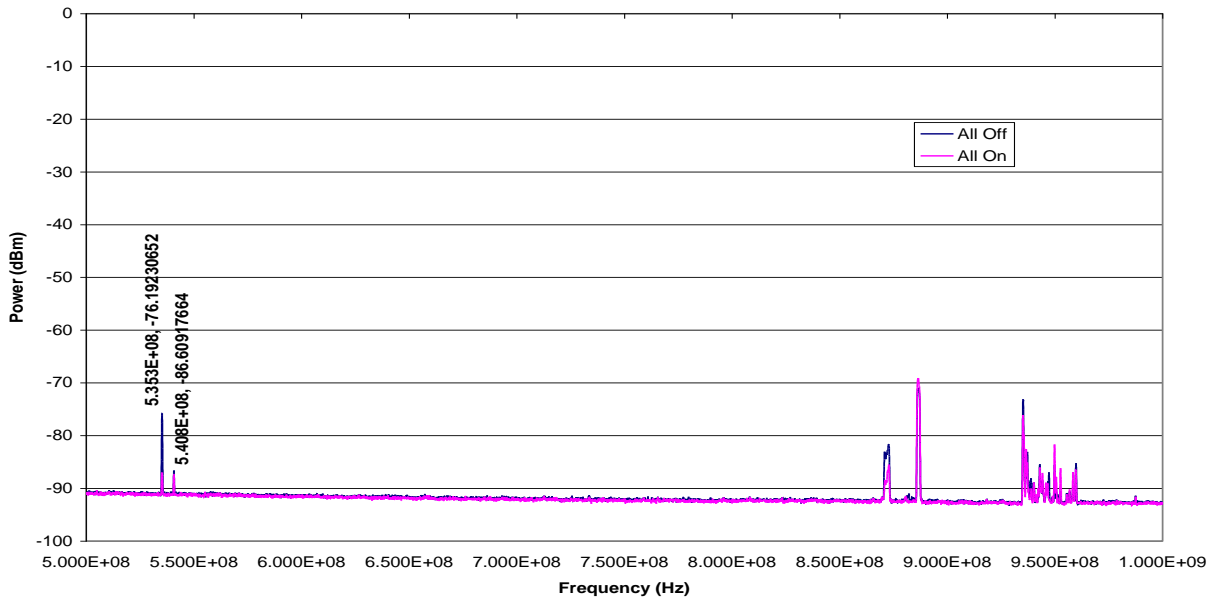


Figure 5. RFI from South Side-back of Jogshed (New Servo) Lab

Jogshed lab RFI data South side 0-500MHz (03/03/2011)



Jogshed lab RFI data South side 500-1000MHz (03/03/2011)



Jogshed lab RFI data South side 1000-2000MHz (03/03/2011)

