

Automatic Impedance Measurement System for NSTL (AIMS)

Prepared For:

**PROFESSIONAL TECHNOLOGIES
VISHAKHAPATNAM**

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Automatic Impedance Measurement System for NSTL

1 System Requirements

1.1 Hardware

1. Agilent 4192A LF Impedance Analyzer, 5 Hz to 13 MHz
2. GPIB Interface Cable
3. Agilent 82350A PCI High-Performance GPIB Interface Card for Windows95/98/NT/2000.
4. IBM Compatible Personal Computer
 - a. Pentium Class with CPU speed 400 MHz or better
 - b. 128MB SDRAM.
 - c. PCI expansion slot
 - d. Windows 9X/NT/ME/ 2000 operating system.

1.2 Software

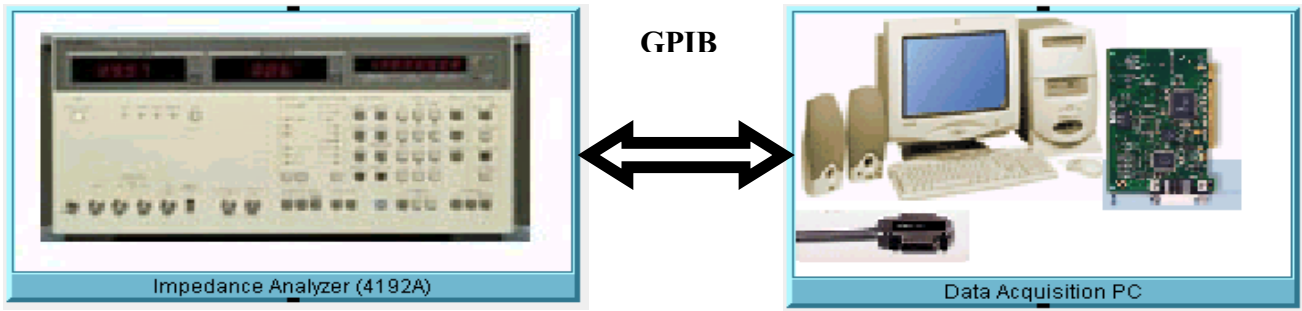
Software for Data Acquisition and Report Generation. The Software will have the following features.

1.2.1 Data Acquisition Module

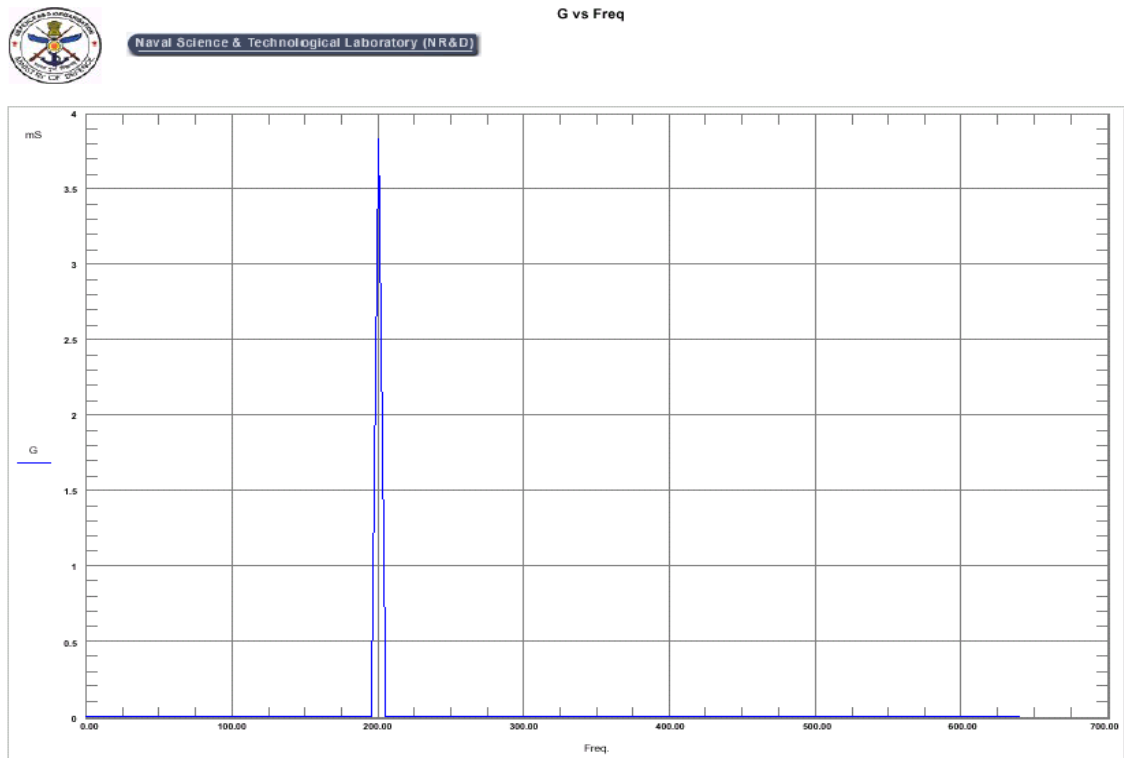
- a. Self Test.
- b. Calibration.
- c. Soft Panel for Accessing Instrument functions
- d. Menu for performing $|Z|$, $|Y|$, **phase**, **R**, **X**, **G**, **B**, **L**, **C**, **D**, **Q** Measurements with option to select multiple measurements for sequential execution
- e. On Line Display of $|Z|$, $|Y|$, **phase**, **R**, **X**, **G**, **B**, **L**, **C**, **D**, **Q** Vs Freq Plot.
- f. Save Measurement Data to EXCEL compatible files.

1.2.2 Report Generation Module

- a. Generate **G** Vs Freq, **Z** Vs Freq, **B** Vs Freq, **R** Vs Freq, **X** Vs Freq, **Y** Vs Freq, and **G** Vs **B** Plots from Data files.
- b. Overlay Plots (for Air and water Medium).



Automatic Impedance Measurement System Block Diagram

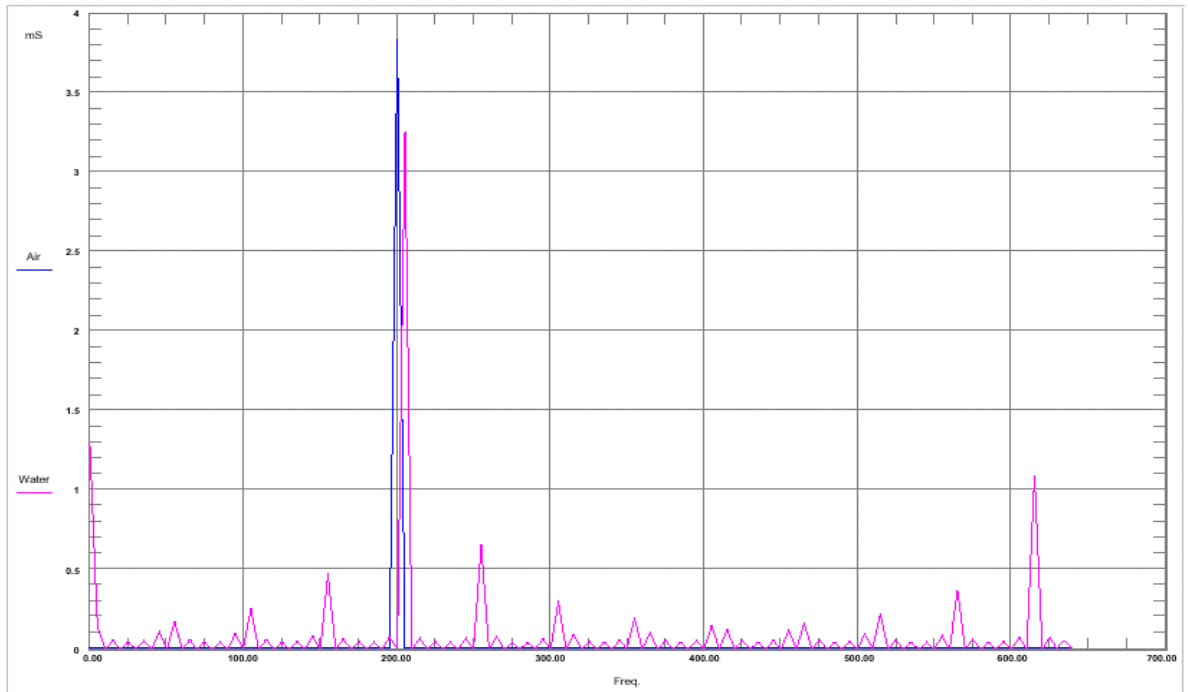


Sample G Vs Freq Plot (Simulated Data)



Naval Science & Technological Laboratory (NR&D)

G vs Freq



Sample G Vs Freq Plot Overlay (Simulated Data)