



# Instrumentation and Signal Processing

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## Project Objective and Intern Contribution:

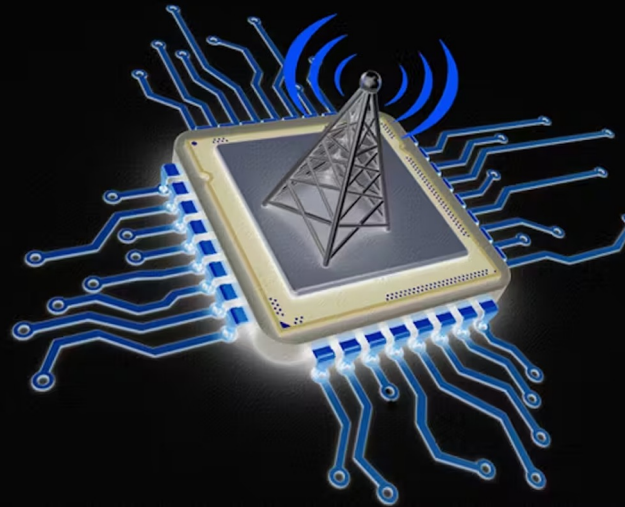
This summer our aim was to maximize the reliability and confidence level of the antenna test set up and environment for the official test plans in October to provide accurate results.

The method used to accomplish this aim was by fabricating and using reference antennas with varying resonant frequencies. The Reference antennas were used for the prototype test procedures to determine the validity of the data from the test plans, and compared them to the known values, in different environments.

We were assigned to various tasks including performing the prototype efficiency test at the small anechoic chamber, as well as being involved in setting up instruments and providing support for the modulation and noise figure test. We also tested the GTEM cell and confirmed it for linearity and reciprocity.



Gigahertz Transverse Electromagnetic (GTEM) chamber



## 1. What are you most proud of this summer and Why was the internship valuable?

We are proud to join the NAVAIR AID group and learn about instruments and signal processing. It was truly delightful to join such a talented group of engineers. We had to opportunity to challenge project constrains, learn from experience, and contribute to a meaningful initiatives.

## 2. Advice for future cohorts?

It takes time to adjust to the project and might take you weeks to understand the overall goal of your project. It is okay to be slow just be ready ask question and communicate with your team lead. Not only your team lead, but everyone in your team is eager to assist you for your success and growth during the internship.

## Results / Accomplishments / Next Steps

In order to show reliable and accurate data is obtained from traditional antenna tests, various validation methods have been used in both test setups and environments.

The impact this has on the Navy is to put into further practice to test antennas for clients from outside the DoD, as well as to introduce and test the GTEM chamber, which is a new device testing environment which will be a more facilitated and cost effective environment for testing.

Upon verifying the reliability of testing plans, official antenna test procedures will take place in October at various anechoic chambers, and the GTEM cell. In the future with further advancement and ensured reliability of the GTEM cell, bigger GTEMs will be purchased and used for different testing purposes.



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