

# MIL-STD-1553 Differential Data Bus Testing Suite

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## The Problem

The differential data bus on avionics equipment must be subjected to a rigorous testing procedure outlined by the MIL-STD-1553 handbook. Very few options can perform all the tests that are required.

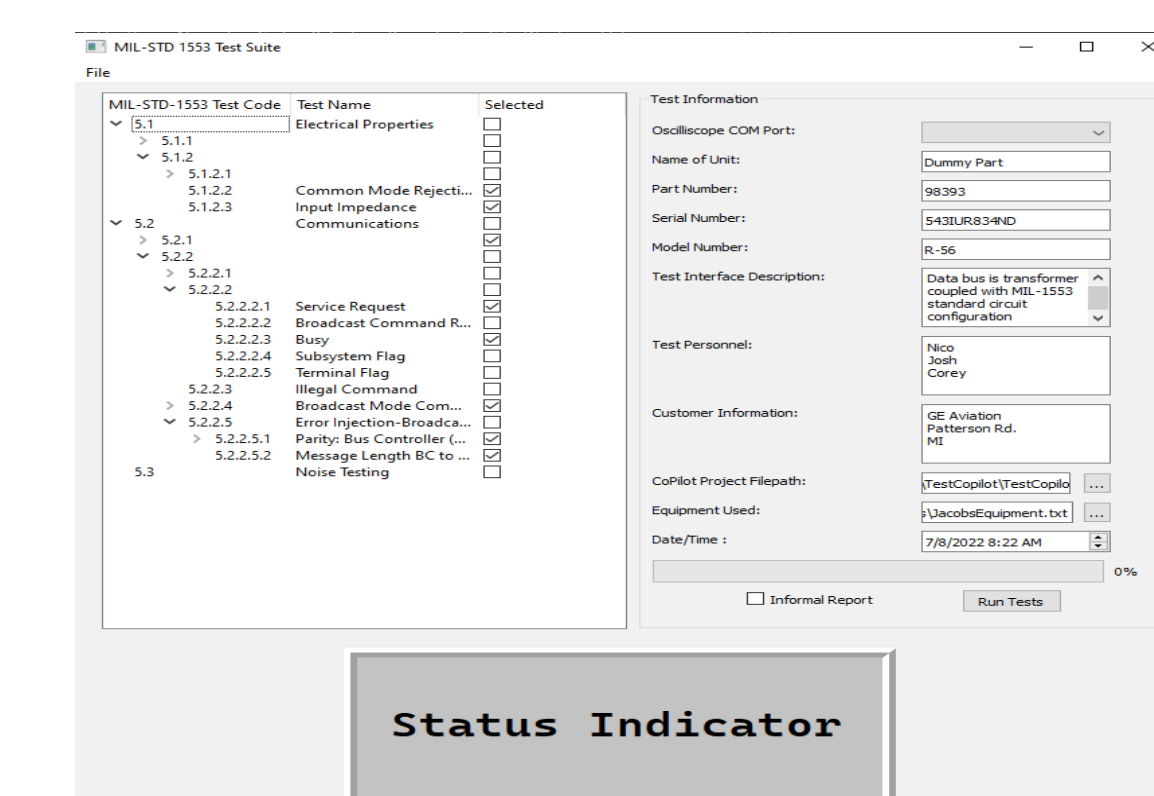
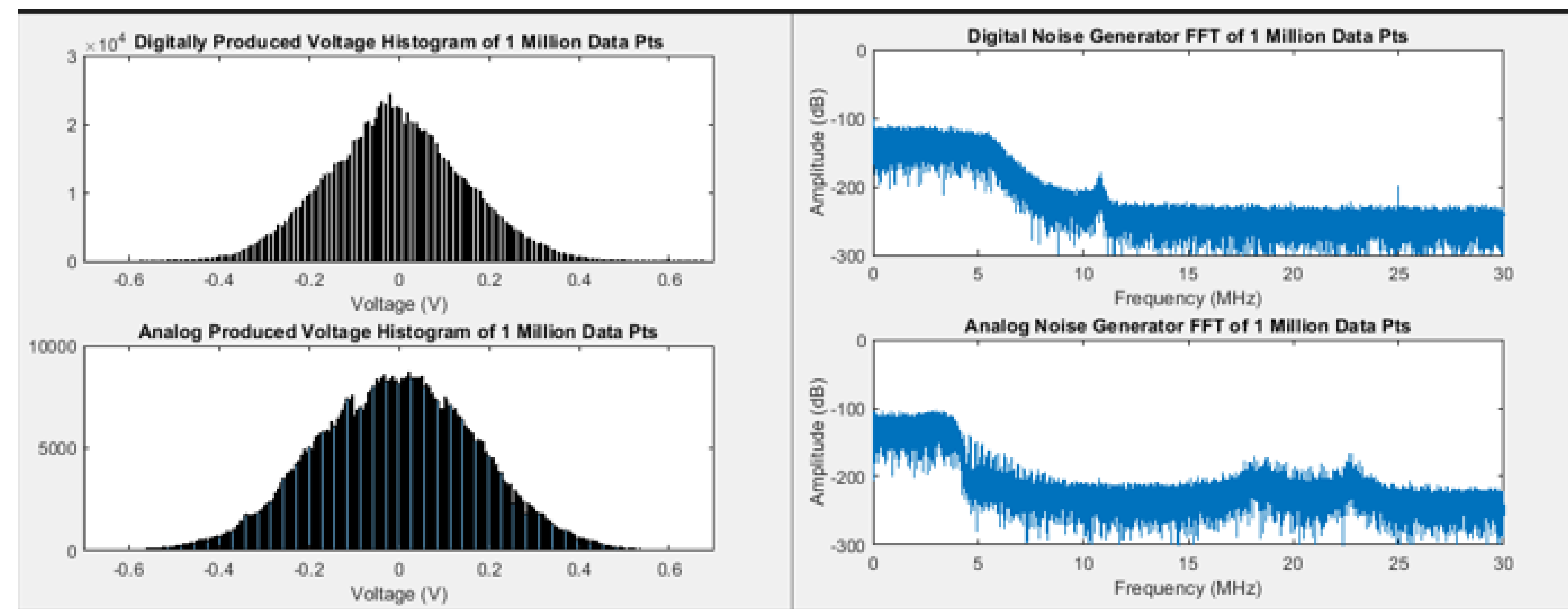


## The Hardware

A digital white noise generator was created using a digital to analog convertor (DAC), and a custom PCB was created to accomplish the electrical tests outlined in the MIL-STD-1553 handbook. An oscilloscope, function generator, and portable cart were also included.

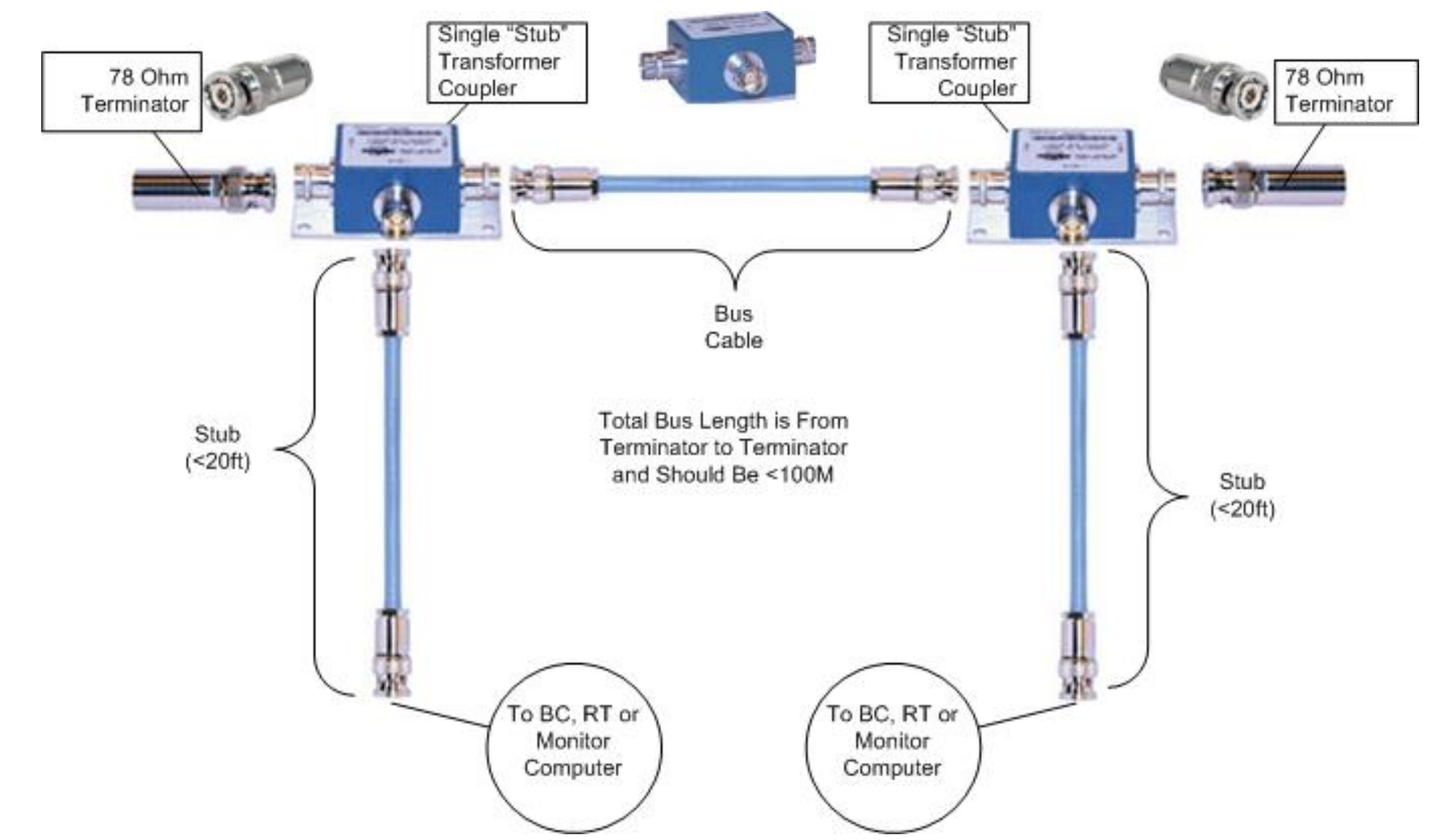
## The Requirements

To provide the ability to perform all these tests in a user-friendly test suite, including providing custom made hardware and software.



## The Software

A GUI (graphical user interface) was created for user test control in python, all results are printed to a report using python, test failures are captured by a python oscilloscope capturing script, and the noise generation logic was written in VHDL.



## The Build

The GUI, report script, oscilloscope capturing script, and testing scripts were written in python. The noise generator logic was written in VHDL. The PCB was designed in Altium.

