

Indiana University – Purdue University Fort Wayne
Opus: Research & Creativity at IPFW

Computer and Electrical Engineering Technology &
Information Systems and Technology Senior Design
Projects

School of Engineering, Technology and Computer
Science Design Projects

12-6-1993

A Jet Engine Fan Speed Controller

Ray Burniston Jr

Indiana University - Purdue University Fort Wayne

Follow this and additional works at: http://opus.ipfw.edu/etcs_seniorproj



Part of the [Computer Sciences Commons](#), and the [Engineering Commons](#)

Opus Citation

Ray Burniston Jr (1993). A Jet Engine Fan Speed Controller.
http://opus.ipfw.edu/etcs_seniorproj/693

This Senior Design Project is brought to you for free and open access by the School of Engineering, Technology and Computer Science Design Projects at Opus: Research & Creativity at IPFW. It has been accepted for inclusion in Computer and Electrical Engineering Technology & Information Systems and Technology Senior Design Projects by an authorized administrator of Opus: Research & Creativity at IPFW. For more information, please contact admin@lib.ipfw.edu.

SENIOR DESIGN REPORT ON A JET ENGINE FAN SPEED CONTROLLER

Prepared for: Professor Hal Broberg

Prepared by: Ray Burniston Jr.

Date: December 6, 1993

TABLE OF CONTENTS

1	Design Solution
2	Interpretation of the Requirement
3	Conversion of the Requirement
3	Input Requirement to the Circuit
4	Output Requirement from the Circuit
6	Development of the Circuit Topography
8	Defining Component Values
9	Analysis of the Circuit Design
9	Developing an Operational Amplifier Model in SPICE
11	Using SPICE to Simulate the Circuit
11	Using SPICE to Perform a Worst-Case Analysis of the Circuit
12	Breadboarding the Circuit
13	Preparing a Package for Product Design
13	Developing, Performing, and Reporting on the Design Assurance Test
14	Appendix A - Senior Design Project Proposal
18	Appendix B - Simulating the Circuit with SPICE
25	Appendix C - Worst-Case Analysis Results