# UNIVERSITY COLLEGE SEDAYA INTERNATIONAL

FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY

SCHOOL OF ENGINEERING

FINAL YEAR ENGINEERING PROJECT

## PROJECT FINAL REPORT

Project title : **DESIGN AND IMPLEMENTATION OF LOW NOISE HIGH PERFORMANCE AMPLIFIER**

Name : RAVINDRAN A/L GANESAN

Student ID : 99308942

First supervisor : MR. FAWWAZ

Second supervisor : MR. RODNEY TAN

Project coordinator: DR. KHEDR M. M. ABO HASSAN

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## ABSTRACT

This is a final report of a project entitled The Design and Implementation of Low-Noise High Performance Amplifier. The report is prepared to provide a good operating explanation of power amplifier devices in general uses today, impart knowledge of power electronic semiconductor and materials using these devices and finally to come out with a design of a Low-Noise High Performance Amplifier.

The use of Bipolar Junction Transistor (BJT), Operational Amplifier (Op-Amp), Pulse Width Modulator (PWM) TL494, switching transformer and few other materials have been much influence the success of this project. These semiconductor and materials have fast switching, low noise and many other capabilities which are very suitable in designing a Low-Noise High Performance Amplifier.

After discussing the device operation, characteristics and parameters, the operation of the circuits is explained, and then circuit design and analysis are treated. Practical design and analysis are included in the report, using the device parameters derived from manufacturer's datasheets. Waveforms, diagrams and most equations are derived so that the reader will know exactly what is going on at all times. Instead of rigorous analysis methods, practical approximations are employed whenever possible.