

HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING COURSE

DIPLOMA PROJECT

**SINGLE PHASE VARIABLE
FREQUENCY INVERTER 500W**

E.1259

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ABSTRACT

This project deals with the design and construction of a single phase variable frequency inverter using power Transistor.

The requirements of this project are:

(1) **Power Circuit:** Design a two-leg center tap transformer inverter circuit using the IGBTs transistors.

(2) **Control Circuit:** Use the LM3524D or similar to produce the necessary control pulses. Pulse width is controlled via a potentiometer. A simple pulse per half-cycle is sufficient.

(3) **Filter:** Suggest appropriate type of filter.

(4) **Harmonics:** Present a mathematical analysis for the harmonic content of voltages and currents. Suggest methods to minimize the harmonic content.

The constructed power Inverter was tested with various types of loads and found to be working successfully.

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