

HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DC TO DC CONVERTERS

EXPERIMENTS AND ANALYSIS

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**The department of Electrical Engineering
of the Higher Technical Institute**

DC TO DC CONVERTERS

Experiments and Analysis

CREATED BY

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In partial satisfaction of the award of diploma of

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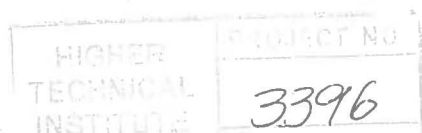


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INTRODUCTION:

The dc-dc converters are widely used in regulated switch-mode dc power supplies and in dc motor drive applications.

Looking ahead to the application of these converters, we find that these Converters are very often used with an electrical isolation transformer in The switch-mode dc power supplies and almost always without an isolation transformer in case of dc motor drives. Therefore, to discuss these circuits in a generic manner, only the non-isolated converters are considered in this chapter, since the electrical isolation is an added modification.

The following dc-converters are discussed:

1. Step-down (buck) converter
2. Step-up (boost) converter
3. Step-down/step-up (buck-boost) converter
4. Cuk converter
5. Full-bridge converter

Of these five converters, only the step-down and the step-up are the basic converter topologies. Both the buck - boost and the Cuk converters are combinations of the two basic topologies. The full-bridge converter is derived from the step-down converter.

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