HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

ANALYSIS OF SWITCHING CONVERTERS

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Analysis of Switching Converters

Summary

This study will baseline a number of three Phase Electronics circuits and a new converter known as Matrix Converter by using the Switching Function Technique.

Switching Function Technique is a rather new method for analysis of Power Electronics circuits. The only reference in order to study and understand this new technique it was 2002-2003 3rd year class notes in Power Electronics of Dr Christos Marouchos, and AC to DC project by Andrea Poullaides.

The Switching Function is a signal consisting of a train of positive or positive and negative pulses together as in full wave rectifiers. These pulses have unity magnitude and period T. In order to find the output voltage the switching function it has to be multiplied with the input voltage, and in order to find the input current the switching function it has to be multiplied with the output current.

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