

COMPUTER SIMULATION OF THE HARMONIC
AND REACTIVE POWER COMPENSATOR.

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ABSTRACT

The overall aim of this project was to use the package known as Visula to simulate the hardware namely a Harmonic and Reactive Power Compensator. The hardware part was built by Mr. Mohd. Zaki Abdullah (Project Advisor) during his Master Degree project. By using Visula, the analysis can be done easily. Besides, the package also offered the variety of advantages in designing, constructing and analyzing the electronic circuits.

This report is based on the simulation of the current control loop of the compensator.

Chapter one introduces the Visula package. Its consist the basic concepts and processes that should be taken to do the simulation.

Chapter two gives a general concept of the harmonics. The explanation would give some ideas to the readers what is the harmonic is all about.

Chapter three explains the Harmonic and Reactive Power Compensator, MOSFET H-Bridge and components that were used to built the compensator.

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1.0 INTRODUCTION TO VISULA.

Visula is a fully-intergrated design environment. Its provides the frame work to accommodate all the applications required to progress an electronic product from its initial conception through design, simulation, verification, layout manufacture and test.

Redac's application provide an effective engineering, design and manufacturing solution. In addition, design data can be accepted from the other design systems, and exported to design and manufacturing systems through the interfaces provided by Visula. The users are therefore free to build his/her own system solutions to meet individual needs. While complex systems can be built up, Visula provides a strong element of control over working data through its Central Database.

The Central Database contains standard information, including a library of parts definition. Parts numbers and device characteristics can be used to select