IMPLIMENTATION OF SINGLE-PHASE MATRIX CONVERTER AS INVERTER CONTROLLED USING PIC

This thesis is presented in partial fulfillment for the award of the Bachelor of Electrical Engineering (Honours)

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ABSTRACT

A new method of matrix converter using PIC technique is presented. The controller is developed by Programmable Interface Controller (PIC) in this system. This system covers by IGBTs based system. One of the converter topology is inverter application. Inverters is main application to produce output in AC when an input in DC Supply. The most important element of SPMC is the switching strategy for the four-quadrant switches. The switching strategy will result in the input source being converted to the desired output through the SPMC. SPWM is used as the switching technique for the four-quadrant switches. The switching technique will result in the selective four-quadrant switches ON and OFF only at appropriate time. Applying the switching strategy and the switching technique to the controller will produce the desired output that is synthesized from the input source of the SPMC. The laboratory model of the converter is developed and tested. The experimental result is presented.

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