**APPROVAL SHEET**

The special project attached hereto, entitled “Smart Energy Monitoring and Control System for Residential Application” prepared and submitted by **Karl Martin A. Aldueso**, **John Mark V. Batabat**, **Eli Joshua T. Maravillas**, and **Gil Michael E. Regalado** in partial fulfillment for the degree of BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING, is hereby recommended for approval:

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Date Date

**ENGR. MARVEN E. JABIAN**

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This thesis is accepted and approved in partial fulfillment of the requirements for the Degree of Bachelor of Science in Electrical Engineering.

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**ABSTRACT**

This paper evaluates the importance of improving the traditional method of electrical energy consumption data acquisition by creating a system composed of several devices that monitors energy consumption in Kilowatt-hour (single-phase) in digital. The system is composed of a data acquisition unit, a wireless communication network and a user interface. The data acquisition unit is driven by a microcontroller that is interfaced to an integrated chip capable of acquiring power consumption. The data gathered from different nodes is logged to the central database through wireless transmission. The central server automatically generates the assessment of the consumer’s bill and transmits them through Global System for Mobile (GSM). Through the internet, the user is able to access the monthly bill in reference with their power consumption. Several tests were done to evaluate the accuracy of the system’s power meter in reference to the ones available in the market. The result from the tests conducted was able to comply with the acceptable percentage error range of 0 to 5 percent.

**Dedicated to all the people who enjoy dealing with complexity**

**rather than simplicity**

**and**

**to our ever loving Almighty Father.**