

**DESIGN AND DEVELOPMENT OF A VIDEO INTERCOM  
FOR SAN JOSE BALAY ALIMA FOUNDATION INC.**

**Design Project**

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**DESIGN AND DEVELOPMENT OF A VIDEO INTERCOM  
FOR SAN JOSE BALAY ALIMA FOUNDATION INC.**

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## ABSTRACT

**CEE, MARK KEVIN PAUL B., and DIZON, DARYL JED M. Design and Development of a Video Intercom for San Jose Balay Alima Foundation Inc.** Project Design. Bachelor of Science in Electronics and Communications Engineering. Cavite State University, Indang, Cavite. March 2013. Adviser: Engr. Michael T. Costa.

The Design and Development of a Video Intercom for San Jose Balay Alima Foundation, Inc. was conducted at San Jose Balay Alima Foundation Inc., Brgy. Carasuchi, Indang, Cavite from July 2012 to February 2013. The main objective of the design project was to design and develop a Video Intercom System for the San Jose Balay Alima Foundation, Inc. Specifically, it aimed to develop an intercom unit that can transmit and receive audio and video information through a wired interconnection, create a program to control the system, interface the video display to the main intercom unit, incorporate monitoring capabilities to the intercom system, install the constructed video intercom in the institution and to test and evaluate the performance and user acceptability of the intercom system through pilot testing, and conduct a power analysis and cost computation for the system. The study is conducted for it will provide a means of communication between the visitors, personnel, and elders at the different locations in the institution.

The designed project was composed of software and hardware components. The hardware was consisted of the main intercom unit interfaced to a video display and connected to a video recorder and the video intercom units installed at the gate, future quarters of the elders, office, and kitchen. Assembly language was used to develop the software that controls the whole system. The video intercom units, located at the different

places in the institution, are capable of calling the main unit and the main unit is capable of answering the calls of the video intercom units. The main unit is also capable of monitoring the places where the video intercom units were installed. The designed project was installed and evaluated at the San Jose Balay Alima Foundation, Inc. Two set of evaluation were done, one is from the visitors and the other is from the personnel of the institution. During the evaluation, the visitors and personnel rated the video intercom system according to its performance and user acceptability. The intercom system was also evaluated statistically through descriptive analysis.

As the video intercom units were installed at the San Jose Balay Alima Foundation Inc., the system was able to transmit and receive audio and video information through wired interconnection. The performance of the system was evaluated to attain user acceptance. The power consumption cost of the video intercom device was found to be PhP 0.61 for one day, PhP 18.16 for one month, and PhP 217.95 for one year which implies that the system has low power consumption. The study could be improved by using other microcontroller that could accommodate additional intercom units and enhancing the mobility of the cameras to optimize its operation in monitoring. The total cost of the study is PhP 23,862.25.

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# **DESIGN AND DEVELOPMENT OF A VIDEO INTERCOM FOR SAN JOSE BALAY ALIMA FOUNDATION INC.**

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A project design manuscript submitted to the faculty of the Department of Computer and Electronics Engineering, College of Engineering and Information Technology, Cavite State University, Indang, Cavite in partial fulfilment of the requirements for graduation with the degree of Bachelor of Science in Electronics and Communications Engineering with Contribution No. \_\_\_\_\_. Prepared under the supervision of Engr. Michael T. Costa.

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## **INTRODUCTION**

The San Jose Balay Alima Foundation Inc. is a privately owned facility that takes care of the less fortunate, especially the elderly. Even though it is classified as a private institution, sustaining the needs of the orphans rely mostly from the donations sent by concerned citizens. This is one of the reasons why the San Jose Balay Alima is constantly visited by individuals with the purpose of helping out the institution. Many guests use the doorbell installed at the gate and the alerting sound produced by the doorbell is only heard at the office where the persons-in-charge are not always staying. Consequently, the personnel could not respond quickly to the visitor waiting at the gate, therefore, there is a need for a communication system between the gate and the places where the personnel are staying. Also, the elders at their quarters could not call the attention of the personnel in case of urgent situations.