

ABSTRACT

Home automation and security systems are systems that integrate and control home electrical equipment. Home automation and security systems usually consist of sensors, controllers and actuators. A home automation and security system controller usually operate statically which means that the controller must be reprogrammed if a sensor or actuator is added. In the history of development, the home automation system has experienced growth due to the increasing needs of homes. With so many electronic devices that can support automation systems, many systems are also able to be combined with other systems. For this reason, hardware is needed in the form of a control board capable of integrating with other systems. The features offered in the manufacture of the control board module itself represent the function of the home automation system so that the function of the home automation system can be optimized properly according to user needs.

In this study, a control board module was created that supports several automation system functions. This control board functions as a control center for several modules to become a home automation system. Then the number of inputs and outputs is tailored to the needs of the user. The device is configured in advance using the application, after being configured the device can be monitored using a mobile or desktop application.

The results of this test are the system can work by connecting the relay as an output module, and the main board of the microcontroller is supplied with a power module. The system can run by turning lights on and off and monitoring temperature and humidity.

Keyword: microcontroller, STM32, board controller, home automation