

## **ABSTRACT**

Programmable Logic Controller (PLC) is an electronic circuit that can do a variety of control functions at the level of the complex as a substitute for multitudes of mechanical relays are used in control systems. Input from the PLC will read the status of a given and then used in the conversion of status output. While the form and amount of changes that occur in the PLC output, depending on the program given by the user in the form of ladder diagrams.

PLC based on monitoring system STM32 Microcontroller will use Bluetooth module as a medium of communication. This can allow a user to monitor the PLC because it can be used at any distance and without using cables. The systems will be designed based STM32F103RET6 Microcontrollers, using C as the programming language, using Visual Basic to design interfaces and use the Bluetooth module as a medium of communication. Bluetooth hardware will change the frequency of the signal into TTL voltage.

The system is implemented in the final project has been able to work well. Bluetooth has the capability class 2 with an effective range of 14 meters and can be used in a range of 38-40 meter range. Has a low electrical current consumption of 0.0064 amperes. From the test results it has Bluetooth communication delay 0,131 – 0,362 second. Can be packaged in a metal chassis and placed on the affected electrical induction.

Keywords : Programmable Logic Controller, PLC, Bluetooth, STM32 Microcontroller