

ABSTRACT

AC (Air Conditioner) is a device that can cool and warm the air. Indonesia as a tropical country uses AC as air conditioner. It has become mandatory for buildings, offices, or homes to have air conditioning, even in rural areas, many have used air conditioning. Therefore, air conditioning is one of the causes of wasting electrical energy throughout the world, due to inefficient use with low temperature settings.

In a government regulation issued by the Minister of Energy and Mineral Resources no. 13 of 2012 concerning saving electricity consumption, it is necessary to be more efficient in the use of electrical energy without compromising safety, comfort, and productivity. In order to save electrical energy, we need a device that can control the temperature automatically so that it can control the performance of the AC.

The design of the tool is an AC remote control with LoRa module, in this tool there is an AC temperature control system automatically according to the indoor and outdoor temperature values using Sugeno's Fuzzy Logic control. This tool is equipped with IoT devices using the LoRa network, the function of LoRa as a data receiver from an outdoor temperature reading device and also as a data sender into the Antares Platform through the nearest LoRa gateway. The results of this final project test can save AC electrical energy consumption of 23.79 kWh or 41.28% for 57 hours of testing.

Keywords: *Air Conditioner, Remote Control, LoRa, Fuzzy Logic Sugeno, Energy Saving.*