

## ***ABSTRACT***

Radio research in this project was useful in a final success. In order to carry out one-way or two-way communication within a residential area, two stages of work must be carried out, namely researching radio performance (receiver) and researching radio transmitter (transmitter). Researching the performance of this radio is made to transmit the sound of announcements via a transmitter so that it can be channeled to the radio of every citizen around the settlement.

The creation of communication services around this settlement is to make it easier for a village to convey information/announcements from the RT/RW. Due to the difficulty of hearing the call to prayer or the announcement of RT/RW which is only available at one point, this project will greatly help people who are far from the voting point in order to get information from the voice point. The purpose of this final project is to be able to simulate the device using arduino and mp3 with predetermined conditions and observe the results of the performance analysis of the radio system simulation using arduino and mp3 under all conditions and parameters that have been determined. mp3.

The workings of this system begin with sending sound that is captured from the microphone and sent via a radio transmitter to a radio receiver using Arduino with the help of the FM Stereo module and the Power Amplifier module. How to analyze radio waves is done by testing distance measurements (meters) so as to get maximum and minimum results and the results of the analysis there are 2 variations of radio distance testing ranging from 1 meter to 10 meters, namely performance testing detected and 11 meters to 20 meters testing the error distance as well as the transmission of the sender and receiver has no delay

**Keywords:** Arduino, Transmitter, Receiver, FM Stereo Module, Power Amplifier Module