

ABSTRACT

Arduino board has been widely used as a prototyping device for use in education, research, or commercial purposes. Arduino board's ability to be connected with electronic devices or gadgets such as Android OSed devices gain more attention among researchers. By taking advantage of the capabilities of most Android OSed devices on the market today, the Arduino board will certainly have an extraordinary intelligence.

Some of the methods used for Android device to communicate with the Arduino is via bluetooth shield, Wi-Fi shield, and also via serial communication. The idea was to use serial communications capabilities ATmega328 microcontroller on the Arduino board. Serial data sent from the Android device is transmitted through the audio jack cable then to be connected to the Rx port on the Arduino board.

In this Final Project will be designed and realized serial communication between Arduino and Android platform via the audio channel with the text input with the aim that Android can transmit text data through the audio channel with the audio cable. On data rates testing that is utilizing the Arduino serial monitor, we found that the optimum speed is 19200bps. The maximum speed is 38400bps which can still be used for uniform serial data communication with less than 10% error rates. Moreover the maximum speed can not be used for varied data because of more than 30% data error. The data are not readable at the speed of 14400bps, 28800bps, the speed below 300bps and the speed above 57600bps.

Keywords: Arduino Board, Android, Serial Communication, Audio Channel, Text Input