

## ABSTRACT

Baby Incubator is a sealed container that warmth can be regulated by heating the air to a certain temperature which serves to warm the baby. According to data from the statistics of measurement and calibration are performed by BPFK Surabaya in 2006-2007, there was a tendency of matter at temperatures and Over Heat on the mat. To resolve the issue it needs to make a monitoring system of air temperature on the tube baby incubator. This system can utilize the wifi network in a process of sending information regarding the condition of the incubator temperature and temperature conditions in babies.

In a modification system, we created a baby incubator in which there is a controller box that is divided into two parts (top and bottom). Top box is used to put the sensor and the sensor displays. While at the bottom of the box used to put electronic circuits, heater and fan. The temperature sensor used is a temperature sensor (SHT-11), while the temperature sensor for baby is used a sensor NTC. Monitoring processes used by the wireless system utilizing wifi network connected to an existing android device side nurse, so if there is a change in temperature, the system will send information on the incubator through a wifi network to android devices. Infant incubator temperature changes and can be seen in the form of the temperature display on the device. In this wifi-based monitoring system can monitor the temperature without having to go to the incubator.

The results shown are monitoring temperature of incubator, temperature of baby and humidity of incubator. The results of temperature regulation is done by PWM method that uses duty cycle of 25%. In this incubator, temperature of incubator was set at a temperature of 32-34 ° C, in accordance with the needs of the room warmth in preterm infants generally. In the process of sending data from the incubator to the application has an average delay of 30.82 ms to 71 ms. While jitter on wifi transmission between 14.83 ms to 43.80 ms. Seeing the value of the delay and jitter as well, this system is feasible and can still be used. Hope in the future, this system can be very useful for nurses and hospitals, as well as the system can be developed again.

Key word : Baby Incubator, wifi, android, NTC,SHT-11, on-off, controller.