

## ABSTRACT

*Monitoring the condition of premature babies inside the baby incubator is very necessary. Babies who are born prematurely with a birth age of less than 38 weeks have a higher risk of death and difficulty to adapt outside the womb due to immaturity of the organ system. Premature babies need continuous monitoring by the nurse to find out the baby's body condition remains stable in temperature and humidity to match the conditions in the womb. The purpose of this research to develop a baby incubator temperature and humidity monitoring system quickly and practically. As technology develops, the monitoring process that was initially carried out by looking directly at the baby incubator display, now developed with various innovations that make it easier to monitor premature babies. The baby incubator temperature and humidity monitoring center module via the WiFi network uses a temperature sensor and DHT 22 which will be sent via WiFi ESP 32 and the values obtained will be displayed on the nextion tft display. Based on the measurement results obtained the largest temperature error value of 2.083% at the incubator client 1 temperature at the measurement point 32 ° C. At the measurement of 33 ° C, the biggest temperature error is 0.909% at the incubator client temperature 1. At the measurement of 34 ° C, the biggest temperature error is 1.127% at the client incubator temperature 2. At the measurement of 35 ° C, the largest temperature error is 0.333% at the incubator client temperatures 1 & 3 . At the measurement of 36 ° C, the biggest temperature error is 1.203% at the incubator client 4. At the 37 ° C measurement, the biggest temperature error is 1.082% at the client incubator temperature 4.*

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**Keywords:***Baby Incubator, Temperature, Humidity, Wireless*