

## **ABSTRACT**

Young children have high level of confidence to others. In the new circumstances, the adaptation of small children is higher than adults. Because of this, many cases of child abduction occur with a variety of way. But, many parents almost neglect when taking care their children, such as when parents are busy shopping then concern parents are no longer the focus to the child again. Based on these problems, we need a safe distance monitoring system between two people with RF wave emission, which is Very High Frequency (VHF). Function of this system is to give the alarm to the parents when the child is out of reach.

This final project consists of two modules, are parents module and children module. In the parent module, there is a wave RF receiver, LED lights and buzzer sounds as the source of the warning system. In addition, the child module consists of transmitting RF and IC 555 as a producer of the signal transmitted by the child module to parent module. When the parents module receives information from the children module, LED on the parents modules will live, but the buzzer off. Meanwhile, LED are off when parent module can not capture information from the child module. At the this condition, buzzer will live as an alarm. Thus, the buzzer will give a warning to parents about the child's position. Buzzer will live when the distance between parents and child module have a separate away or the condition parents module is on but the child module is off.

After the end of the project is done, the children module distance range affected by the transmit module power supply which is used. The maximum distance permitted between children modules with a parent module is 15 meters if using a ABC 9 volt battery in children module power supply; 44 meters with a Li-Po batteries 9 Volt, and 12 meters when the child module using a 9 volt adapter. For indoor and portable applications, this system will show the best work when the child module using ABC battery 9 Volt as a power supply. 15 meters is the longest distance the parents can keep an eye on children. The child module has operating frequency around 100 – 113,6 MHz. Child module can transmit information if given the power supply at least 2.66 volts. Meanwhile, parents module can work when it gets a minimum power of 4.27 Volt.

Key words: safe distance monitoring, RF waves, LED, buzzer