

# Project Proposal

Alternative Transmit on Z8

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## Project Abstract

This project is going to implement the data transmit between the cell phone (java supported) and Z8 microcontroller via alternative approach of Bluetooth or IrDA. Based on the Z8 microcontroller, the program can send the txt file via Bluetooth or IrDA from cell phone to the Z8, and then the content of the file will be showed by the LED arrays. On the other hand, the temperature information detected by the sensor will be sent to the cell phone via Bluetooth or IrDA. The application on the cell phone will show the temperature information then. In this project, the program on Z8 will be in charge of the temperature sensing, txt file display and Bluetooth and IrDA module controlling.

## Strategy

Platform:

- Z8 Encore Microcontroller
- Nokia Symbian Platform

Capabilities:

- Z8: Analog input, led display, gpio, interrupt
- Symbian OS: J2ME application

Extra modules:

- Z8: Bluetooth module, temperature sensor, IrDA module

Evaluations:

The Z8 platform supports the Bluetooth and IrDA module working on that. The extra temperature sensor can detect the temperature information, and then, via the extra infrared transceiver or Bluetooth module, the information can be sent to the cell phone. The extra modules are also used to receive the text file from cell phone.

The Nokia Symbian operation system has a powerful compatibility with the Java programs that is needed in this project to receive the information from the IrDA. In this project, we will experiment on the Nokia N93i (S60 platform) first. Then the program will be installed on Nokia 6300 (S40 platform) to examine the compatibility of the J2ME program.

## Unknown

How to implement the Bluetooth connection on Z8;

How to implement the IrDA connection on Z8;

How to detect the signal from both of these two modules;

How to send and receive the file or data on Z8;

How to implement the expecting functions on cell phone.

## Implementation plan

The program on Z8 platform will have a main loop to detect the signal from IrDA and Bluetooth. When there is a request from any of them, the other port will be disabled until the transmit finishes. Then the information will be parsed and displayed by the led array. The switch 1 (PD3) on the Z8 will be used to start the receiving from the alternative module. The switch 2 and 3 (PF 6 & 7) will be used to send the temperature information to the cell phone via Bluetooth and IrDA respectively. When any of these switches is pressed, the sensor will collect the temperature and prepare the information.

The Java program on Symbian platform is supposed to detect the Bluetooth or IrDA requests when there is no sending task. When it receives the data from the Z8 platform, it can show the temperature information.

