Project overview
Since every existing technology on the short term communication like WIFI, Bluetooth has its weaknesses in areas like coverage, power consumption, while ZigBee, this new found technology, can improve these situations, so we decided to design a new wireless communication header by applying the ZigBee technology.

We try to improve the current design of the similar product by adding new functions and trimming the design of the circuit. The expected outcome is a new model of ZigBee header with more functions.

We hope that the final product we make can really provide people with a better experience of using wireless short term communication devices. People would be happy not only because we do better in the areas like coverage, power consumption, but also our product can provide them with a more private, convenient and friendly communication environment.

As our project is sponsored by Sangzui Ltd., the idea of the PVP is based on the design of an existing communication set of that company. What we are doing in this project is not directly copying the existing thing, but improving and extending the work of the basic communication deployed by the company.

Methodology
Following is the Specification and Block Diagram of our design:

Results
- In respect of hardware —— Trimmed the design of the circuit:
  As a pursuit of better transmitting performance, lower interference of signals and a smaller size of layout, we design our own main board. We believe our design is successful as it can not only function as the original one, but also do better as some added features like charging circuit can add value to the board, make it more flexible to fit different need of users.
  For the aspect of reducing noise, as the prototype we tested is still using “yellow board”, which the material itself will draw bad effect on the process of signal transmitting and make noise. So in our final product we would use “green board”, for which it would be sophisticated enough for us to test the board’s preference on noise reduction.

- In respect of software —— Adding new functions:
  For the software part, the fundamental procedures that will enable the main board to function according to the input of the user and we expect that it also detect, receive and send wireless signal to other sets of devices.

- In respect of whole system:
  - Basic communication functions among at most three parties.