1. Introduction

Almost all children long to have wings to fly in the sky, like butterflies, dragonflies or birds. The original intention of this work "I Want to Fly" is just about the realization of the dream to fly. Children are dressed in the model of wings, and when they wave their arms, the beautiful scene of a cute cartoon character flying in the sky will be show in a large screen.
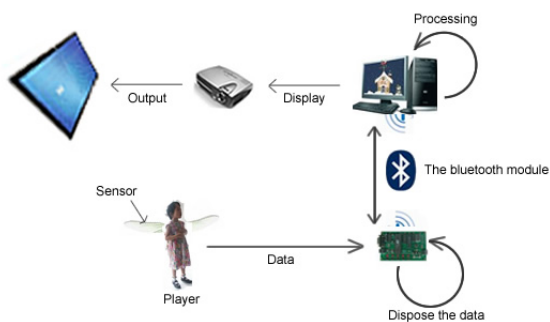
2. System description

Figure 1:system structure

A. Make a wing module. In the wing module, we fix two obliquity sensors which are used to reflect the movement of upper arms.

B. Design the part of sub device which is also installed in the wing module. It's used to collect and handle the information from obliquity sensors and send message to desktop PC.

C. The communication between sub device and PC is done via two serial blue tooth modules which can replace the serial line. The sub device part responds and sends messages to PC.

D. Developing tool VirTools is adopted in PC. It exhibits the beautiful landscape and cute cartoon character, and the cartoon character can be controlled to move upwards, downwards, leftwards or rightwards.

E. To achieve the best effect, we project the scene to a large screen.

3. Instructions for use

A. Make sure your arms, especially the upper arms, move vertically.

B. The upper arms movement must be restrained to 0-120 degrees (when your arms keep vertically, the angle is 0 degree).

C. According to the angle and velocity information of your arms, the smart module in the screen can be controlled to move upwards, downwards, leftwards or rightwards.

D. One suggestion: The time allowed is not more than two hours, in order to avoid some abnormity.

4. Object applicable

This work is mainly applicable to the children between the ages of 5 to 10.

5. System requirements

Hardware

- Desktop PC (CPU>2.0Ghz,RAM >1GB,one serial port at least)
- C51 Single Chip
- Two Blue Tooth modules
- Two Sensors

Software

- OS: Windows XP
- VIRTOOLS4.0
- Microsoft Visual Studio .NET 2003
- Keil uVision2.0
- Maya 6.0
- DirectX9.0c

6. Conclusion

We expect that "I Want to Fly" will give children a realistic situation, satisfy their longing to fly, and allow them time to fully enjoy themselves.