Laser Tag

Development Team:

Brian Cullinan

Travis Hudson

Richard Lester

Goal:

Implement a fully functional wireless communication protocol.

Take advantage of hardware in a current Laser tag system.

Implement communication between PC and components to keep track of scoring.

Overview:

Phase 1:

The first phase of the project will focus solely on implementing a form of wireless communication between devices. We have chosen to research and implement communication using some form of laser, and on the receiving end a photo-resistor and comparator analog-to-digital converter. Our wireless protocol will consist of a simple reference byte which will indicate the start of a message, and a message byte which will be read and recorded. There will be a 3-bit parity for each byte in order to filter out multiple signals being transferred at the same time. The wireless communication will be 1 way, it that it will not be a synchronous and the receiving end will not acknowledge receiving the data. However, in our laser tag system, each chip will both receive and send data.

Phase 2:

The second phase will be to modify an existing laser tag system and take advantage of its existing hardware. Some of the benefits that our system will have include custom sounds, hit penalties, and a score board. Our system will take advantage of different parts of the hard, the existing photo-resistors, the infrared lasers, and the deflectors to capturing a broader range of light.

Phase 3:

Finally, our last goal is to transmit the stats from the game to the computer, and use the computer to sync the guns and distribute unique IDs to be transmitted that can be lined up with who each player is.