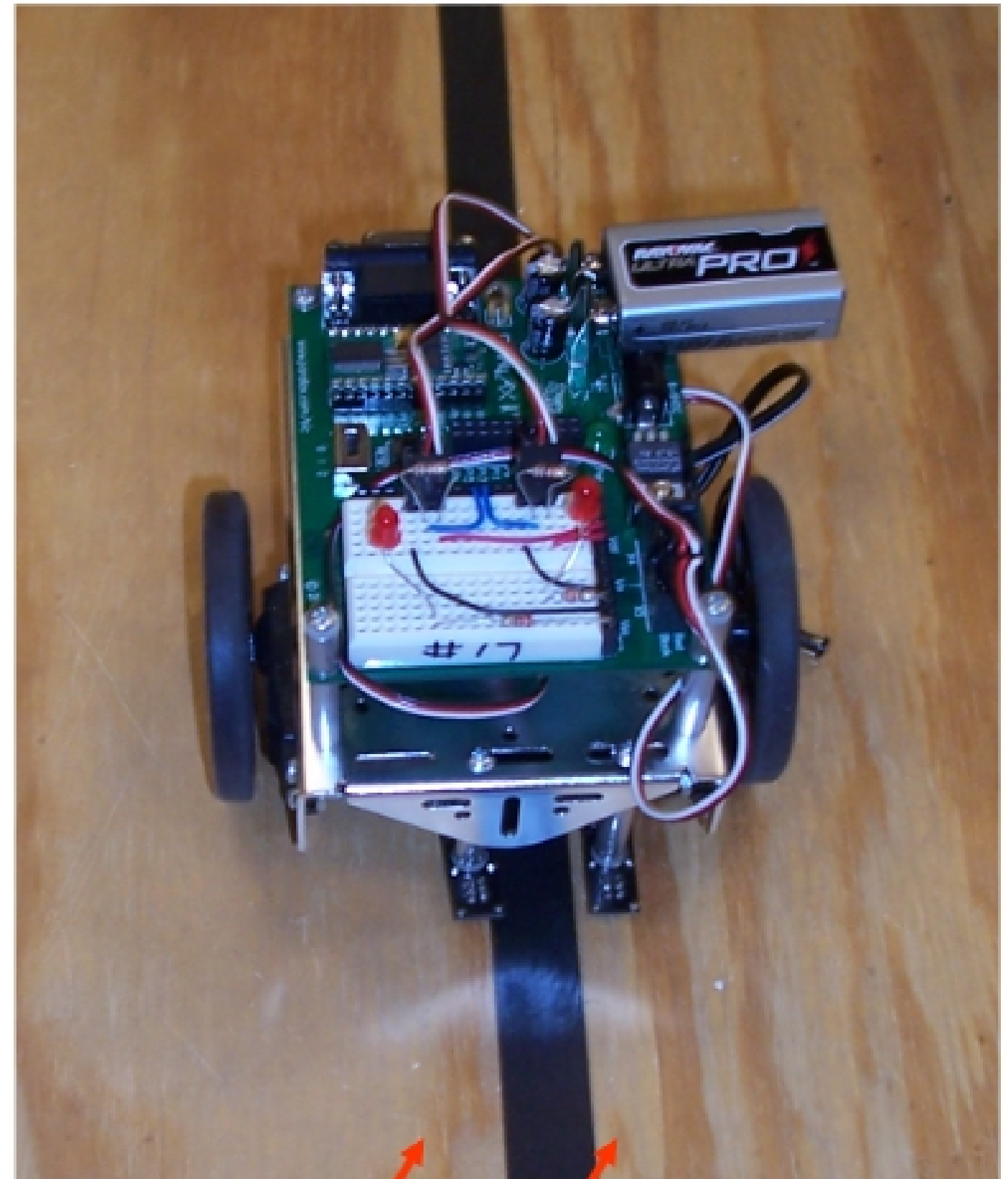


Navigating the BOE-BOT with infrared sensors

Reference:

For more complete documentation, the following items are available from www.parallax.com or www.tcc.edu/faculty/webpages/PGordy

- [Robotics with the BOEBOT Version 2.2](#)
- [BASIC Stamp Syntax and Reference Manual Version 2.1](#)



Infrared sensors

Infrared Navigation with the BOE-BOT (Line following)

The following is an excerpt from Robotics, Version 2.2:

“Today’s hottest products seem to have one thing in common: wireless communication. Personal organizers beam data into desktop computers, and wireless remotes let us channel surf. Many remote controls and PDA’s use signals in the **infrared** frequency range to communicate, below the visible light spectrum. With a few inexpensive and widely available parts, the BASIC Stamp can also receive and transmit infrared light signals.”

Infrared: Infra means below, so Infra-red is light (or electromagnetic radiation) that has lower frequency, or longer wavelength than red light. Table 7-1 shows the wavelengths for common colors along with the infrared spectrum. Our IR LED and detector work at 980 nm (nanometers) which is considered near infrared. Night-vision goggles and IR temperature sensing use far infrared wavelengths of 2000-10,000 nm, depending on the application. Table 7-1 shows the wavelengths for common colors along with the infrared spectrum.

Table 7-1: Colors and Approximate Wavelengths

| Color | Wavelength | Color | Wavelength |
|--------------|-------------------|---------------|-------------------|
| Violet | 400 | Red | 780 |
| Blue | 470 | Near infrared | 800-1000 |
| Green | 565 | Infrared | 1000-2000 |
| Yellow | 590 | Far infrared | 2000-10,000 |
| Orange | 630 | | |