

Lab Activity 7

Using Squarebot to Work with the Transmitter's Drive Option

Overview: The Vex transmitter allows the user to edit several of its functions. With experience, it is possible to greatly change the robot's behavior using the transmitter options alone. In this investigation, you will learn how to use the drive menu to enable new control modes.

Upon completion of this activity the student will be able to:

- Work within the transmitter options menu
- Use the transmitter menu to alter Squarebot's response to joystick control
- Enable "arcade style" joystick controls
- Discuss the pros and cons of both drive modes

Materials needed:

- Squarebot
- Radio control transmitter

7.0 Using the Drive Option

7.1

Looking back at the lesson on default transmitter settings (Lab Activity 1), what is the relationship between the number of the joystick channel and the number of the motor port that it controls?

7.2

Considering this relationship, is it possible to move two motors at once when only one joystick channel is being manipulated?

7.3

Enter the transmitter menu, and press Mode until the word DRIVE appears on the screen. You should see the number 23 flashing.



7.4

Press the Data Input button up to switch the number to 12. Notice that there are only two options in the drive menu. All of the previous exercises were done in mode 23.

7.5

The right motor should now be plugged into motor port 1, rather than motor port 3. If you do not make this change, Squarebot will not operate correctly.

7.6

Perform the following actions and write down the Squarebot's response.

- | | |
|---|-------|
| a. Push the right joystick up | _____ |
| b. Push the right joystick down | _____ |
| c. Push the right joystick to the right | _____ |
| d. Push the right joystick to the left | _____ |
| e. Push the left joystick up | _____ |
| f. Push the left joystick down | _____ |
| g. Push the left joystick to the right | _____ |
| h. Push the left joystick to the left | _____ |

7.7

Describe the difference between controlling Squarebot in the two Drive modes.

7.8

Which drive mode do you prefer?

7.9

How many motors are affected when only one of the axes on the right joystick is manipulated in Drive Mode 12?

7.10

How many motors were affected when only one of the axes on the right joystick was manipulated in Drive Mode 23?

7.11

Think of a situation where it would be beneficial for only one motor to be affected by each joystick axis.

7.12

Reset your transmitter settings when you are done experimenting.