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INTRUDER ALARM/"DAISY, DAISY"
Software Module
Version 2.0
By STAR, Inc.

The "Intruder Alarm/Daisy, Daisy" software module combines two different RB5X programs in a single module.

The "Daisy, Daisy" program allows RB5X to both sing the words to the song "Daisy, Daisy" ("On a Bicycle Built for Two") and play the tune in two different octaves.

The "Intruder Alarm" program allows RB5X to use its sonar system to detect "intruders," moving objects up to a distance of 35 feet in front of the robot.

Age Level

Children and adults will enjoy hearing RB5X sing and play "Daisy, Daisy;" older children and adults can use the "Intruder Alarm" program with the RB5X as a security system or to learn about sonar.

Operation

To use your "Intruder Alarm/Daisy, Daisy" module:

1. Make sure your RB5X is switched off.
2. Insert the software module into the socket on the RB5X's interface panel, making sure the guide marks on the socket and on the module match up. Push the module firmly into the socket. Set the module switch to 4K.
3. Switch RB5X on. The center light-emitting diodes (LEDs) begin flashing. If the LEDs do not flash, check to be sure the software module is installed correctly, that the robot is adequately charged, and that the switch located to the right of the module socket is set to the proper position. If the LEDs still do not light, check the "Troubleshooting" section of the RB5X Reference Manual or call your dealer.

A. 'Daisy, Daisy'

A.1 RB5X plays the song "Daisy, Daisy" in two different octaves. Press bumper 1 to select the low octave, or bumper 2 to select the high octave. RB5X's bumpers are numbered 1 through 8, starting with the bumper under the sonar sensor as #1 and proceeding clockwise around the robot as you look down on it.

A.2 Press bumper 1 to tell RB5X to begin playing the song. The robot flashes its center LEDs in a random pattern when it is playing the song; this random pattern changes to a regular flashing pattern when the song is complete. The regular flashing pattern repeats about 20 times (once per second).

A.3 Wait until the LEDs return to the random pattern before giving RB5X more instructions.

A.4 To have RB5X play the song "Daisy, Daisy" repeatedly in one octave, press bumper 1 or 2 to select the octave, then press bumper 5. The robot repeats the tune over and over, with a delay of about 20 seconds between repetitions.

A.5 Press bumper 8 once to have RB5X sing the words to "Daisy, Daisy" Press this bumper again if you want to hear the song again; RB5X does not automatically repeat it.

A.6 To change from the "Daisy, Daisy" program to the Intruder Alarm program, switch RB5X off, then on again, or press the software reset button on the interface panel, and begin at step B.1. Do not press the software reset button until your RB5X has finished playing or singing "Daisy, Daisy."

A.7 Be sure to switch your RB5X off before removing the "Intruder Alarm/Daisy, Daisy" software module.

B. Intruder Alarm

B.1 RB5X sends out sonar signals in a cone shape and establishes a "picture" of the world in front of it by reading the way the sonar signals bounce back. The sonar sensitivity is adjustable; by pressing bumper combinations the user determines how much movement RB5X "sees" before sounding its alarm or responding with one of three different phrases. This program not only allows RB5X to guard your home, it's also a great way to learn how sonar works! The RB5X's bumpers are numbered 1 through 8, starting with the bumper under the sonar sensor As #1 and proceeding clockwise around the robot as you look down on it. To use the "Intruder Alarm" program, press bumper 5.

B.2 RB5X's LEDs turn off when bumper 5 is pressed, indicating that the robot is ready to accept commands to set the sonar sensitivity level.

B.3 The sonar sensitivity level is set by pressing the bumpers listed below.

| Bumper | Value |
|--------|---------|
| 2 | adds 1 |
| 1 | adds 5 |
| 8 | adds 10 |

Each bumper adds a value to the sensitivity level; for example, if you press bumper 2 (starting the sensitivity level at 1), bumper 1 (adds 5 to the level), and bumper 8 (adds 10 to the level), you get a sonar sensitivity level of 16. If you set a very low sensitivity level, such as 2, RB5X tolerates very little movement in front of it before it sounds its alarm; you may have "false alarms." The higher the sensitivity level you set, the more movement the robot "ignores" before sounding the alarm. The four corner LEDs blink with each bumper press.

B.4 When you have reached the desired sensitivity level, press bumper 5 to continue,

B.5 When bumper 5 is pressed the LEDs flash to indicate that the user must press a bumper to select RB5X's alarm response. The options are:

| Bumper | Response |
|--------|-------------------------|
| 1 | "Intruder, intruder!" |
| 2 | "Halt: Who goes there?" |
| 3 | "Hello, stranger." |
| 4 | Siren |

B.6 Press the bumper corresponding to your choice. To change alarms, you must switch the RB5X off and back on again, or press the software reset button on the interface panel, and begin at step B.1

B.7 Once you have selected an alarm response, RB5X immediately sends out sonar signals (you hear a soft clicking sound for each "burst" of sonar) to build a "picture" of the environment in front of it by reading the way the sonar signals bounce back to the sensor.

B.8 Pass your hand in front of the sensor or walk in front of the robot to hear the alarm response.

B.9 If you place an object in front of RB5X, it sounds the alarm response and then incorporates the object into its sonar picture. The alarm does not sound again until you move the object or until there is another movement in RB5X's picture.

B.10 If you move RB5X while your are using the "Intruder Alarm" program, the robot responds with the alarm, then uses its sonar system to build a picture of the new environment in front of it.

B.11 If there is nothing in front of RB5X for the sonar to bounce back from, the robot says, "Sonar is out of range." (This usually happens when there are no objects within 30 to 35 feet in front of the robot.)

B.12 To change from the Intruder Alarm Program to the "Daisy, Daisy" program, switch RB5X off, then on again, or press the software reset button on the interface panel, and begin at step A.1.

B.13 Be sure to switch your RB5X off before you remove the "Intruder Alarm"/"Daisy, Daisy" software module.