MTS-33T

Intelligent Micromouse Trainer

MTS-33T allows students to carry out 3 types of micromouse experiments, including wall maze solvers, line maze solvers, and line followers. Students can efficiently and flexibly set up experimental environments with provided maze walls, posts, and line track pads.

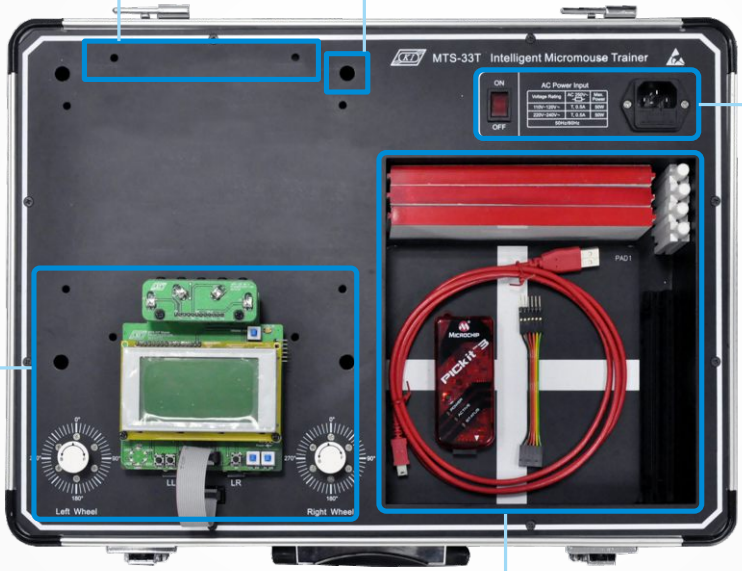
Since most micromouse adopt MCUs for control, learning to write MCU programming is very important for this subject. In MTS-33T, students can learn how to write, download, and execute MCU programs, and they can immediately see the behavior of micromouse after MCU code is executed.

MTS-33T provides a simulation software for students to design their own maps of line mazes and wall mazes so as to observe the walking paths of micromouse.

Hardware overview

Holes for inserting the rails (total 8 holes)

Holes for inserting the maze posts (total 4 holes)



AC power input socket and AC power switch

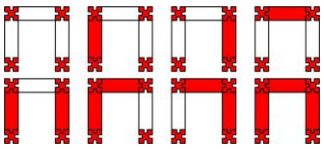
Micromouse main body

Storage tank (for placing the accessories, including maze posts, maze walls, rails and a programmer)

- The maze walls and tracking lines are of the international standard size.
- When the micromouse is overloaded, it will automatically disconnect.
- Sensor sets are available for selection to detect wall condition or line conditions.
- The dsPIC33F chip and peripheral circuits (eg: power circuits, sensor circuits, I/O circuits) are used to assist the learning of microprocessor control.
- A protection suitcase is provided for easy transport and storage.

Hardware simulation function

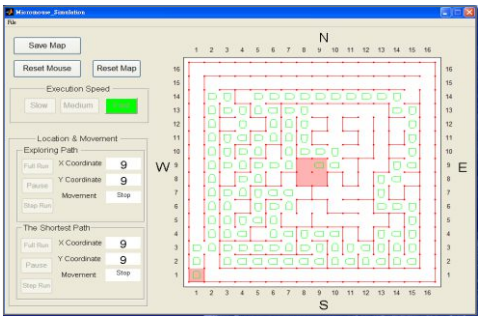
- Wall maze solver
- Line maze solver
- Line follower



Software simulation function

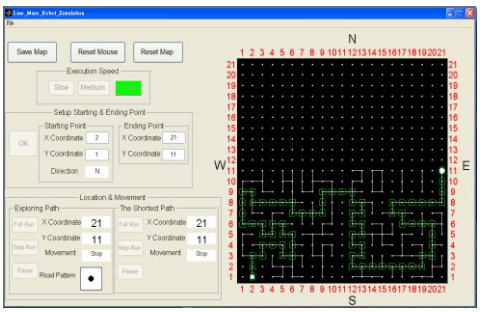
- Wall maze solving

  The maze comprises 16 x 16 unit squares. Using the simulation software and the gradient descent algorithm to simulate the behavior of a micromouse in a wall maze.



- Line maze solving

  Using the central-right-left path selection rule to simulate the behavior of a micromouse in a line maze.



PIC kit™ 3 In-Circuit Debugger (Optional)

Microchip 's PIC kit™ 3 In-Circuit Debugger / Programmer uses in-circuit debugging logic incorporated into each chip with Flash memory to provide a low-cost hardware debugger and programmer.