



## MTS-51

### 8051 Microcomputer Trainer



8051 is the original chip of MTS-51 family devices which is originated from Intel. This chip is a stand-alone, powerful 8-bit single-chip microcomputer and is commonly used for real-time control applications. MTS-51 microcomputer trainer is designed for learning 8051 core architecture and instructions.

#### ► Features

- Through series port interface, the ISP and IAP functions of P89V51RD2BN control chip enable the program codes to be downloaded to flash memory and show the results at real time.
- Reserving external connection pins for advanced experiments
- Plenty of experiments to do various basic I/O control applications
- The single chip of the trainer can be replaced by INTEL's 8751 / 52 series (without ISP function) and ATMEL's AT89C51 / 52 series (with ISP function)
- With various common I/O components and experiments, MTS-51 turned learners into experienced users of basic control application with 8051 microcontroller.

#### ► Specifications

1. P89V51RD2BN single chip x 1, with ISP (In System Programming) function
2. LCM x 1, back light (20 x 2 lines) LCD module
3. 7-segment display x 4
4. LED-bar 10 bit x 2
5. 4 x 4 matrix keyboard x 1
6. 12V stepping motor x 1, 200 steps, with A, B,  $\bar{A}$ ,  $\bar{B}$  coil output connector
7. Photochopper x 2  
PH1 for interrupt request signal and interdict counter  
PH2 for counter, pulse counter or counter control and interdict counter
8. IC555 x 1, instable oscillating circuit for pulse signal output
9. 8 x 8 dot matrix LED x 1

10. RS-232 interface x 1 for ISP function
11. 8-bit DIP switch x 3 for circuit start control
12. Micro speaker x 1
13. 10 x 2 extend socket 1pc, for P0 and P2 output
14. Through RxD, TxD connector for multi-chip transfer control
15. Built-in power supply  
Input AC power : 110/ 220V, 50/60Hz  
Output DC power : 12V/1.5A, 5V/2.5A

#### ► List of Experiments

1. LED display control
2. Dot matrix LED control
3. Step motor control
4. Input port expansion
5. Pulse counter
6. Speaker control
7. Serial communications
8. 7-segment display control
9. Matrix keyboard control
10. Output port expansion
11. Photo interrupter control
12. Timer/counter
13. LCM display control

#### MTS-52ICE (Option)



1. 32Kbyte emulator break point setting
2. Single trace step into/step over & step out auto step function
3. Register & memory (data program) editor
4. Support line assembly
5. Download LST & HEX file & full run