

This trainer has been designed with a view to provide practical and experimental knowledge of Sensors programming with 8051 Microprocessor Board.

SPECIFICATIONS

A. Main Specs

1. Following Parts and Modules are assembled on Single PCB of size - 18 Inch x 15 Inch.
2. The complete circuit diagram is screen printed on component side of the PCB with circuit and Parts at the same place.
3. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement.
4. Modules and Parts should be removable without desoldering for easy repair / replacement
5. The acrylic cover is fitted on PCB to safeguard main parts.

B. 8051 Microcontroller Board

1. Core 8051 MCU
2. DIL40 ZIF Socket Microcontroller socket
3. Quartz Crystal - 11.0592Mhz
4. Power plug-in jack Power supply AC/DC 12V
5. On board Regulated Power Supply +5v, 12V supplies
6. A Serial Port for ISP
7. An RS232 Serial Port
8. 7 Segment multiplexed Display.
9. Interface for 16 x 2 LCD display for both programming mode and run mode
10. 24Cxx I2C EEPROM
11. RTC DS1307
12. 8 LED array
13. 4 x 4 Matrix Key Pad
14. ULN2003 to Drive Stepper Motor and Relays

C. 8051 Programmer Board

1. Ready to run programmer to support family of controllers AT89C51/52 & 55
2. Supporting both programming modes Key Pad and PC
3. Easy To flash 89V51RD2 Through Flash Magic Software

D. Application Modules

1. RFID Card Reader
2. Finger Print
3. Zigbee Module
4. GPS Module
5. GSM Module
6. Bluetooth Module
7. WiFi Module

E. Hardware

1. DC Power Supplies +12V, -12V, +5V & - 5V
2. Breadboard - 400 Points to make circuits
3. 2 mm interconnection Sockets

F. Accessories

- | | |
|---|-------------------------|
| 1. USB Cable | : 1 No |
| 2. Ethernet Cable | : 1 No |
| 3. Jumper wires | : 30 Nos. |
| 4. Simulation Software and Driver CD | : 1 No. |
| 5. Practical Manual - Printed + Soft Copy | : 1 No. |
| 6. E-Books for IOT Subject | : 10 Nos. in PDF Format |
| 7. Mp4 Video Class for Microprocessor Subject | : 40 Nos |

EXPERIMENTS

A. Theory Experiments for 8051 Board

1. To understand theory and working of 8051 Microcontroller operating software.
2. To understand Pin and Connection Diagram of 8051 Microcontroller
3. To understand USB Interface for 8051 Microcontroller.
4. To understand theory of 16 x 2 LCD Display
5. To understand theory of RFID card and RFID card reader
6. To understand theory of Finger Print module
7. To understand theory of Zigbee module
8. To understand theory of GPS module
9. To understand theory of GSM module
10. To understand theory of Bluetooth module
11. To understand theory of Wi-Fi module

B. Practical Experiments

12. To make LED blink
13. To display data on 7 segment display
14. To display data on 16 x 2 LCD Display
15. To transfer data using RS232 serial port
16. To use 4 x 4 Matrix Key Pad
17. To convert Analog Data into Digital Data using ADC
18. To measure time using RTC
19. To program 8051 using 8051 programmer
20. To read RFID card using RFID card reader
21. To detect finger data using Finger Print module
22. To interface Zigbee module to 8051 Microcontroller
23. To interface GPS module to 8051 Microcontroller
24. To interface GSM module to 8051 Microcontroller
25. To interface Bluetooth module to 8051 Microcontroller
26. To interface Wi-Fi module to 8051 Microcontroller

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