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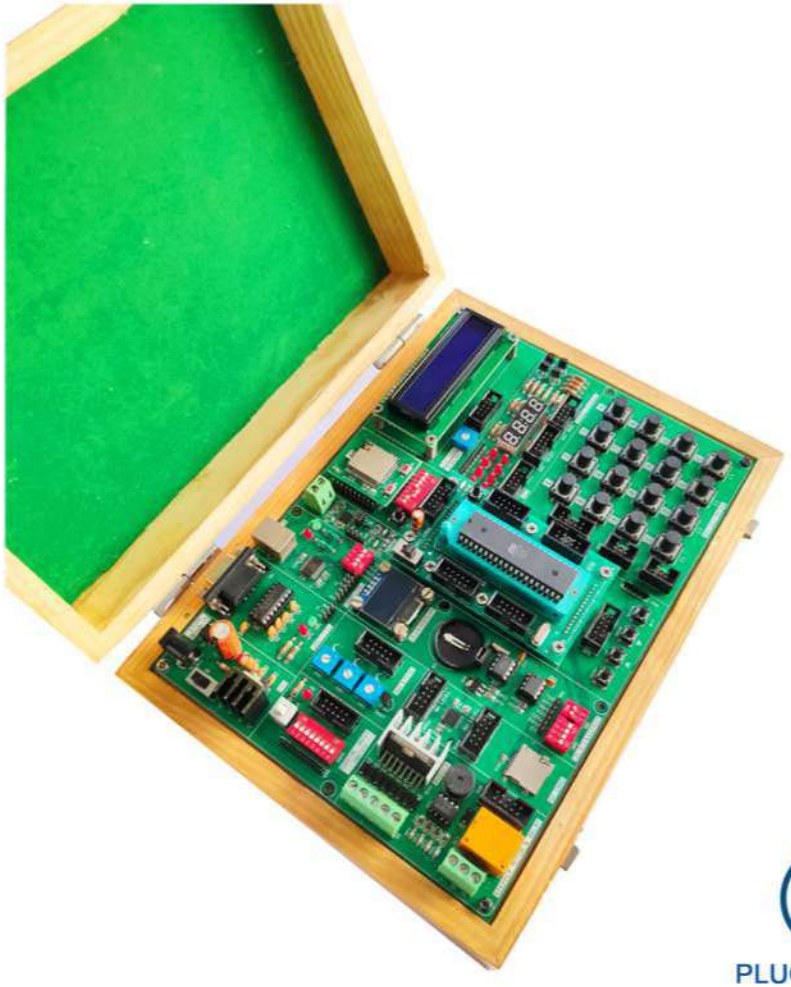

8051

DEVELOPMENT TRAINER KIT

PLUG & CODE | ON BOARD PROGRAMMING | RTC | ON BOARD MODBUS RTU | 8051 MICRO CONTROLLER | RoHS 2011/65/EU

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START YOUR EMBEDDED SYSTEM DESIGN JOURNEY TODAY..!

8051 essential development features a plug and plays design that makes it easy for connections and helps Students, hobbyists, enthusiasts, and professionals to focus more on Program/application development. 8051 Development Trainer kit equipped with onboard IO's, communication interfaces & peripherals. It is really easy to design, experiment with, and test circuits without soldering. It's used in many Educational Institutions and R&D LAB across the world.

Board Features

- Plug & Play Interface Connectivity.
- Professional EMI/RFI Complaint PCB Layout Design.
- Modular Block design makes Easy access & quick prototyping.
- FRC connectivity features minimize the connection Error.
- Supports 8051, AT89SXX and AT89CXX series chips 40 pin DIP package.
- The DIP40 locking device for reuse ATMEL microcontroller.
- High Quality Grade PCB with wooden Enclosure.
- On Board Programming.
- 8 interfacing LED's
- 1 * 4 Menu keypad.
- 4 * 4 Matrix Keypad.
- RS232, RS485, USB communication port.
- 16 * 2 LCD & OLED Display
- ADC & DAC Card.
- 8 bit 4 port IO.
- 3.3 to 5V Level Converter.
- Power Supply 3.3V and 5V.
- SD Card Interface.
- RTC & EEPROM Interface.
- DC Motor / Stepper Motor Driver.
- Relay, Buzzer.
- 1xTemperature Sensor.
- 3x Analog Test POT.
- On Board WiFi / Bluetooth Connectivity.

ON BOARD DIY PROJECTS

- Digital clock using RTC DS1307 & 16x2 LCD.
- Digital lock using Hex Keypad & 16x2 LCD .
- Digital password enabled access control system.
- Temperature sensing & controlling relay.
- Temperature sensing & speed control of motor.
- Simple pulse input seven segment counter.
- Realtime Temperatuure sensing & Login to SD card.
- Data Login through RS232 serial interface with # deluminator.
- Modbus master/slave communication.
- Bluetooth controlled appliance through Relay.
- Timer enabled Relay.
- Motor controlling throught WiFi.
- LED controlling through PC (USB Interface).
- 4 digit random number generator.
- Graphic icon display using OLED.
- Menu controller LED chases.

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ABOUT 8051 DEVELOPMENT BOARD

The W78E052D series is an 8-bit microcontroller which can accommodate a wider frequency range with low power consumption. The instruction set for the W78E052D series is fully compatible with the standard 8051. The W78E052D series contains 16K/8K bytes Flash EPROM programmable by hardware writer; a 256 bytes RAM; four 8-bit bi-directional (P0, P1, P2, P3) and bit-addressable I/O portsan additional 4-bit I/O port 4; three 16-bit timer/counters; a hardware watchdog timer and a serial port. These peripherals are supported by 8 sources 4-level interrupt capability.

Scope of Learning Experiments:

- LED blinking.
- 8 bit LED Left shift, Right shift and counting operation.
- Keypad Interrupt Interface
- 16*2 LCD interface.
- Matrix Keypad Interface.
- ADC & DAC interface.
- Traffic Light Signal Interface.
- 8 bit DIP switch interface.
- 7 Segment interface.
- Temperature Sensor Interface.
- L298 Driver for DC Motor and Stepper motor interface.
- Elevator Interface.
- Buzzer, Relay interface.
- RS485, RS232 serial communication
- PWM Interface
- UART Operation
- RTC DS1307I2C protocol interface.
- AT24C04 EEPROM I2C protocol interface.
- RF/WiFi Communication.
- Temperature Sensor Interface.

Development Environment

KEIL™ Tools by ARM

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SPECIFICATION

MCU

- 8051 - DOWD - V3 embedded, Xtensa(R) dual-core 32-bit LX6 microprocessor, up to 240 MHz.
- 448 KB ROM for booting and core functions
- 520 KB SRAM for data and instructions
- 16 KB SRAM in RTC
- 16 MB SPI flash

HARDWARE

- **Interfaces:** SD card, UART, SPI, SDIO, I2C, LED PWM, Motor PWM, I2S, IR, pulse counter, GPIO, ADC.
- **Communication Interface:** RS232, RS485 (Modbus RTU) , USB, SPI, I2C.

DISPLAY INTERFACE

- OLED 0.96
- 16X2 LCD Display
- Seven Segment Display

KEYPAD INTERFACE

- 4X4 Hex Keypad
- 1X4 1X4 Menu Keypad

MEMORY INTERFACE

- SD Card Interface
- EEPROM AT24C08

DRIVERS, RELAY & BUZZER

- DC Motor/Stepper Motor
- Buzzer

ON BOARD SENSOR, TEXTING INPUT POT & SWITCHES

- 1X Temperature Sensor LM35
- 3X Analog Test POT
- 8X Selection DIP Switch

CONVERTER & ADAPTER INTERFACE

- Xbee Adapter
- 3.3V to 5V Level Converter

REAL TIME CLOCK (RTC)

- RTC DS1307

ON BOARD POWER POINTS

- 5V, 3.3V & GND

DIMENSION

- W 264 X L199 X H 60

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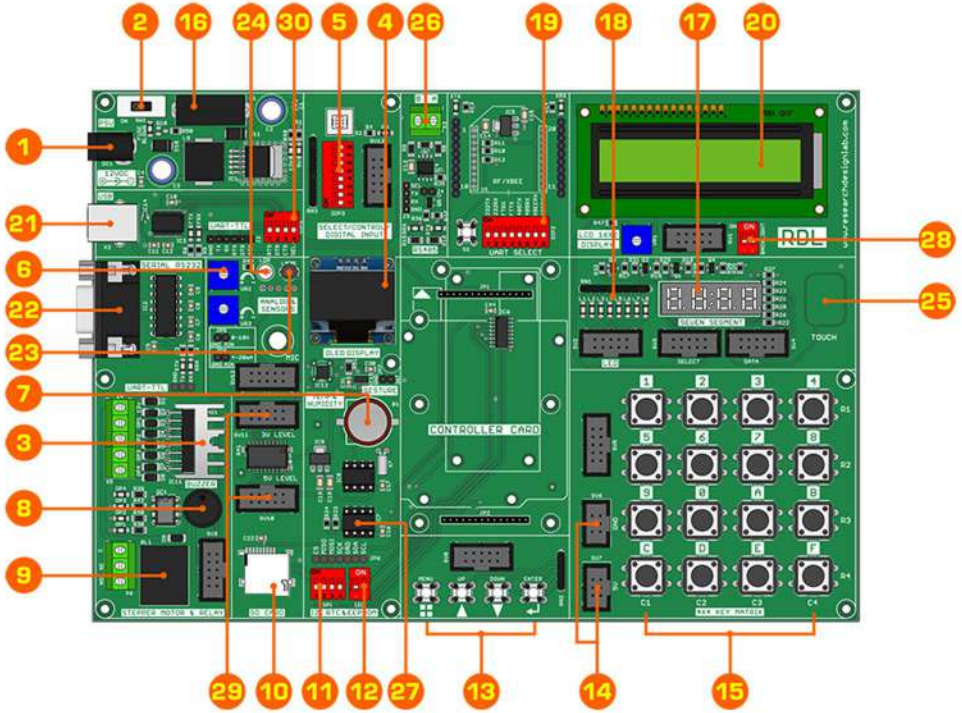
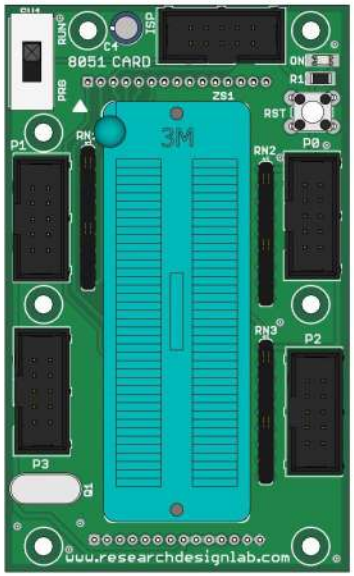
8051 DEVELOPMENT TRAINER KIT BOARD NARRATION





1. Power Supply
2. Power ON Switch
3. L298 Driver
4. OLED Display
5. Digital Input Switch
6. ADC (Variable Resistor POT)
7. RTC Battery
8. Buzzer
9. Relay
10. SD Card Holder
11. On Off Switch for SPI
12. On Off Switch for I2C
13. 1*4 Keypad Switches
14. RDL Bus FRC 5V & GND Connector
15. 4*4 Keypad Matrix
16. FUSE Holder
17. 7 Segment Display
18. 1*8 LED's
19. Jumper Settings for UART TTL
20. 16*2 LCD Display
21. USB Port
22. DB-9 Serial Female Connector
23. LM35 - Temperature Sensor
24. LDR Sensor
25. Touch
26. RS485
27. EEPROM
28. Backlight On/Off Switch
29. 3.3V to 5V Level Controller
30. Comport Handshaking Signal DIP Switch

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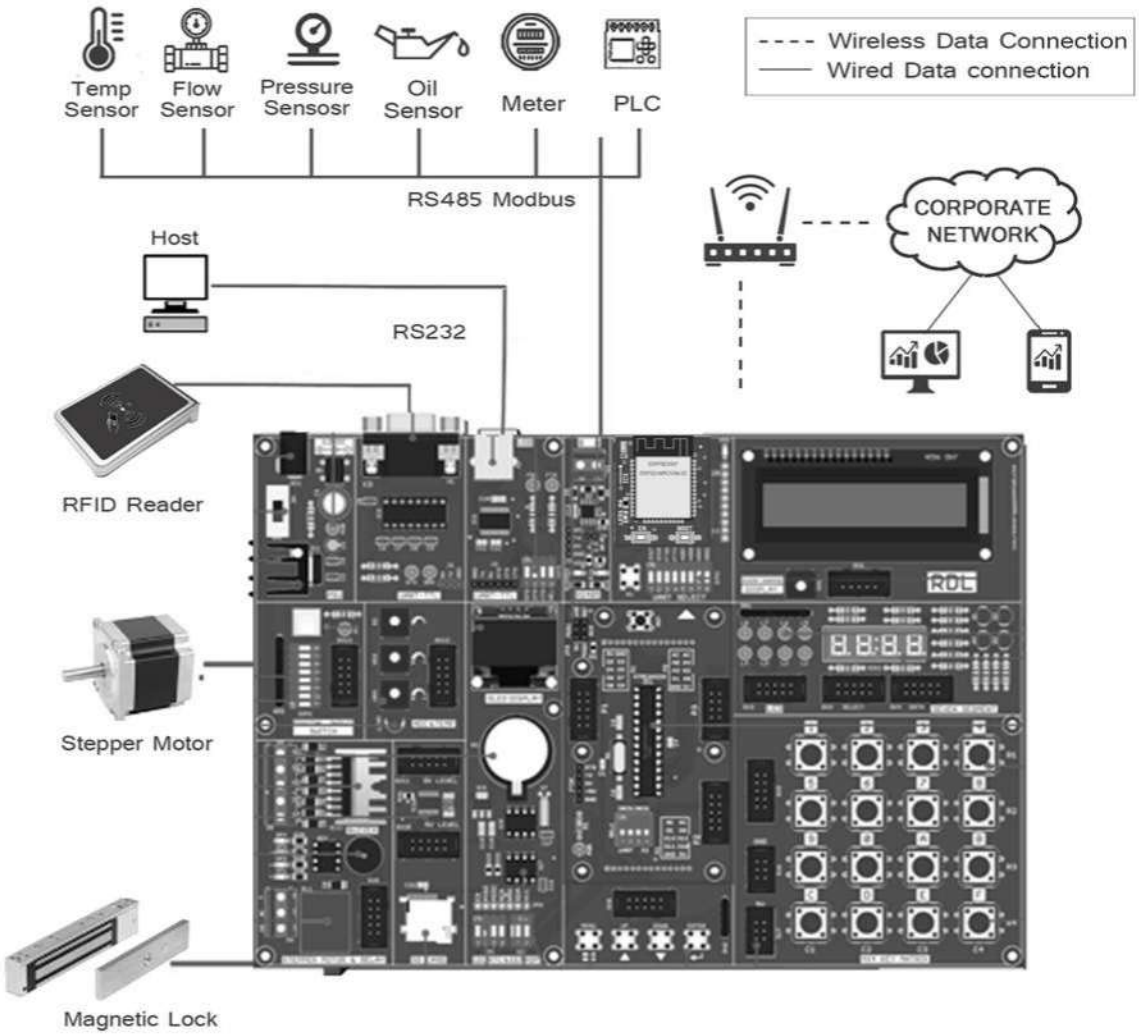
APPLICATION WIRING DIAGRAM



Idea to Proof of Concept (POC)

IoT Requirement | Plug & Code | Build Solution

Package Includes

- ✔ Development Board with Wooden Enclosure
- ✔ USB Cable.
- ✔ 8051 Breakout Board
- ✔ 12V 2A Adapter.
- ✔ FRC Cable

NOTE: XBee module is not included in the package

Optional - OLED & SDCARD module provided on this board hobblyist / developar can make use of this module with their previos knowledge or open source community support and we should not have the support for the modeulers.

Note:

1. Unless otherwise specified, all parameters in this datasheet were measured at 25°C and 75% humidity.
2. All index testing procedures in this datasheet are based on our company's corporate standards.
3. We can offer product customization; please contact the sales team directly for more information.
4. Specifications are subject to change without prior notice:
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