



# ARM7 - LPC2148 TRAINER

MODEL - ARM-7-2148

This trainer has been designed with a view to provide practical and experimental knowledge of ARM7 Family (LPC2148) microcontrollers.



## FEATURES

1. RTOS Support
2. Evaluate Real Time Applications
3. Supports Embedded C, ASM
4. ISP Programming / JTAG Debugging
5. Facility to interface external devices

## SPECIFICATIONS

1. Devices : LPC2148 (ARM7TDMI-S Core)
2. Memory : 512K FLASH - Program
3. Data Memory : 32K+8K SRAM
4. Clock : 12MHz crystal, Max = 60 MHz
5. Serial Ethernet | CAN 2.0
6. SPI Digital-Analog Convertor
7. 8 No's of Point LEDs (Logic Output)
8. 8 No's of Slide Switches (Digital Input)
9. 4x4 Matrix Keypad
10. 2X16 Character LCD (Background Light)
11. 4 No's of 7-Segment Display (I2C Enabled)
12. 2 No's of Analog Input (Potentiometer)
13. Temperature Sensor(LM35)
14. Stepper Motor Interface
15. 2 No's of SPDT Relay
16. DS1307 RTC with Battery-Backup
17. 2 No's of UART(RS232)

**Sigma Trainers and Kits**  
E-113, Jai Ambe Nagar,  
Near Udgam School,  
Thaltej,  
**AHMEDABAD - 380054.**  
**INDIA.**

**Phone(O): +91-79-26852427/ 26850829**  
**Phone(F): +91-79-26767512/ 26767648**  
**Fax : +91-79-26840290/ 26840290**  
**Mobile : +91-9824001168**  
**Email : sales@sigmatrainers.com**  
**: sigmatrainers@sify.com**  
**Web : www.sigmatrainers.com**

**Dealer:-**

18. Virtual Port
19. Buzzer (Alarm), Digital / Analog Output
20. Interrupts Study, Reset Button
21. Serial EEPROM (I2C Devices)
22. \*128x64 Graphical LCD
23. PS/2 | RS-485
24. 10-Pin Port Expansion Connector
25. JTAG Header (Program/Debug) | ISP Programmer
26. Communication Protocols : SPI | I2C | 1-Wire | RS-485 | CAN2.0 | RS-232
27. Books for Embedded Systems : 10 Nos in pdf Format
28. Mp4 Video Class for embedded systems : 40 Classes in Mp4 on DVD / Pen Drive

## EXPERIMENTS

1. Interfacing LPC2148 to LCD/GLCD
2. UART Interfacing LPC2148 in embedded system (GSM/GPS)
3. Interfacing LPC2148 for internal ADC on interrupt basis
4. Interfacing SD card to LPC2148
5. Interfacing EEPROM to LPC2148 using I2C protocol
6. 0 to 9 counter using single seven segment
8. 0 to 99 UP / Down counter using two seven segment
9. "HELLO WORLD" display on 16\*2 LCD
10. Moving Message display on 16\*2 LCD
11. Rectangle and Square pattern on Graphical LCD 128\*64
12. "Hello World" display on Graphical LCD 128\*64
13. Push button switch interfacing Pull UP / Pull Down
14. 4\*4 Matrix keyboard with LCD
15. Internal ADC with POT. With LCD display
16. Internal ADC with LM35 Temperature sensor
17. Simple DC Motor Forward & Reverse
18. Simple Servo Motor Forward & Reverse
19. Simple Stepper Motor Forward & Reverse
20. External interrupt, LED Blinking
21. Serial data transmission
22. Serial data receiving using internal interrupt
23. Serial data display on LCD
24. Internal EEPROM Write
25. Internal EEPROM Read
26. Achieving 1s delay using Timer
27. LED brightness control using PWM
28. DC motor speed Control using PWM
29. Watch controller using watchdog timer –Perform RESET operation on specific time
30. Digital Clock using internal RTC
31. Debugging SPI Protocol
32. Debugging I2C Protocol
33. Generating Triangular wave using DAC
34. USB 2.0 HID device configuration
35. USB 2.0 HID device driver implementation