



Order Code : 20213560.1A

Name : Microprocessor



## Specifications:

### Features

- ▶ ARM7 Controller based on LPC 2148
- ▶ On board USB programmer
- ▶ USB 2.0 Full-speed compliant device controller with 2 kB of endpoint RAM
- ▶ Learning of USB Protocol like HID, CDC and MSD
- ▶ Master Reset/Restart Key for hardware reset
- ▶ RTOS supported (RTX,  $\mu$ C/OS-II)
- ▶ On board USB (UART0) and UART1 Interface
- ▶ On board Temperature Sensor
- ▶ On board 16X2 LCD Display
- ▶ On board 10-bit DAC provides variable analog output
- ▶ On board PWM and Interrupt
- ▶ On board facility to connect JTAG Programming and debugging
- ▶ All GPIO's are provided on 6 connectors (10X2)
- ▶ Wireless module adapter for optional - 2.4GHz ZigBee (Xbee) / Bluetooth / Wi-Fi connectivity
- ▶ Motor driver circuit for DC and Stepper Motor
- ▶ I2C and SPI Interface connector
- ▶ On board 8 LED
- ▶ On board 4X4 Hex keypad interface
- ▶ Inbuilt Real Time Clock with Battery holder
- ▶ On board switch
- ▶ 128 byte of I2C external EEPROM
- ▶ RS485 Interface connector
- ▶ Expansion connectors for plug in modules and prototyping area
- ▶ Controller module is detachable, user can use other controller as well

*Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.*

### **TESCA TECHNOLOGIES PVT. LTD.**

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension, Jaipur-302029, Rajasthan, India.  
Ph/ Fax: 91-141-2771791, 2771792; Email: [info@tesca.in](mailto:info@tesca.in), [tesca.technologies@gmail.com](mailto:tesca.technologies@gmail.com)  
Website: [www.tesca.in](http://www.tesca.in)

## Scope of Learning

- ▶ Study of ARM7(LPC2148) Microcontroller architecture
- ▶ Pin to pin study of MCU
- ▶ Study and Interface serial protocol(I2C,SPI,UART)
- ▶ Study and Interface internal PWM, Timer, Interrupt
- ▶ Study and Interface LED and Temperature sensor
- ▶ Study and Interface Internal Real Time Clock (RTC)
- ▶ Study and Interface of EEPROM memory
- ▶ Study of Internal ADC and DAC
- ▶ Study and Interface of Stepper Motors
- ▶ Study and Interface of 4X4 Hex keypad
- ▶ Study and Interface 16X2 LCD
- ▶ Study of RTOS signal, semaphore, mutex, mailbox and priority scheduling
- ▶ Study and Interface various external MCXX series modules

## Technical Specifications

MCU	:	LPC2148
External memory	:	EEPROM
Crystal Frequency	:	12 MHz
LEDs	:	8 nos.
ADC	:	14nos. Internal 10 bit ADC
DAC	:	10 Bit internal DAC
Interrupts	:	4 nos
Variable Supply	:	0-3.3 Volt
RTC	:	32.768KHz, 3.3V Battery
PWM	:	7 nos
Sensor	:	LM35
Display	:	16X2 LCD Display
Motor Drive	:	L293D 600mA (5-12V)
GPIO's	:	All GPIO Pins
Communication interfaces	:	USB 2.0 Full speed device control
Programmer	:	USB Interface
Programmer Mode	:	Run/ISP switch selection
Baud Rate	:	9600 bps (Default)
Interconnections	:	2 mm Patch chords with FRC Cables
Dimensions (mm)	:	W 326 x D 252 x H 52
Power Supply	:	110V - 260V AC, 50/60Hz
Weight	:	1.5Kg (approximately)
Operating Conditions	:	0-40° C, 80% RH
OS Support	:	Windows XP, 7 & 8 (32bit and 64 bit)
Included Accessories	:	USB cable, Mains cord, 2mm Patch cords, Product Tutorial (CD), 20 Pin FRC cable, SMPS, Stepper motor.

*Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.*

### **TESCA TECHNOLOGIES PVT. LTD.**

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension, Jaipur-302029, Rajasthan, India.  
Ph/ Fax: 91-141-2771791, 2771792; Email: [info@tesca.in](mailto:info@tesca.in), [tesca.technologies@gmail.com](mailto:tesca.technologies@gmail.com)  
Website: [www.tesca.in](http://www.tesca.in)