

TriozTechnologies India Private Limited

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List of Projects for various Platforms from (8-bit to 32-bit)

Simple programs – Applications to all architectures

Intel 8051, Motorola 68HC11 & PIC 18fxx Series

- 1. Timer/counter programming,**
This project is used to demonstrate various aspects of counters and timers. Logic level inputs can be counted by the timer hardware on the controller.
- 2. Interrupt handling programming**
This project demonstrates use of both external interrupts and timer interrupts of the controller.
- 3. Serial communication programming**
For interfacing of the controller board to the PC using serial communication.
- 4. Input/Output port configuration programming**
This project demonstrates the different configuration of all ports of the controller as inputs or outputs.
- 5. 7 – segment display interfacing**
This project displays the Alpha- Numeric values in the 4 digit, seven segments LED display.
- 6. 24*2 LCD interfacing**
This project has interfacing routine for driving an alpha numeric LCD (liquid Crystal Display) module.
- 7. TCP/IP stack**
This program demonstrates all functions of TCP/IP Layers.
- 8. I2C bus control protocol**
This program is used to receive a byte from the I2C device with the most significant bit first.
- 9. ICMP stack**
This program sends an ICMP echo response using the received request data. And used to detect the network availability.
- 10. Hex – keypad interfacing**
This program demonstrates interfacing a keypad to the controller and displays the key pressed in the LCD and also the IDE terminal.
- 11. PC – 102 keyboard interfacing**
This project used to interface PC 102 Keyboard with the controller board.
- 12. Real – time clock interfacing**
This project provides access to real time clock via I2C bus communication.

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13. Stepper motor interfacing

This program is used to drive a stepper motor in different speed. The motor can be configured to run in forward and reverse directions

14. Traffic light controller interfacing

This project is for demonstrate the traffic light controls by controlling the LEDs.

15. ADC/DAC interfacing

This project demonstrates Digital to analog and analog to digital conversion.

16. Simple web – server configuration

This project is used to detect a network system and access the board as a web server in a network.

17. RFID Readers & Writers Interfacing

This project is used to interface RFID reader and writer for different application like attendance management system.

ARM7

1. LCD Interfacing

LCD can add a lot to your application in terms of providing an useful interface for the user, debugging an application or just giving it a “professional” look. In this example you will get an idea of how to interface LCD's, how to initialize it , what are the signal required on various pins. This example displays “Welcome to Trioz Technologies” message in the LCD.

2. TFT Interfacing

Thin Film Transistor (TFT) LCD can be interfaced directly with ARM7 Target board without any interface in between.

3. CAN2.0 Communication & Networking

CAN Communication which is basic interface for Automobile devices can be implemented using ARM7 Target Board.

4. JTAG Debugging,

JTAG means a standard for providing external test access to integrated circuits serially, via a four- or five-pin external interface. Short for Joint Test Action Group, which developed the standard. This example specifies how to debug an application using JTAG.

5. RFID Interfacing.

RFID Attendance System can be implemented using ARM7 Target Board, interfacing sensor with it

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6. **320 x 240 or more LCD display**
LCD Display of the size 320x240 can be interfaced using ARM7 Target Board with inbuilt drivers in the processor.
7. **320 x 240 or more TFT display**
TFT Display of the size 320x240, Supports Super Twist Nematic(STN), High Reflective TFT(HR-TFT) and Advanced TFT(AD-TFT) can be interfaced using ARM7 Target Board with inbuilt drivers in the processor.
8. **Graphical display**
Graphical Display like VGA(640x480), SVGA(800 x 600 DPI), XGA(1,024 x 768 DPI) can be interfaced.
9. **Serial communication**
a) **RS 232 Standards**, b) **Communication from USB of PC through target UART.**
An example program for how to trap the inputs from the COM Port. The data are coming from the Target Board.
10. **Digital still camera**
Image Capturing and processing from the Digital Still Camera can be implemented using ARM7 Target Board.
11. **Ink Jet / bubble Jet printer**
Ink Jet / bubble Jet printers can be interfaced to the ARM7 Target Board through the parallel port.
12. **Pager**
Implementation of Pager interface can be done using ARM7 Target Board.
13. **Entry level wireless handset**
Entry level wireless handset can be interfaced as Analog Inputs to the ARM7 Target Board
14. **Personal Audio Devices**
Personal Audio Devices such as MP3, WMA, AAC players can be connected as Audio Output Devices using ARM7 Target Board.
15. **Any 32-bit application.**
32-bit applications such as High Resolution ADCs' , DACs' can be implemented using ARM7 Target Board.

X86

1. **Basic understanding of RT – Linux installation**
This is a work out to install Real Time Linux module on a running linux Kernel Installation involve a standard Distribution of Linux (RedHat) running on an X86 PC .The RTLinux is patched to the standard Linux Kernel..

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2. **Basic understanding of RT – Linux development suite in the installation**

This is a work out to setup a development platform of RTLinux on pre installed linux machine to create real time applications

3. **Development of RT – Linux with target board**

This is a work out of building a RT kernel on a target

4. **Net – booting concepts**

This is an exercise to Net boot (Booting from a remote Hard Disk through Ethernet) a machine with remote kernel, NFS and RFS using DHCP and TFTP

5. **Create NFS and RFS file systems**

This is an Exercise to create Network file system (File system used in Net booting) and Root File system(the basic Linux directory structure) used for Net booting a machine

6. **Creating RFS for different target board**

This is a work out of creating a Root file system based on target Architectures

7. **Kernel compilation**

This is a process of Compiling a Fresh Linux Kernel for target architecture

8. **Understanding GNU tools**

This is a study of GNU Not Unix Tools such as GDB (Debugger) and GCC (Compiler)

9. **Shell programming**

This is a Study of basic shell scripting in Linux (C shell, Bash Scripting etc)

10. **RFS application**

This is an exercise to Create RFS (Root File system application) which is created on a Host Machine and can run on the Target Machine

ARM9

1. **RTLinux programming**

This is an exercise to write Real time Applications based on ARM architecture

2. **Simple Robot application,**

This is an Exercise to develop simple robot based on ARM using Real Time Programming

3. **Any mission critical application**

This is creating mission critical Real time Applications

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4. Medical Application like Ventilators, UScan devices.

This is Writing Medicine related applications based on ARM 9

5. Intelligent Sensor Networking

This is a process of real time networking over Intelligent Sensors

6. ARM9 cross compilation

This is a process of Cross Compiling a source to an ARM Architecture

7. Porting Linux to ARM9 architecture

This is a process of porting Linux on ARM 9 board

8. Understanding on ARM9 GNU tools

This is a study of GDB and GCC cross compiled to ARM

9. Net – booting ARM9 board

This is a process of Net booting ARM9 from a remote kernel