Embedded System Design Lab

Introduction

• An Embedded System is one kind of a computer system mainly designed to perform several tasks like to access, process, store and also control the data in various electronics based systems.

Scope of the Lab

• Embedded Systems is an emerging platform used in different application domains such as real time systems, autonomous driving, and Industry 4.0.

• This practical course covers the fundamentals necessary to take up embedded software development and also students can dive in to the details of embedded software programming by running the applications.

Courses to cater

EEE G512 Embedded System Design Lab (Electronics and Communication, Electrical and Electronics Engineering)
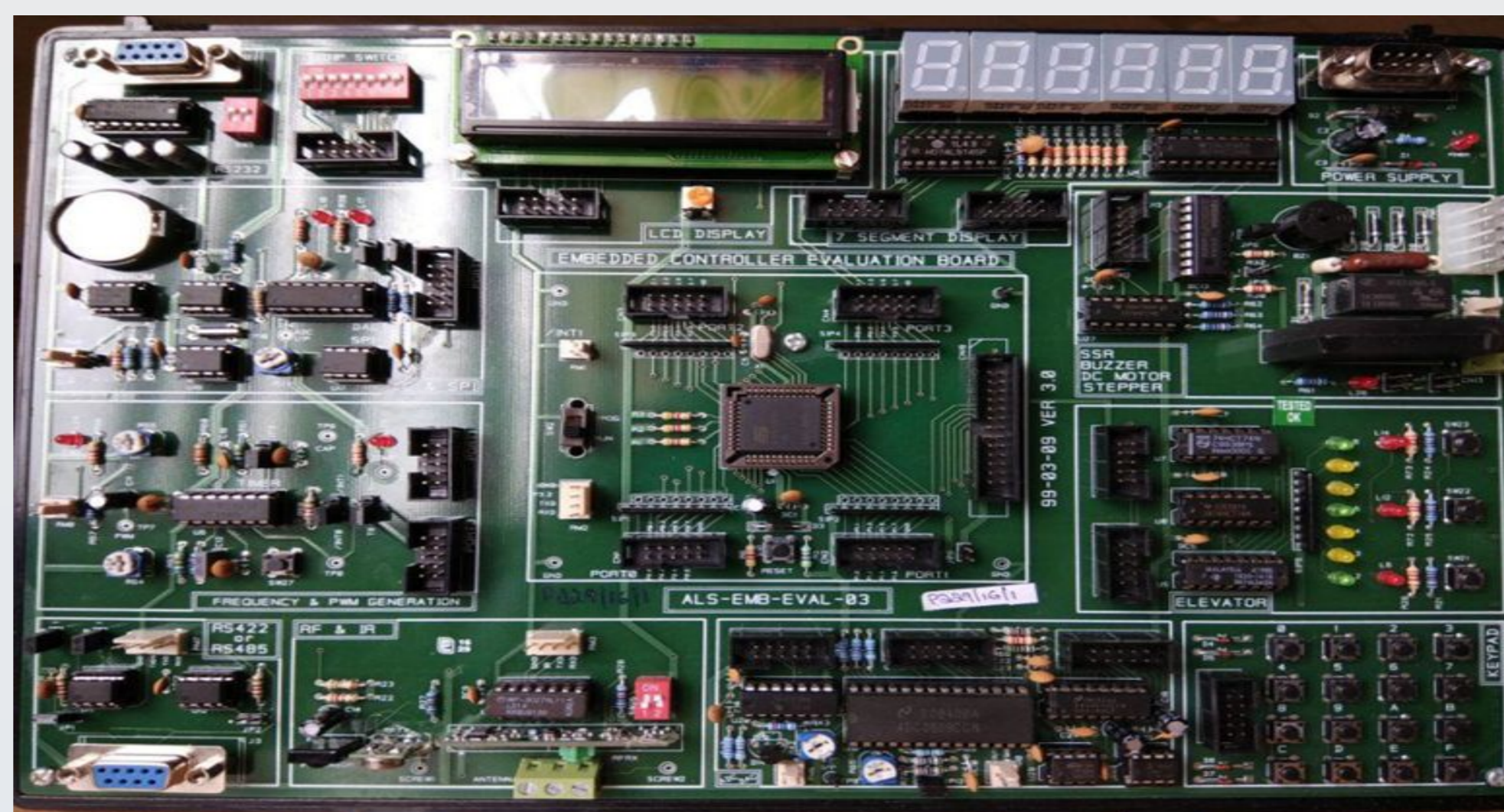
Software

• Keilu3 & PK51-ED10
• ATMEL Flip 2.4.2
• Flash Magic
• Python 3.9.0

Hardware

▪ ALS-EMB-89C51ED2
▪ ARM-LPC-2148
▪ NVIDIA JETSON NANO BOARD

Lab Equipment

ALS-EMB-89C51ED2 KIT

LPC-2148-ARM KIT

NVIDIA JETSON NANO BOARD

Faculty Coordinator

• Prof. MB Srinivas

Other Faculty Users

• Dr. J Soumya

• Dr. Syed Ershad Ahmed

Research Scholars

▪ Ms. Jisy NK
▪ Ms. Aparna Nair MK

Technician

▪ Mr. K Dasharath

List of experiments

1. Arithmetic and Logical operations using 8051 Trainer Kit
• Average of N Numbers
• Ascending order and Descending order
• Palindrome checking
2. Interrupts programming using 8051 Trainer Kit
3. Interfacing Programming using 8051 Trainer Kit
• DAC & ADC Interface
• Traffic Lights Interface
• Hex Keypad Display
• Controlling 8 LEDs using DIP switch
• Elevator Interface
• 7 Segment Display
4. Arithmetic and logical operations using ARM Trainer Kit
• Fibonacci Series
• G.C.D Numbers
• 2 X 2 Matrix Addition
5. Interrupts Programming using ARM Trainer Kit
6. Interfacing Programs using ARM Trainer Kit
• LCD Display
• Buzzer
• Temperature Sensor
• UART
• DC Motor

Applications

• Wireless Routers
• Home Automation System
• Military applications
• Automobiles
• Security Systems
• Image Processing
• Communication systems
• Robotics
• Complex Industrial Controllers

innovate   achieve   lead