BEAGLEBONE REV C TRAINER

MODEL - BEAGLE100

This trainer has been designed with a view to provide practical and experimental knowledge of BeagleBone Black.

SPECIFICATIONS

1. Following parts are to be soldered on single PCB of size 15"x 12 "

    1. Beaglebone Micro Controller Rev C :   1 No.
    2. Reed Switch Sensor   :   1 No.
    3. Audio Sensor   :   1 No.
    4. Infrared Sensor   :   1 No.
    5. Light Sensor   :   1 No.
    6. Humidity Sensor   :   1 No.
    7. Pressure Sensor   :   1 No.
    8. Temperature Sensor   :   1 No.
    9. Gas Sensor   :   1 No.
    10. PIR Sensor   :   1 No.
    11. Breadboard   :   1 No.
    12. Display 20 * 4 LCD   :   1 No.
    13. DC Motor   :   1 No.
    14. Servo Motor   :   1 No.
    15. SD Card – 16 GB   :   1 No.
    16. 2 Keys, Buzzer, Seven Segment Display, Potentiometer, Speaker, Transistor, 5V Relay and Different types of Resistors and LEDs

2.   E-Books for Beaglebone Subject   : 20 Nos

3.   Mp4 Video Beaglebone Practical   : 40 Classes on Pen Drive

4.   The complete circuit diagram should be is screen printed on component side of the PCB with circuit and Parts at the same place. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement. The acrylic cover is fitted on PCB to safeguard parts. It should work on 230 V AC Supply.

5.   Printed Manuals with softcopy on Pen Drive is to be supplied.

6.   Online manual and Library for Beaglebone Books, Charts, PPT, and Software is to be provided.

7.   Minimum 50 Experiments with .py python code and .bs Bone script files for Operating System, Basic, Audio Visual, Motor Control, Sensor Interfacing and Data acquisition, IOT and Web Server, SD Card are to be provided with Kit.

8.   **Note:-**
One Computer system (Pentium IV 2 GHz, 160 GB HD, 8 GB RAM with Two USB Port is required to operate this trainer.

09.   **Software**
1.   Controller Driver Software CD   :   1 No.
2.   Applications Software CD   :   1 No.

10.   **Accessories**
1.   Practical Manual   :   1 No.
2.   Required Cables   :   1 No.
3.   Jumper wires   :   50 Nos.
4.   Software and Driver CD   :   1 No.
5.   E-Books for Arduino Subject   :   10 Nos. in PDF Format
6.   Mp4 Video Class for Arduino Subject   :   40 Nos

EXPERIMENTS

1. Software and hardware configuration for Beagle bone board.
2. Write a program to blink on board LED.
3. Write program to take input form switch and blink LED.
4. Display "Hello world" on 20* 4 alphanumeric LCD
5. Moving Message Display on 20* 4 alphanumeric LCD.
6. Write a program to interface Infrared Sensor
7. Write a program to interface Audio Sensor
8. Write a program to interface Humidity Sensor
9. Write a program to interface PIR Sensor
10. Write a program to interface Reed Switch Sensor
11. Write a program to interface Light Sensor
12. Write a program to interface Gas Sensor
13. Write a program to interface Pressure Sensor
14. Write a program to interface Temperature Sensor

1. To Port / Boot Debian based OS
2. To Port / Boot Android based OS
3. To configure U-Boot and boot from it
4. To write first Device driver program on Debian Linux OS- "Hello world"
5. To load and unload Kernel Modules
6. To Write a Program for LED blinking using Device Driver for GPIO
7. To Write a Program Writing I2C device driver for RTC.
8. To Write a Program Writing SPI device driver for external memory/sensor.
9. To load, unload and configure Driver for Touch screen LCD.
10. To make LED blink using PWM Device