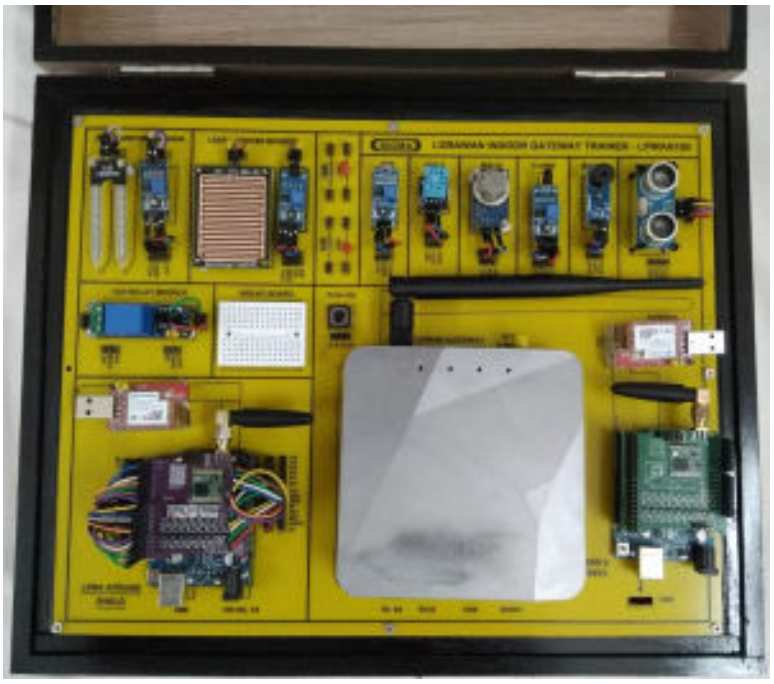
# 01. LORAWAN BASIC IOT TRAINER

## MODEL-LORA-IOT100

## SPECIFICATIONS



This trainer has been designed with a view to provide practical and experimental knowledge of Internet of Things (IOT) with Sensors programing with Raspberry and Arduino IOT Boards with multiple IOT Gateways.

## SPECIFICATIONS

### A. Main Specs

1. Following Parts and Modules are assembled on Single PCB of size - 18 Inch x 15 Inch.
2. The complete circuit diagram is screen printed on component side of the PCB with circuit and Parts at the same place.
3. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement.
4. Modules and Parts should be removable without desodlering for easy repair / replacement
5. The acrylic cover is fitted on PCB to safeguard main parts.

### B. Micro Controllers

1. Arduino UNO R3 : 1 No
2. Raspberry Pi 4 B : 1 No
3. Raspberry Pi Pico W : 1 No

### C. Wireless Gateways

1. Bluetooth IOT Gateway Module – HC05 : 1 No
2. BLE IOT Gateway Module : 1 No
3. Zigbee IOT Gateway Module - Xbee S2C – 2 mW With Antenna : 1 No
4. Wifi IOT Gateway Module - ESP8266/ESP32 Xtensa® Dual Core 32-bit LX6 Microprocessor : 1 No
5. GSM Cellular IOT Gateway Module - SIM800C with Audio interface support and Micro SIM : 1 No
6. LoRaWAN IOT Gateway – LA66 : 1 No

### D. Sensors

1. Temperature and Humidity Sensor - DHT11 : 1 No
2. Temperature Sensor – LM35 - Analog Output : 1 No
3. Infrared Sensor – Digital Output Module : 1 No
4. Ultrasonic Sensor - HC-SR04 : 1 No

## E. Features

1. Incorporates MQTT, HTTP and LoRaWAN® cloud Integration capabilities
2. Dual Wi-Fi enabling wireless experimentation between Raspberry Pi and Arduino
3. Dual Bluetooth facilitating wireless experimentation between Raspberry Pi and Arduino.
4. Supports diverse wireless protocols: Bluetooth, BLE, Wi-Fi, Zigbee and LoRaWAN
5. Incorporates GSM Cellular Interface support.
6. Offers multiple Protocol Interfaces: Digital, Analog, 12C, SPI, UART.
7. Complimentary one year cloud access
8. Rugged design to use it effectively.

## F. Multiple Onboard Embedded Communication Protocols

1. I2C
2. SPI
3. UART
4. RS485
5. RS232

## G. Multiple Onboard Wireless Communication Protocols

1. Bluetooth
2. BLE
3. Wifi
4. Zigbee
5. LoRaWAN

## H. Other Parts

1. 2 Channel Relay – 5 V, 5A : 1 No
2. Audio Buzzer – Active High : 1 No
3. TFT LCD Display – 1.8 Inch : 1 No
4. Push Switch – Active High : 1 No
5. Push Switch – Active Low : 1 No
6. Slide Switch : 2 No
7. RGB LED - Common Cathode : 2 No
8. RGB LED - Common Anode : 1 No
9. High Precision Pot – 10 Turn - 10K : 1 No
10. Audio Interface Support : 1 No
11. Breadboard - 400 Points : 1 No
12. Probe Tester : 1 No
13. USB to TTL Converter : 1 No
14. LCD Display- 20 X 4 : 1 No
15. LEDs : 2 No
16. Resistors – 220 Ohm : 4 No

## I. Accessories

1. All Cables and Adaptors
2. Pen Drive : 16 GB with All Codes and Soft copy of Manual
3. E-Books for IOT Subject : 100 Nos. in PDF Format
4. Mp4 Video for IOT Subject : 100 Nos
5. Online Cloud/Server Services : For 1 Years on Cloud Server
6. Live Training at College : For 2 Days for 4 Hours per Day
7. After Sale Training support : By Online Zoom Meeting or By Whatsapp Video Call

## EXPERIMENTS

1. To explain theory of Raspberry Board, Arduino Board, Raspberry and Pico Board and all sensors and Parts
2. To measure all Sensors data using Arduino and Raspberry and Pico Board

3. To send Sensors data from Transmitter Node to Base Receiver using Bluetooth Gateway
4. To send Sensors data from Transmitter Node to Base Receiver using BLE Gateway
5. To send Sensors data from Transmitter Node to Base Receiver using Zigbee Gateway
6. To send Sensors data from Transmitter Node to Base Receiver using Wifi Gateway
7. To send Sensors data from Transmitter Node to Base Receiver using LoRaWAN Gateway
8. To send Sensors data from Transmitter Node to Base Receiver using NB-IOT Gateway
9. To send Sensors data from Transmitter Node to Base Receiver using SigFox Gateway
10. To send Sensors data from Transmitter Node to Base Receiver using RF Gateway – 433 MHz

11. To send Sensors data to Mobile using GSM Gateway and display it on Mobile by SMS
12. To detect Sensors data Location using GPS Gateway and control it using LoRaWAN Server
13. To send Sensors data to Mobile and display them in Mobile App

14. To send Sensors data to Cloud and display them on Website page
15. To send Sensors data to MySQL Cloud Server and then store and export it in xls file
16. To send Sensors data to Local Host Server, store and export it in xls file
17. To send Sensors data to Local Host Server and Display on website html page
18. To send Sensors data from Transmitter Node to LoRaWAN Cloud Server
19. To export Sensors data from LoRaWAN Cloud Server to xls file

20. To analyse, monitor and Draw Graph of Sensors Data using Smart Dashboard Remotely
21. To make Smart Dashboard for Remote Monitoring and Analysis

# Contact us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