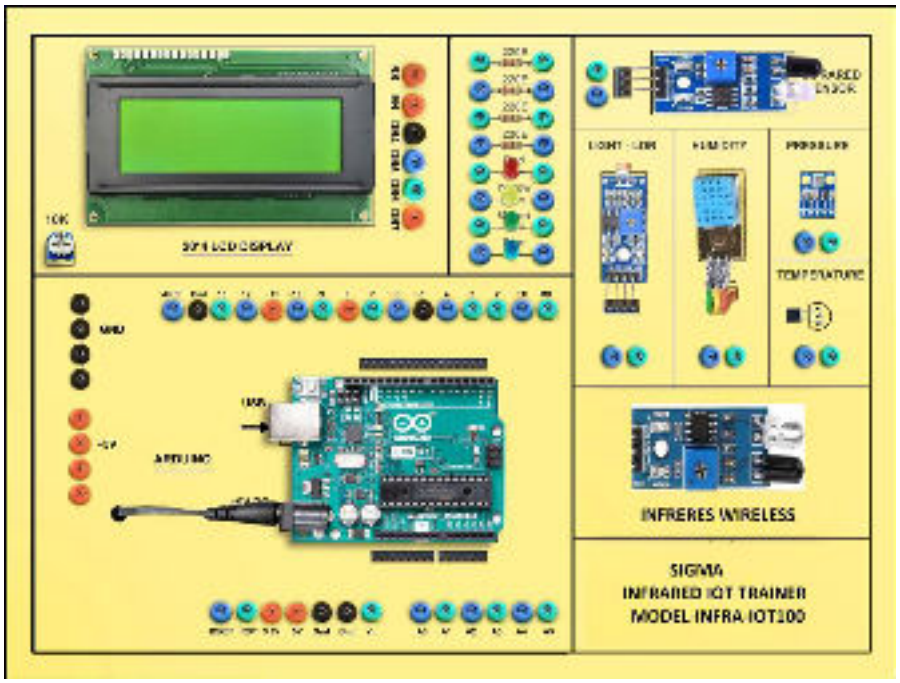
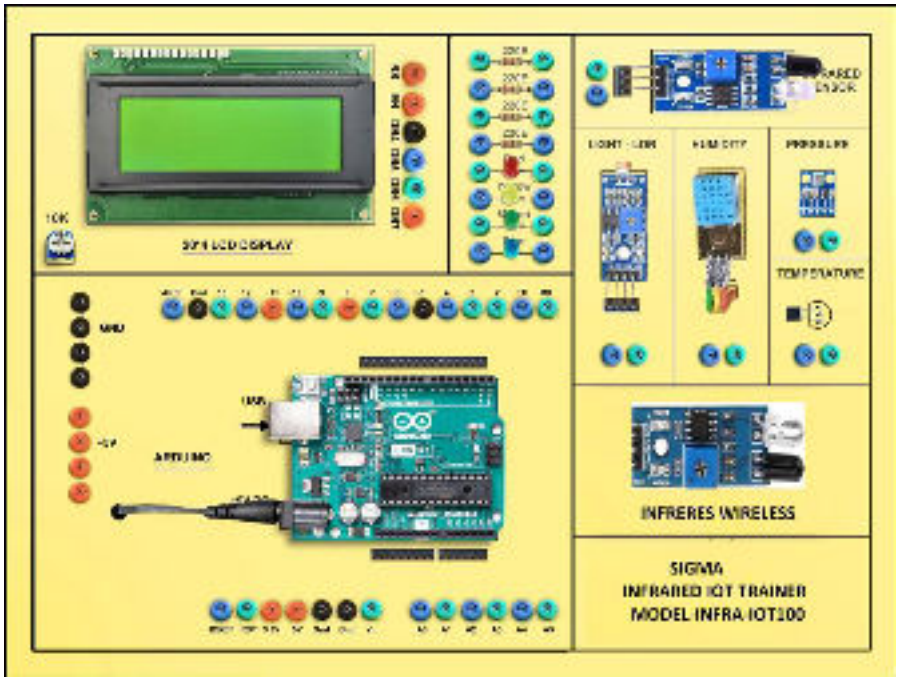
INFRARED WIRELESS TRANSMITTER RECEIVER IOT TRAINER

MODEL- INFRA-IOT100



Transmitter



Receiver

This trainer has been designed with a view to provide practical and experimental knowledge of Wireless Internet of Things (IOT) with Infrared Sensors with Arduino IOT Board.

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. Arduino Microcontroller Board

1. ATMega328P Processor - AVR CPU at up to 16 MHz
2. 8 Bit AVR® RISC Based microcontroller
3. Memory : 32KB Flash, 2KB SRAM, 1KB EEPROM
4. Power On Reset (POR)
5. 2 x 8 Bit Timer/Counter
6. 1 x 16-bit Timer/Counter
7. USART, SPI, I2C
8. PWM Channels : 6 Nos.
9. Digital Input / Output pins : 14 Nos (of which 6 provide PWM output)
10. 16 MHz Ceramic Resonator
11. USB Port
12. Power Jack – 9V DC, 1A

C. Sensors:

1. Air Humidity and Temperature DHT11
2. Air Quality - MQ135
3. Soil / Water Temperature Sensor - DS18B20
4. Leaf Wetness Sensor - Rain Detector Sensor
5. Soil Moisture Sensor
6. Ambient Light Sensor - LDR Light Sensor

D. Modules and Hardware:

1. Infrared Transmitter Module

1. IR LED (TSFF5210)
2. Package type: leaded
3. Dimensions : 5mm
4. Leads with stand-off
5. Peak wavelength: λp = 870 nm
6. High reliability
7. High radiant power
8. High radiant intensity
9. Angle of half intensity: = ± 10°
10. Low forward voltage
11. Suitable for high pulse current operation
12. High modulation bandwidth: fc = 24 MHz
13. Good spectral matching with Si photo detectors

2. Infrared Receiver Module

1. IR Photodiode (BPV10NF)
2. Package type: leaded
3. Dimensions : 5mm
4. Leads with stand-off
5. Radiant sensitive area (in mm2): 0.78
6. High radiant sensitivity
7. Daylight blocking filter matched with 870 nm to 890 nm emitters
8. High bandwidth: > 100 MHz at VR = 12 V
9. Fast response times
10. Angle of half sensitivity: ± 20°

11. 20 X 4 - LCD Display
12. LEDs and Different Resistors
13. 2 mm interconnection Sockets

E. Accessories

1. USB to Square USB Cable : 1 No
2. 2 mm Banana Jack Jumper – Connectors : 30 Nos
3. 9V, 1A Power Adaptor – Barrel 2.1mm : 1 No
4. Pen Drive - 16 GB with All Codes : 1 No
5. Printed Manual : 1 No.
6. Softcopy of Manual – On Pen Drive : 1 No
7. E-Books for IOT Subject – On Pen Drive : 10 Nos. in PDF Format
8. Mp4 Video for IOT Subject – On Pen Drive : 40 Nos

EXPERIMENTS

1. To understand theory and working of Arduino Board
2. To understand Operating System for Arduino Board
3. To understand Communication Protocols
4. To understand USB Interface for Arduino Board
5. To understand that how to connect 20 x 4 LCD Display to Arduino Board

6. To make LED blink
7. To connect LCD Display
8. To measure Humidity using Humidity - DHT11 Sensor
9. To measure Air Humidity and Temperature using DHT11 Sensor
10. To measure Air Quality using Air Quality Sensor
11. To measure Temperature of Soil using Soil Temperature Sensor - DS18B20
12. To measure wetness of Leaf using Leaf Wetness Sensor - Rain Detector Sensor
13. To measure Moisture of soil using Soil Moisture Sensor
14. To measure Ambient Light using LDR Light Sensor

15. To send Sensors data from Transmitter Node to Base Receiver using InfraRed Gateway

Contact us

Registered Office

SIGMA TRAINERS AND KITS
E-113, Jai Ambe Nagar,
Near Udgam School,
Drive-in Road,
Thaltej,
AHMEDABAD-380054. INDIA.

Factory

SIGMA TRAINERS AND KITS
B-6, Hindola Complex,
Below Nishan Medical Store,
Lad Society Road,
Near Vastrapur Lake,
AHMEDABAD-380015. INDIA.

Contact Person

Prof. D R Luhar – Director

Mobile : 9824001168

Whatsapp : 9824001168

Phones:

Office : +91-79-26852427

Factory : +91-79-26767512

+91-79-26767648

+91-79-26767649

E-Mails :

sales@sigmatrainers.com

drluhar@gmail.com