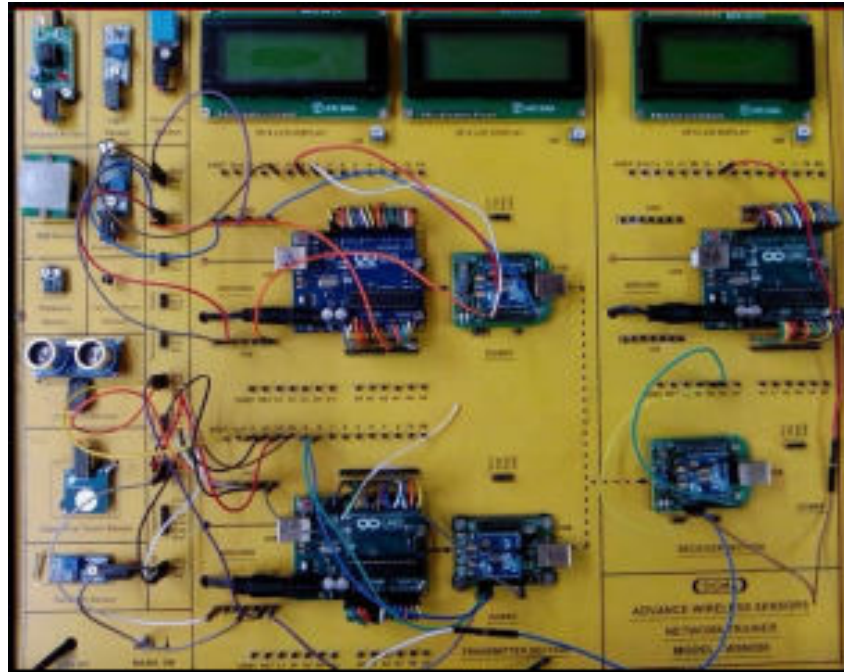**SIGMA**

WIRELESS SENSOR NETWORK TRAINER

MODEL-WSN100

SPECIFICATIONS

This trainer has been designed with a view to provide theoretical & practical knowledge of Wireless Sensor Network Trainer.

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 – 3 Nos.

1. Arduino Uno Microcontroller board based on the ATMEGA328P
2. 14 Digital Input / Output pins (of which 6 provide PWM output)
3. 16 MHz Ceramic Resonator
4. USB Port
5. Power Jack – 9V DC, 1A

C. Modules and Hardware

1. Zigbee Transmitter Node   : 2 Nos.
2. Zigbee Receiver Node   : 1 No.
3. Temperature Sensor   : 1 No.
4. Audio Sensor - Condenser Mike   : 1 No.
5. Humidity Sensor   : 1 No.
6. Pressure Sensor   : 1 No.
7. Light - IL luminance Sensor   : 1 No.
8. Infrared Sensor   : 1 No.
9. Capacitive Touch Sensor   : 1 No.
10. Flex Sensor   : 1 No.
11. PIR - Passive Infrared Sensor   : 1 No.
12. Solar Sensor   : 1 No.

D. Accessories

1. USB to Micro USB Cable   : 1 No
2. Ethernet Cable RJ45   : 1 No
3. HDMI to Micro HDMI Cable   : 1 No
4. VGA 15 pin Male to HDMI Converter   : 1 No
5. 2 mm Banana Jack Jumper – Connectors   : 30 Nos
6. 5V, 2A Micro USB Power Adaptor   : 1 No
7. Pen Drive - 16 GB with All Codes   : 1 No
8. Printed Manual   : 1 No
9. Softcopy of Manual – On Pen Drive   : 1 No
10. E-Books for IOT Subject – On Pen Drive   : 10 Nos. in PDF Format
11. Mp4 Video for IOT Subject – On Pen Drive   : 40 Nos
12. Online Cloud/Server Services for 2 years on Our Sigma Server

EXPERIMENTS

1. To Study Theory and Block Diagram of Wireless Sensor Network
2. To Study Node Controller Boards
3. To Study Zigbee Wireless Transmitter Nodes
4. To Study Zigbee Wireless Router and Co-Ordinator
5. To Study different type of Sensors and their Output characteristics
6. To install and Connect different Sensors to Node Controller Boards
7. To install and Configure Node Controller Boards
8. To install and Configure Zigbee Wireless Transmitter Nodes
9. To install and Configure Zigbee Wireless Router and Co-Ordinator
10. To write a Program in C++ for programming of different types Nodes and Routers
11. To Start HyperTerminal and send and receive Sensors Data readings to Base Station
12. To understand different types of Protocols and Commands
13. To study Sensor controlling and Monitoring Software
14. To control Sensors using the PC Monitoring software
15. To Study and Configure different types of Topologies
16. To Cross over from Mesh Network to Internet Network
17. To make different Applications and Projects using Wireless Sensor Network
18. To demonstrate and understand different types of faults

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