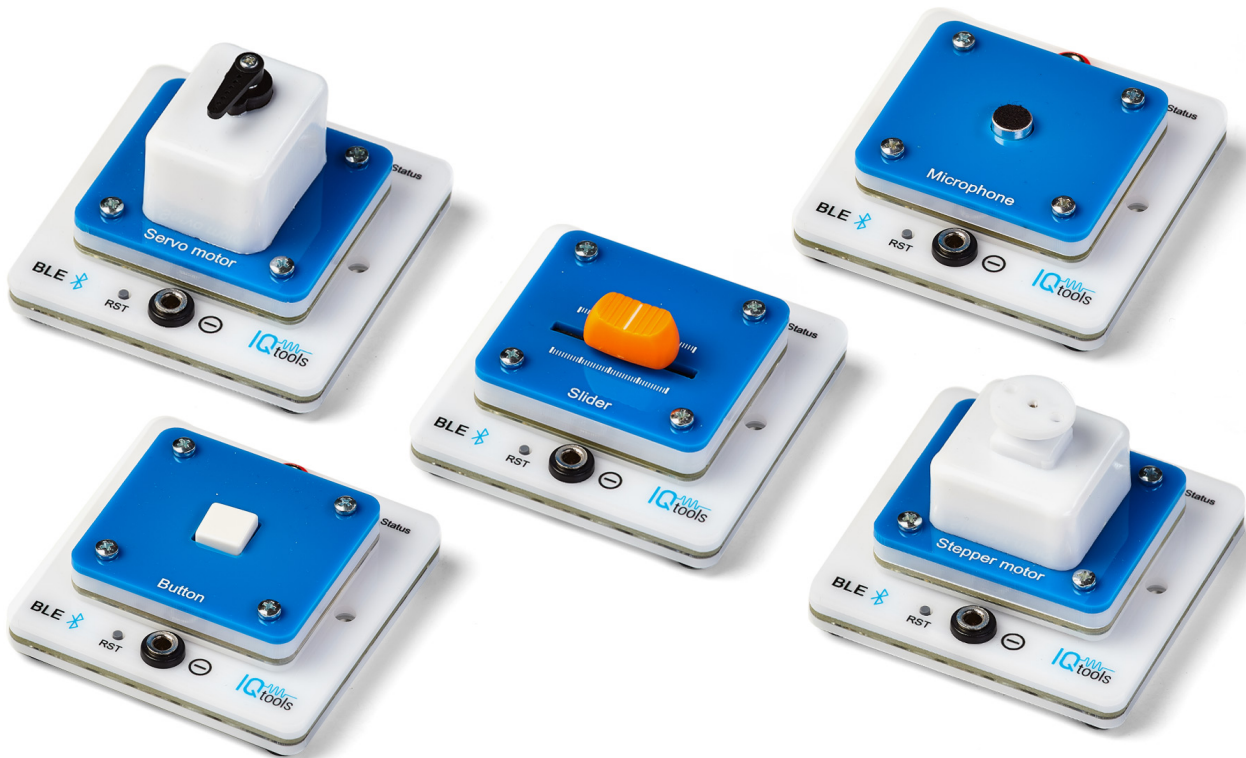


Laboratory kit "Internet of things IoT"



DESCRIPTION

This kit gives children the ability to work on Internet of things (IoT) hands-on experiments as a part of a supplementary education program.

The kit enables visual demonstration of devices interaction, using Bluetooth data transmission modules of low energy consumption BLE (Bluetooth Low Energy) and cloud data exchange technologies.

The modular architecture of the platform allows collecting data from sensors, controlling actuators and exchange data between them.

Simple layout of an electric circuit built on interchangeable modules is easy to understand both for students and teachers.

Each topic included in the curriculum has a theoretical part and detailed instructions for the experiment.

FUNCTIONAL FEATURES

- ✓ Laboratory kit modular design
- ✓ Reliably protected electric circuit, modules, and kit elements
- ✓ Theoretical materials to each topic
- ✓ Hands-on experiments step-by-step guide

SOFTWARE

- ✓ The software is developed in NI LabVIEW graphical programming environment.
- ✓ The software is intuitive and has user-friendly interface is designed for easy adoption.
- ✓ Graphical and digital representation of results

SPECIFICATIONS

Main modules

- ✓ Bluetooth BLE data transmission module - 3 pcs.
- ✓ Main Board (modules platform) - 1 pc.
- ✓ Light dimmer module - 1 pc.
- ✓ Switch module - 1 pc.
- ✓ Weather Station module - 1 pc.
- ✓ Microphone module- 1 pc.
- ✓ Buzzer module - 1 pc.
- ✓ Accelerometer module - 1 pc.
- ✓ Button module - 1 pc.
- ✓ RGB-LED module - 1 pc.
- ✓ LED module - 1 pc.
- ✓ Lamp module- 1 pc.
- ✓ Servo motor module - 1 pc.
- ✓ DC micro-motor module -1 pc.
- ✓ Light sensor module - 1 pc.
- ✓ Motion detector module -1 pc.
- ✓ OLED-display module -1 pc.

Auxiliary elements

- ✓ Bluetooth receiver transmitter for computer connection- 1 pc.
- ✓ Set of safe connecting wires - 1 pc.
- ✓ Power supply - 1 pc.

HANDS-ON EXPERIMENTS

- ✓ Air temperature measurement
- ✓ Atmospheric pressure measurement
- ✓ Air humidity measurement
- ✓ Determining the direction of the objects using an accelerometer
- ✓ Noise level measurement
- ✓ Detecting moving objects using a motion detector
- ✓ OLED-display control
- ✓ Buzzer control
- ✓ Servo motor control
- ✓ DC motor control
- ✓ RGB-LED control
- ✓ LED control
- ✓ Lamp control
- ✓ Push button event detection
- ✓ Switch position detection
- ✓ Dimmer position detection

Applications of IoT in Smart Homes

- ✓ Climate control at home
- ✓ Home lighting control
- ✓ Home security

Application of IoT in Security and Safety

- ✓ Personnel Access Level Management
- ✓ Fire alarm
- ✓ Monitoring the status of city buildings

Applications of IoT in Smart Cities

- ✓ Monitoring of noise pollution in a city
- ✓ City lighting management
- ✓ Meteo monitoring