A group of Internet of Things(IoT) Training system
YIoT-1000

IoT Training System

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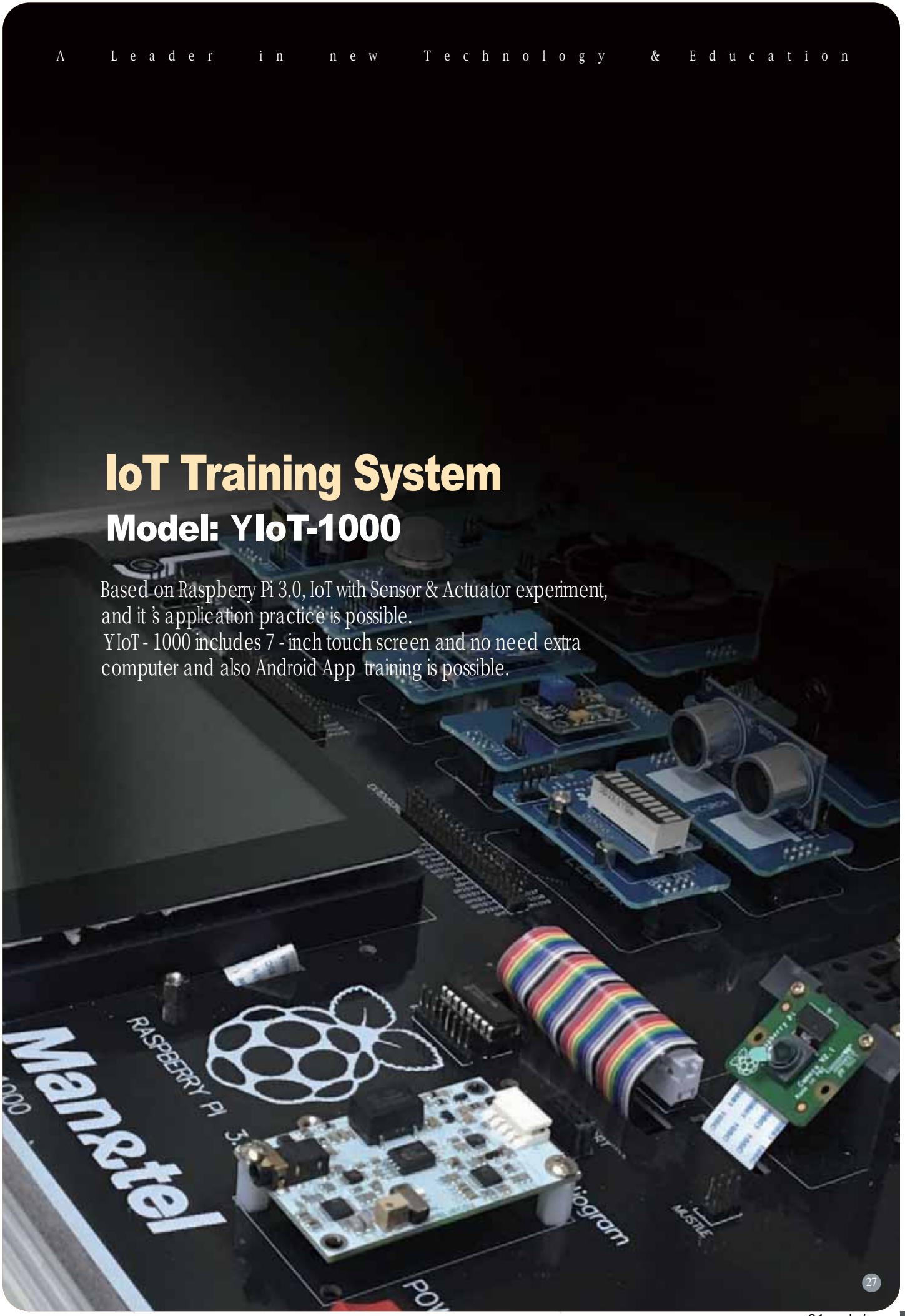
Model: YIoT-1000

Based on Raspberry Pi 3.0, IoT with Sensor & Actuator experiment, and it 's application practice is possible.
YIoT - 1000 includes 7 - inch touch screen and no need extra computer and also Android App training is possible.



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YIoT-1000 features

1. Raspberry PI 3.0 based Internet of Things Experimental Equipment
2. Sensor and actuator operation practice applying C Language
3. 5 different Smart IoT convergence system operation practice linked with sensor and actuator
4. Healthcare sensor(ECG, temperature, momentum, muscle) operation practice
5. Sensor and actuator operation practice with 7 inches touch screen
6. Checking data from server and real time streaming image through camera available
7. Practice of data output for ECG, momentum and muscle sensor utilizing serial chart.

YIoT-1000 Functions

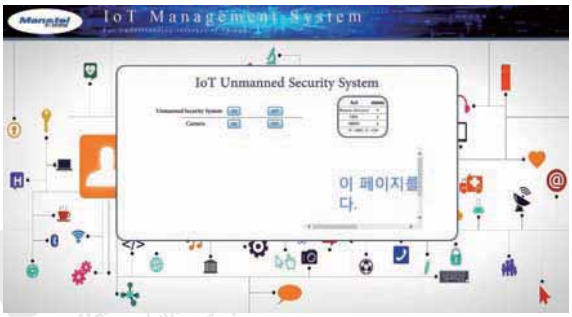
1. Understanding and practice of basic sensor
2. Understanding and practice of Beacon, medical and muscle sensor
3. Understanding and practice of actuator
4. Set up server, server demo practice and DB saving practice
5. Set up android studio and demo operation practice
6. Sensor and actuator practice applying WiFi & Bluetooth communication in the App of Android OS base
7. Data saving of Sensor and actuator in the server and real time streaming of image through camera
8. Test experiment linked with sensor and actuator

< Server login screen >

< App login screen >

<Server login screen>

< Smart IoT Farm Management System>

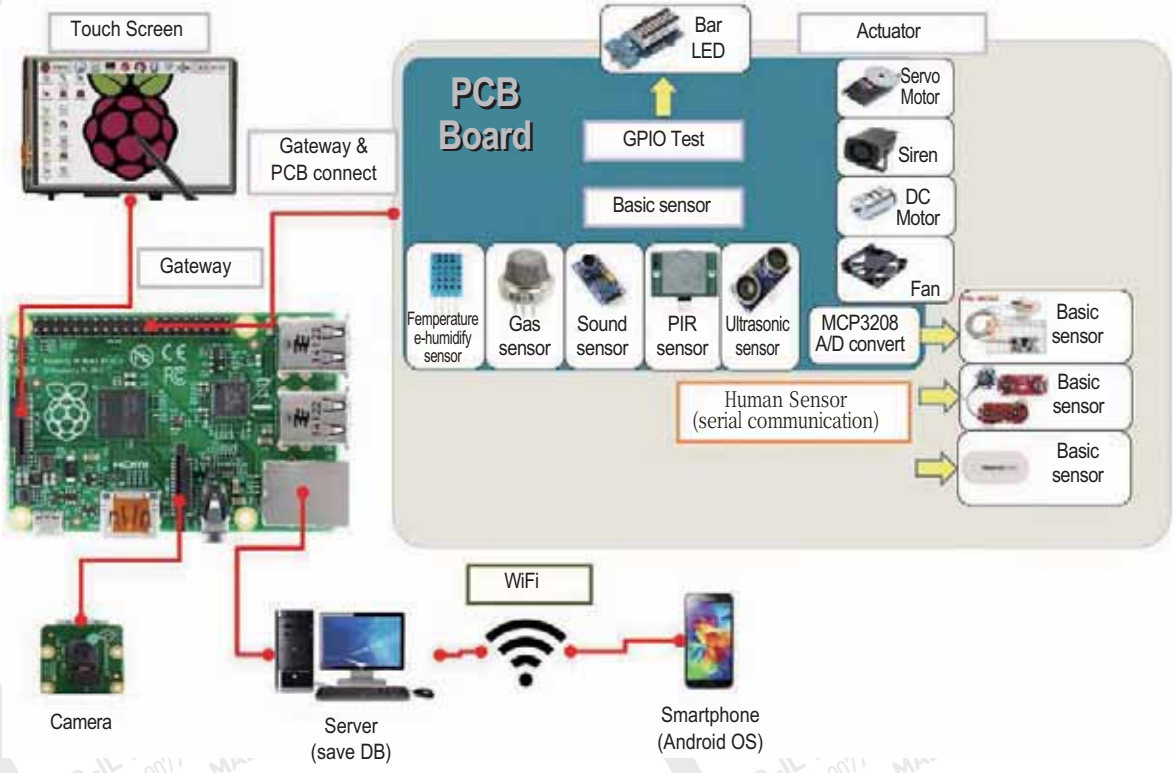


<Smart IoT Unmanned Security System>

< Smart IoT Fire Management System>

< Smart IoT Medical Management>

< Smart IoT Health Management System >



< YIoT-1000 Composition Diagram>

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YIoT-1000 Textbook

Chapter 1. IoT summary
Chapter 2. Hardware structure of IoT
Chapter 3. Configuration of Raspberry PI system
Chapter 4. Installation and running of software
Chapter 5. Installation and running Android studio
Chapter 6. GPIO control and running practice
Chapter 7. SPI demo operation practice
Chapter 8. Basic sensor and actuator operation practice
Chapter 9. Medical sensor and actuator operation practice
Chapter 10. IoT and camera system demo
Chapter 11. Data base basic practice
Chapter 12. PLC application control practice
Chapter 13. Server basic practice
Chapter 14. App demo operation practice
Chapter 15. Practice of login of App and result output.
Chapter 16. WiFi App demo operation practice
Chapter 17. IoT convergence system operation practice

YIoT-1000 composition

Items	Q'ty
Main body	1
Raspberry PI 3	1
Touch Screen	1
Basic sensor module	5
Medical sensor module	2
Beacon	1
Actuator	5
Rspberry PI camera module	1
Muscle sensor pad	1set
Adaptor	1
Ethernet cable	1
bag	1
1p cable	1set
textbook	1

YIoT-1000 Specification

Items	Spec
Raspberry PI 3	- CPU : Quad Core 64-bit ARM cortex A53 - Instruction set : ARMv8-A - GPU : 400MHz VideoCore IV - RAM : 1GB SDRAM - Ethernet : 10/100 - Wireless : 802.11n/Bluetooth 4.0 - Power : Micro USB socket 5V1, 2.5A
Touch Screen	7inch Touch screen - Size : 194x110x20mm(including Stand Off) - Visible screen : 155x86mm - Resolution : 800x480
Basic sensor	Temperature & humidity sensor - rated voltage : DC 3.5~5.5V - temperature range : 0-50 ℃ ± 2 ℃ - humidity range : 20-90% RH ± 5%
	Gas sensor - rated voltage : 5V - sensing range : 200~10000ppm - sensing gas : LPG, natural gas, city gas
	Sound sensor - rated voltage : 5V - signal amplitude: VCC/2 - sensing range : about 2meters
	PIR sensor - input power range : 5~20V - sensing range : max. 7m, max. 110。
	Ultra sound sensor - rated voltage : 5V - measuring distance : 2cm ~ 450cm - measuring angle : 15。
Medical sensor	ECM sensor - rated voltage : 4.5~5.5V - amplitude : 750(±2%) - filter set : 1) Notch : select and adjust 60Hz, 50Hz 2) HPF : 0.3Hz 3) LPF : 35Hz - output range : 0~3.3V - CMRR : over 60dB
	Muscle sensor - rated voltage : 2.9~5.7V - output power : 0~Vs(analog output)
Beacon	- wireless communication technology : Bluetooth smart 4.1 - rated temperature : -20~60 ℃ - accuracy of temperature and humidity : - 10℃<tA<85℃ (Typ ±0.3) 0-80% RH(Typ ±2) - battery : CR2450 Coin Battery
Actuator	LED bar - input voltage : 3.3~5.0V
	fan - supplying voltage : 12VDC - power consumption : 10Ma - RPM : 4500rpm - noise standard : 33dB-A - width : 50mm
	DC motor - rated power output : 3.0 ~ 6.0V - unloaded 1) speed : 18000rpm 2) current: : 0.8A - max. efficiency 1) speed : 15200rpm 2) current : 4.38A 3) torque : 117g · cm - stall torque : 771g · cm
	Siren - operation voltage : 12V - sound pressure level : 105dB @ 12V, 100cm
	Servo motor - rated voltage : 4.8~6.0V - torque : 45.82/56.93 oz-in. - speed : 0.21/0.16초/60 ° - rotation angle : 180 °
	Gripper - opening width : 152mm - mounting hole : 3.5mm
Raspberry PI camera module - resolution	- size : 23.86x25x9mm - resolution 1) picture : 3280 x 2464 (8-megapixel) 2) video : 1080p30, 720p60, 640x480p60/90
Power supplying device	Power supplying device : DC 5V / 2A Input power : 220Vac, 1A