“HOAP(©)-3” is a compact and light weight Humanoid Robot.
We added movable axis for the head and hands.
Also added are CCD cameras, a microphone, a speaker and LEDs to show expression.
Distance measuring sensor and a grasp force sensor enhances capabilities as an advanced research.
A Simulator, which allows prior verification of the operation of a program, is included as standard.
Easily connects with a PC, for use as a robot research tool in the areas of the movement, communication.
Speech recognition, speech synthesis, image recognition, and motion control are possible in the Wireless mode.

HOAP-3
(The standard configuration is the wired mode.)

Standard Features

- A compact system configuration which consists of the robot body, PC, and the power supply.
- Only 60cm, 9kg - Can be handled by one person. Easy development of motion control applications.
- Operating System of the PC is RT-Linux, software development is made easy due open source C/C++ language
- CCD cameras, microphone, speaker are all standard equipment. Ideal for communication research
- The USB interface for the internal LAN, lends for easy modification or addition of new actuators and sensors.
- Two way control for the wired and the wireless mode.
- Smooth motion made possible by current control mode.
- Begin immediately with use of the included sample motion program.

(*) HOAP : Humanoid for Open Architecture Platform

“HOAP” series was awarded
**Specification**

- **Robot Body**
  - Height: 60cm
  - Weight: 8.8 kg
  - Degree of freedom:
    - 6DOF/foot × 2
    - 5DOF/arm × 2
    - 1DOF/waist × 1
    - 1DOF/hand × 2
    - 3DOF/neck × 1
  - Total: 28DOF

- **Basic set**
  - Basic set | Contents
    - Robot Body (with standard case)
    - PC (FUJITSU FMVseries)
    - Power Supply
    - Hanging jig
    - Instruction Manual
    - Basic Data CD
    - Simulator CD

- **Option**
  - **Wireless Option**
    - Description | Specification
      - Battery | NiMH-24V, 1950mAh High-rate discharge
      - Charger | Input AC100V, Charge time about 1 hour
      - Wireless LAN | IEEE802.11g WirelessLAN
      - Controller | OS: RT-Linux
      - CPU | PentiumM 1.1GHz (equivalent)
      - Main memory | RAM 512MB
      - 1GB Compact Flash Memory

  - **Extension Option**
    - Description | Specification
      - TYPE-2 Motor Unit | Rated output 4.5W+Motor control board
      - TYPE-3 Motor Unit | Rated output 6W+Motor control board
      - TYPE-2 Motor | Rated output 4.5W
      - TYPE-3 Motor | Rated output 6W
      - Motor Control Board | Motor Control Board for HOAP
      - Sensor Board | Load sensor signal
      - USB HUB Board | 7 port USB-HUB

- **Sensors**
  - Joint angle sensor (without hands and neck)
    - Optical incremental encoder
    - Angle encoder resolution: 0.01deg/pulse or less
  - 3-Axis Acceleration Sensor
    - Range: ±2G
    - Sensitivity: 0.005G
  - 3-Axis Gyro Sensor
    - Range: ±60deg/s
    - Sensitivity: 0.25deg/s
  - Foot sensor
    - Force Sensing Resistor | 4ch/foot × 2
  - Distance measuring sensor
    - Infrared rays | head×1
  - Grasp force sensor
    - Force Sensing Resistor | 1/hand × 2
  - **Camera**
    - CCD×2 (asynchronous)
    - VGA 30fps
  - **Sound**
    - Input: Microphone × 1
    - Output: Speaker × 1
  - **LED**
    - 4point/eye × 2
  - Extention port USB port: 4port
  - Communication I/F USB 1.0 conformity, 12Mbps
  - Control Cyclcms
  - Control mode: Position control, Current control
  - Control firmware re writable (note 1)

- **Control PC**
  - OS: RT-Linux
  - CPU: Equivalent Pentium IV

- **Power Supply**
  - DC24V×10 A (240W) output
    - (Input AC100V)

*Please remember that specifications etc may be changed without notice.*

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