**FUJITSU**

MINIATURE HUMANOID ROBOT
HOAP-1

The HOAP-1 is a miniature and easy-to-handle humanoid robot.

It is easily connected a PC and can be used as an experimental tool for study of humanoid robot in the field of motion controls and communications with human. A simulator software attached helps to develop applications easily, safely, and efficiently.

※ **HOAP** : **H**umanoid for **O**pen **A**rchitecture **P**latform

Simulator Screen

USB

Commander PC
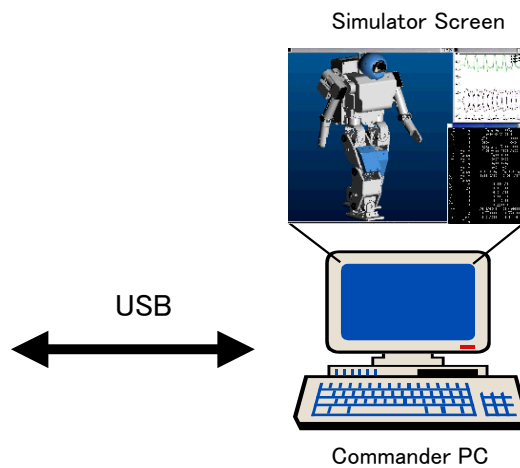
HOAP-1

※The appearance may change without prior notice.

FEATURES

The HOAP-1 system is composed of a robot body, a PC and a power unit.
The robot body is miniature and light so that it is suitable for development of humanoid robot applications in the field of motion controls.
It uses USB interfaces as a inner LAN. The control firmware is rewritable so that it is easy to add new actuators and sensors.
The HOAP-1 is controlled by an outer commandor PC so that it allows to make an advanced programming without the limitation of built-in CPU calculating performance.
The PC uses realtime OS, RT-Linux so that it allows to develop easily re-usable softwares in an open enviroment.

SPECIFICATIONS

Robot Body

Height	About 48 cm
Weight	About 6 kg, including 0.7kg of battery
Joint Mobility	6DOF foot x 2
	4DOF arm x 2
Sensor	Joint angle sensor

Sensor — Joint angle sensor
    Optical two-phase incremental encoder
    Angle encoder resolution :
      0.01 degree/pulse or less

3-axis accerelation sensor
    Sensing range : ± 2 G
    Resolution : 0.005 G or less (ADC resolution)

3-axis gyrosensor
    Sensor range : ± 60 deg/s
    Resolution : 0.1 deg/s or less (ADC resolution)

Foot load sensor : 4 ch/foot

Commander PC

OS	RT-Linux
CPU	Equivalent Pentium III 700MHz
Software	Basic simulator
(CD-R)	Poser and viewer
	Robot model(VRML)

Power Requirements

DC24V× 6.2 A (150W)

Basic System

Basic System — Robot body (note 1)
    Commander PC
    Power unit

Communication Interface	USB 1.1, 12Mbps
Control Cycle	1ms
Control Mode	Position/speed control changeable
	Control firmware rewritable (note 2)
Extension USB port of robot	8

Option

Option — Motor control board (extension)

Sensor board (extension)

DC Servo Motor (Type-1 Type-2   ype-3

Note 1) Basic robot set is controlled with a PC via cables.

Note 2) Firmware development environment is not included in the set.

* The specification may change without a proir notice.

FUJITSU AUTOMATION LIMITED