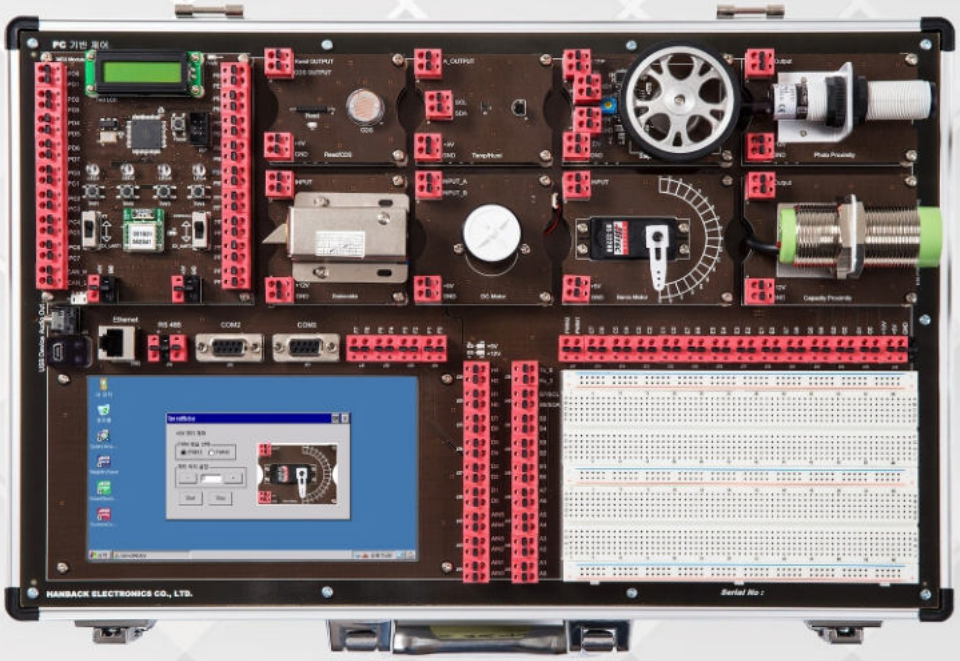
HBE-PC Base Control

PC Base Control

It is possible to control Sensors and Actuators directly by installing 32Bit high-performance processor, based on HMI(Human Machine Interface) controlling and operating automation device Controller on a screen users can recognize easily, and operate and sense lots of peripheral devices by connection with 8Bit processor.



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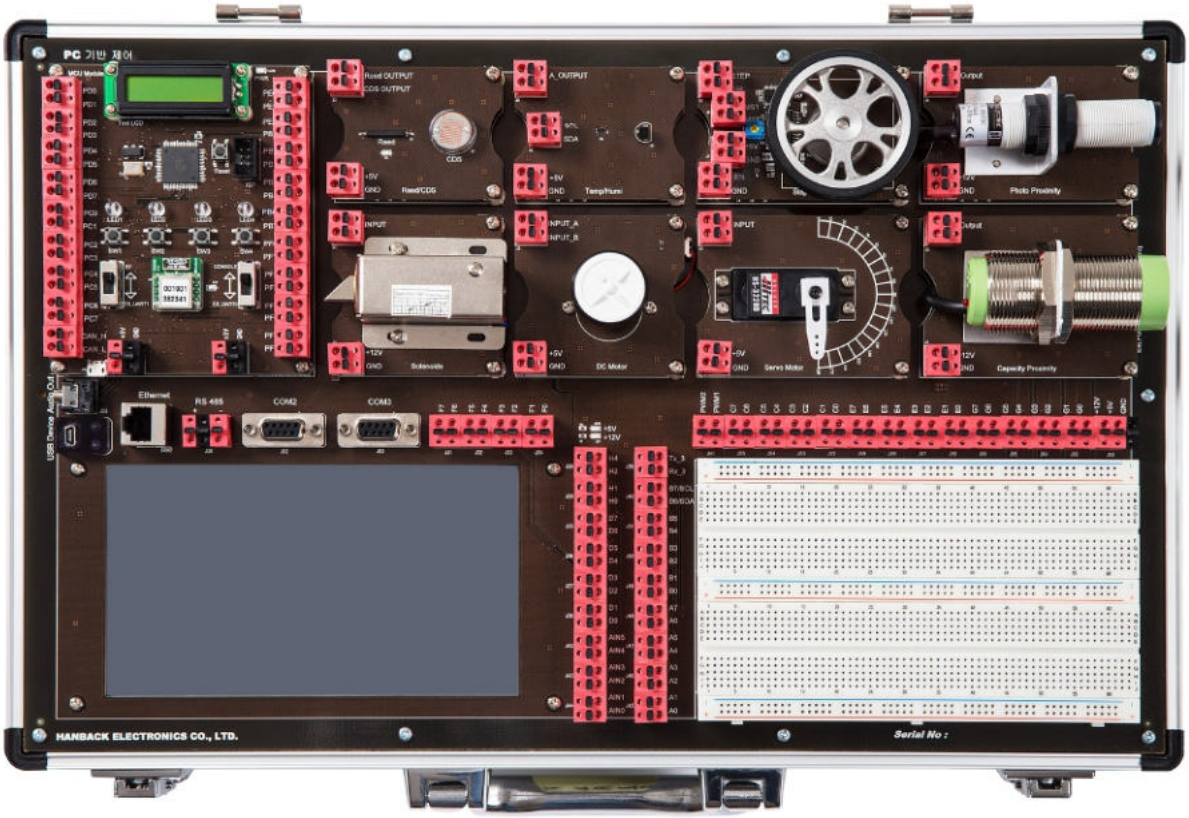

Human Machine Interface

Using Cortex A8 CPU Core 1GHz of high performance

Connecting with Heterogeneous Processor

Providing Development Environment for easy application program(Visual Studio 2008)

Providing 8 Sensors and Actuators as default

Connecting with industrial Sensors and Actuators

Providing simple User Interface

Introduction

It is possible to control Sensors and Actuators directly by installing 32Bit high-performance processor, based on HMI(Human Machine Interface) controlling and operating automation device Controller on a screen users can recognize easily, and operate and sense lots of peripheral devices by connection with 8Bit processor.

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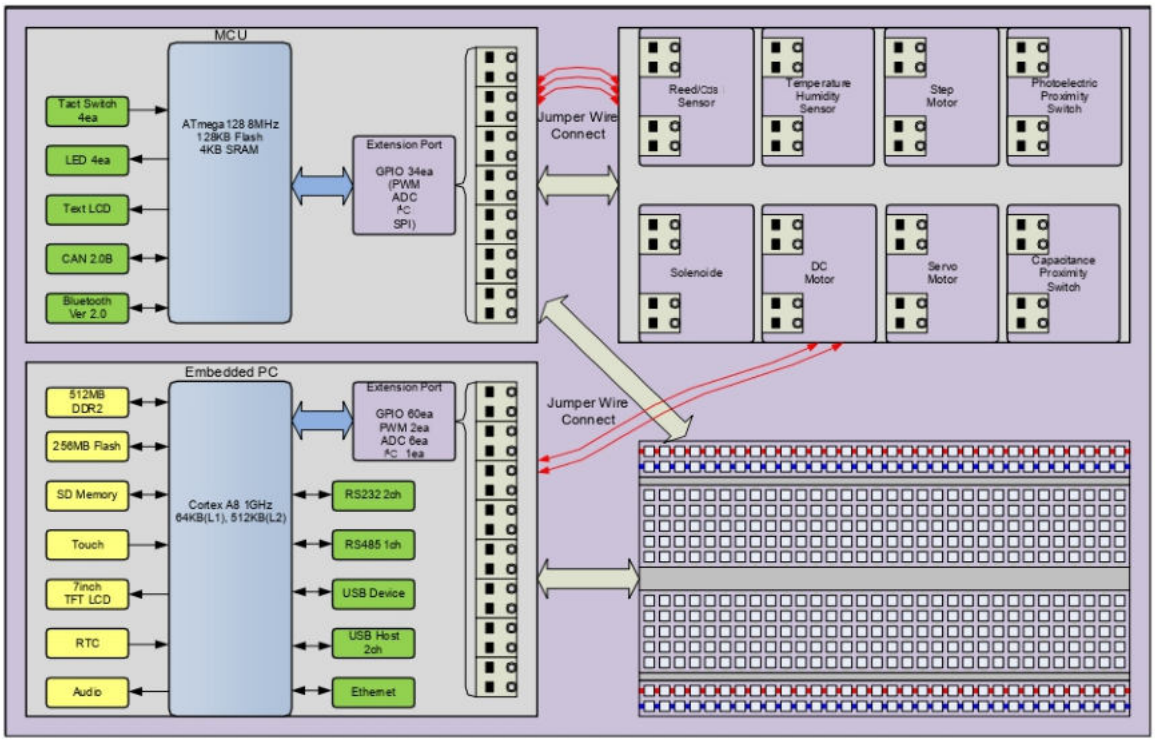
Features

- Enable to experiment lots of industrial sensors and devices, based on Embedded PC
- Experimented with wiring by Push Fixed Connector, enable to experiment and understand Hardware
- Enable to control peripheral devices by designing and extending Interface between system interfaces through heterogeneous processor
- Enable to design lots of circuits directly for connection by installing BreadBoard as default and connect with sensors and actua-tors installed as default
- Support of Library for easy programming of control components like Button, Timer, GPIO and Serial Communication
- Providing Extension port for easy hardware extension
- Enable to connect with Android System and Ardunio for application experiment
- Providing easy and convenient User Interface
- Extended Experiment by connection with MCU

Configuration and Names

• Block Diagram



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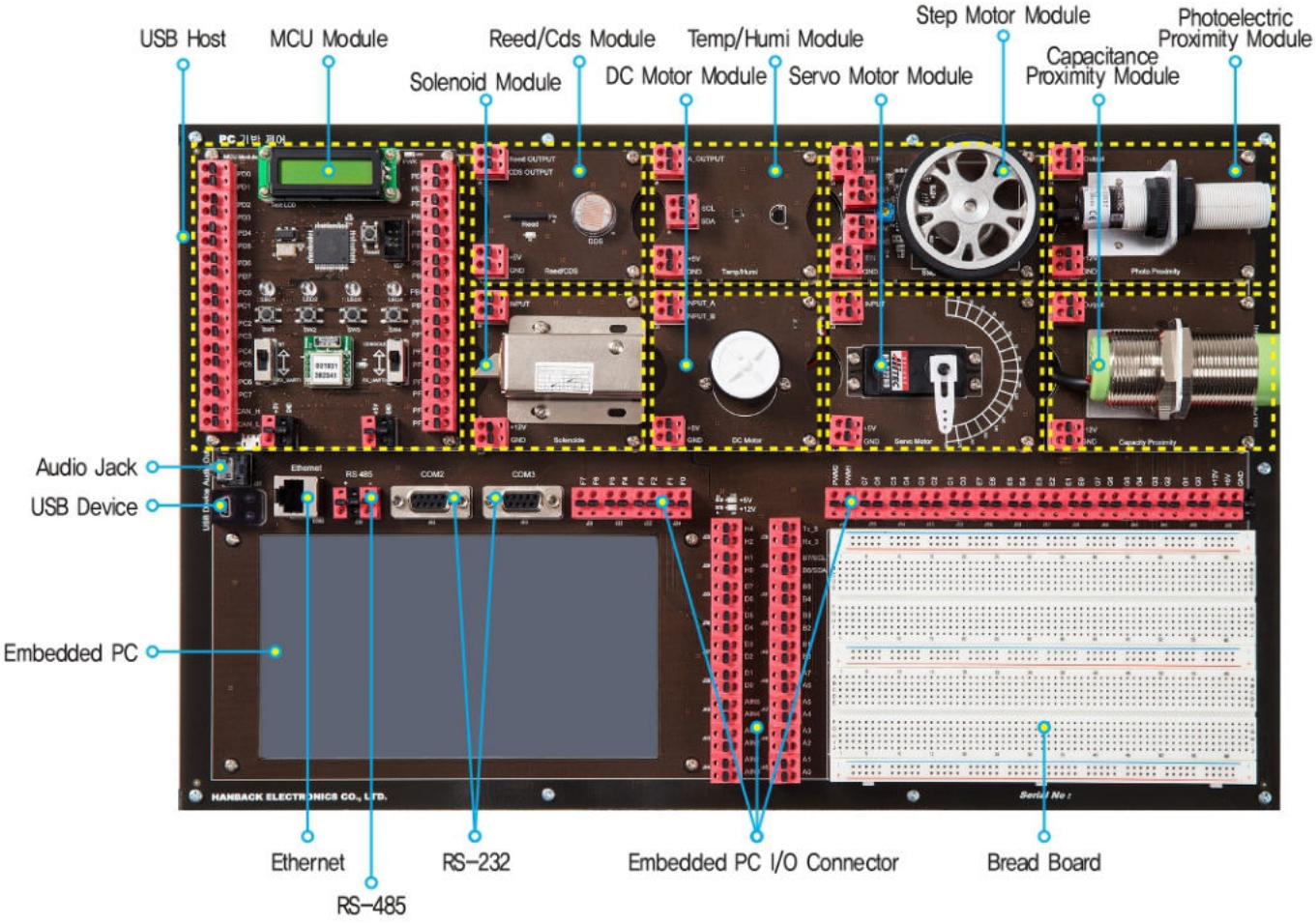

Specifications of Hardware

• Embedded PC

Module	Item	Description
	CPU	Cortex A8 CPU Core 1GHz
	CACHE	64KB(L1), 512KB(L2)
	RAM	512MB DDR2
	FLASH	NAND FLASH: 256MB
	SD MEMORY	Support of 4GB/SDHC max. 16GB
	Touch	Decompressed type(Resistive) - 4 wires
	LCD	7inch TFT Wide 800 x 480
	RTC	RTC embedded(replaceable Coin)
	AUDIO	Stereo Sound output(embedded Mono Speaker)
	Communication	RS232: 2CH, RS485: 1CH, TTL Level: 1CH
	USB	USB Device: 1CH(2.0), USB Host: 2CH(1.1)
	ETHERNET	100Mbps
	WLAN	USB Dongle Type(Option)
	Extension Port	GPIO 60EA, PWM 2EA, ADC 6EA, I²C 1EA
	Operating Voltage	+12V

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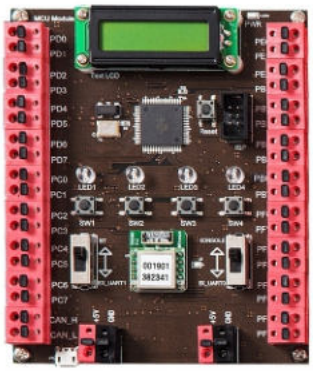
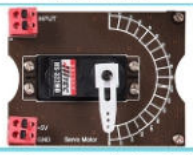
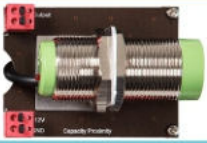
• MCU

Module	Item	Description
	CPU	ATmega128A Up to 8MIPS Throughput at 16MHz 128k Byte Flash, 4k Bytes Internal SRAM 4K Byte EEPROM
	Input Device	Tact Switch 4EA
	Output Device	5Pi LED 4EA
	Display	2x16 Text LCD 1EA
	CAN Controller	CAN V2.0B at 1Mb/s
	Bluetooth	Ver 2.0, Communication Distance 10m
	I/O Interface	34EA (Push Button Terminal Type)
	Operating Voltage	+5V
	Dimensions	117.8 x 97 (mm)

• Senosr and Acturator

Module	Item	Description
Solenoid	Method	Lock Style
	Current	650mA at 12V, 500mA at 9V
	Operating Voltage	+12V
	Dimensions	50.8 x 64 (mm)
Reed/Cds	Magnetic Sensor	Reed Switch
	illumination Sensor	Cds
	Operating Voltage	+5V
	Dimensions	60.96 x 64(mm)
Temperature/Humidity	Temperature Range	-40 ~ 125℃ (I²C Interface)
	Humidity Range	0 ~ 100 %RH (I²C Interface)
	Analog Temperature	-55 ~ 150℃ (ADC Interface)
	Operating Voltage	+5V
	Dimensions	50.8 x 64 (mm)
DC Motor	Load Speed	at 3.5V 110(RPM)
	No Load Speed	at 3.5V 120(RPM)
	Reduction Ratio	1/33
	Maximum Torque	700(gcm)
	Operating Voltage	+5V
	Dimensions	60.96 x 64 (mm)
Step Motor	Holding Torque	1.6(Kg.cm)
	Detent Torque	120(g.cm)
	Current	0.95(A)
	Operating Voltage	+5V
	Dimensions	50.8 x 80 (mm)
Servo Motor	Operating Speed	at 4.8V 0.19sec/60°
	Stall Torque	at 4.8V 42 oz/in (3.0Kg/cm)
	Control System	+ Pulse Width Control 1500usec Neutral
	Operating Voltage	+5V
	Dimensions	60.96 x 80 (mm)
Capacitance Proximity Switch	Detection distance	15mm ±10%
	Detected Object	50 x 50 x 1mm (Steel)
	Response Frequency	50Hz
	Operating Voltage	+12V
	Dimensions	60.96 x 80 (mm)

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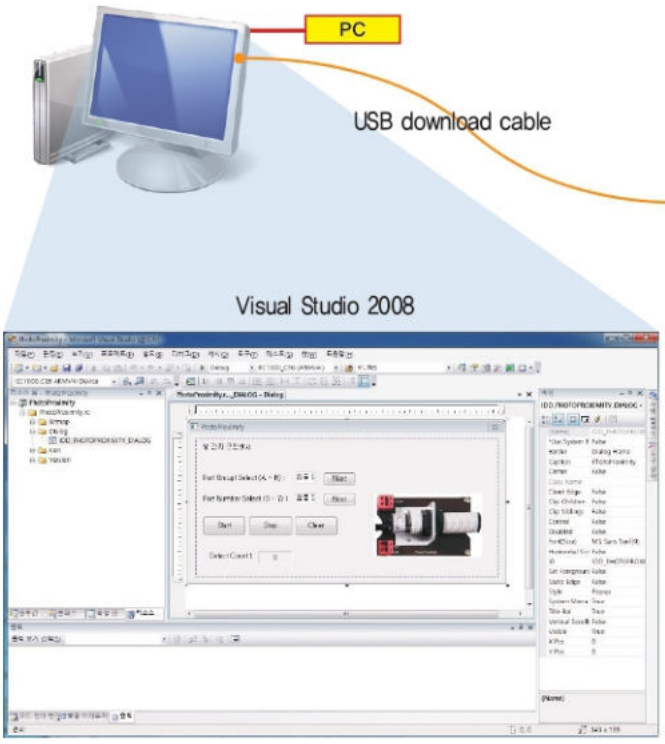
Module	Item	Description
Photoelectric Proximity Switch	Detection distance	10mm ±10%
	Detected Object	Opaque body
	Response Time	DC<2ms
	Operating Voltage	+12V
	Dimensions	50.8 x 80 (mm)

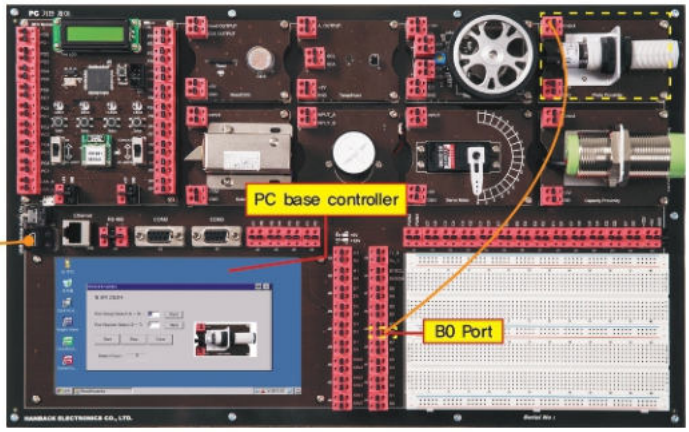
Specifications of Hardware

* This can be changed for Performance Improvement.

Windows CE 6.0	Standard	
Visual Studio 2008	Visual Basic	ATL
	Visual C#	COM & DCOM
	Visual C++(MFC/API)	ActiveSync
ATL		YES
COM & DCOM		YES
ActiveSync		YES
.NET Comapct Framework 2.0/3.5		YES
ADO CE		YES
SQL Mobile		YES
TCP/IP		YES
Direct 3D Mobile		YES
Direct Draw		YES
USB Flash Driver		YES
Font of Korean (Gullim)		YES

Development Environment





• Procedure of Experiment

1. Connect USB download cable.
2. Design a program on VS2008.
3. Connect PC based Controller with Device.
4. Download designed Program.
5. Check the operation of device.

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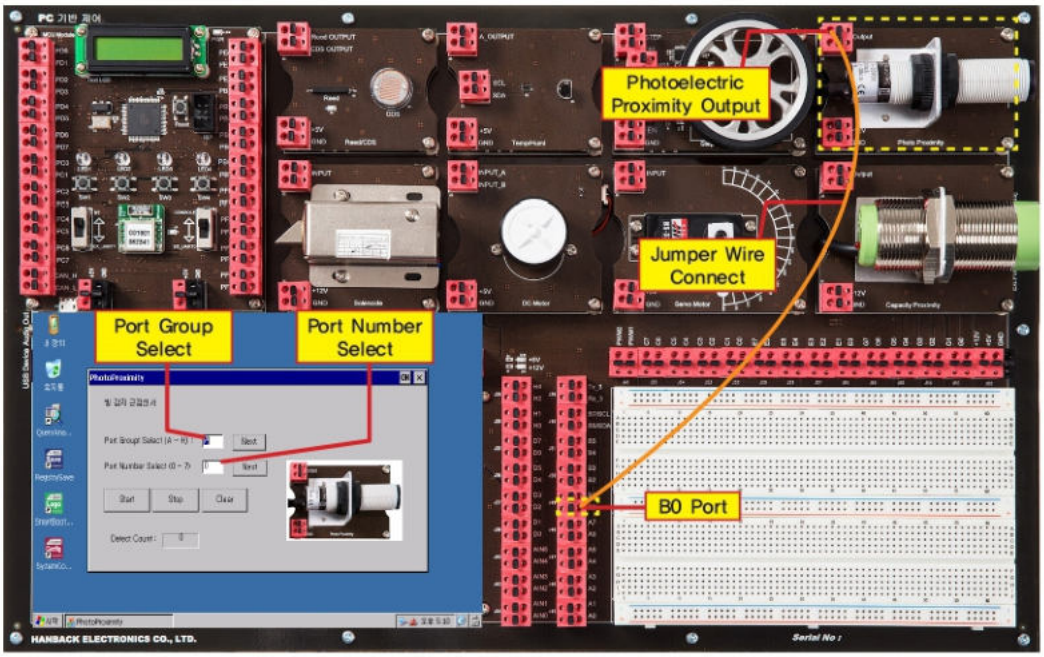
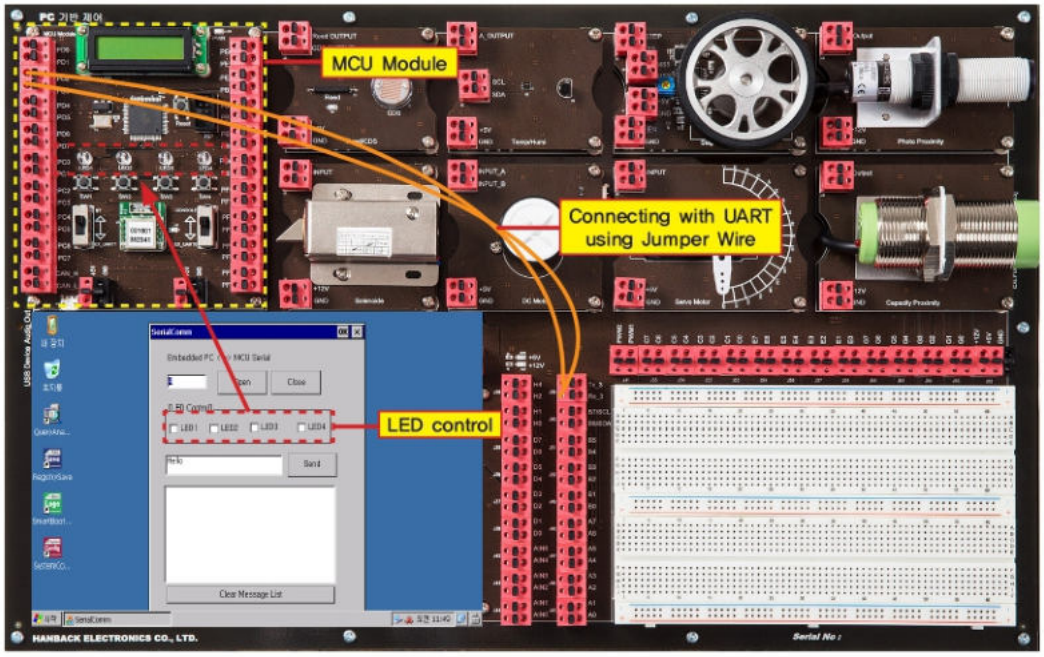
Operation Sample

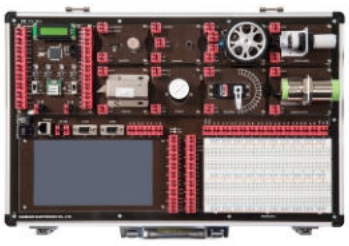
• Sample of Photoelectric Proximity Operation



• Sample of Connection Embedded PC with MCU



Product Configuration



HBE-PC Base Control 1EA

Mini To A type USB Cable 1EA

Power Cable 1EA

Micro to A Type USB Cable 1EA

User Guide book 1EA / Platform DVD 1EA

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Subject to Change

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