>>Light Emitting Diode

Test Equipment for Smart Lighting using LED

HBE-LED Lighting

- Smart Lighting implemented by integrating Sensor, LED lighting and Communication
- Communication Program Test using PLC, RS-485 and USN
- Understanding DMX512 protocol, Industry Standard, and Testing Program
- Various LED operated by using AC controller and DC controller
- Beautiful and various Images displayed by Contents LED

Introduction

Recently, environmental-friendly LED with Power efficiency higher than light bulbs due to Energy Conservation and Environmental regulations is increasing. HBE-LED-Lighting can test Implementation of Smart Lighting in which sensor and communications are integrated with using module Type LED actually used for Interior and Outdoor Lighting.

Features

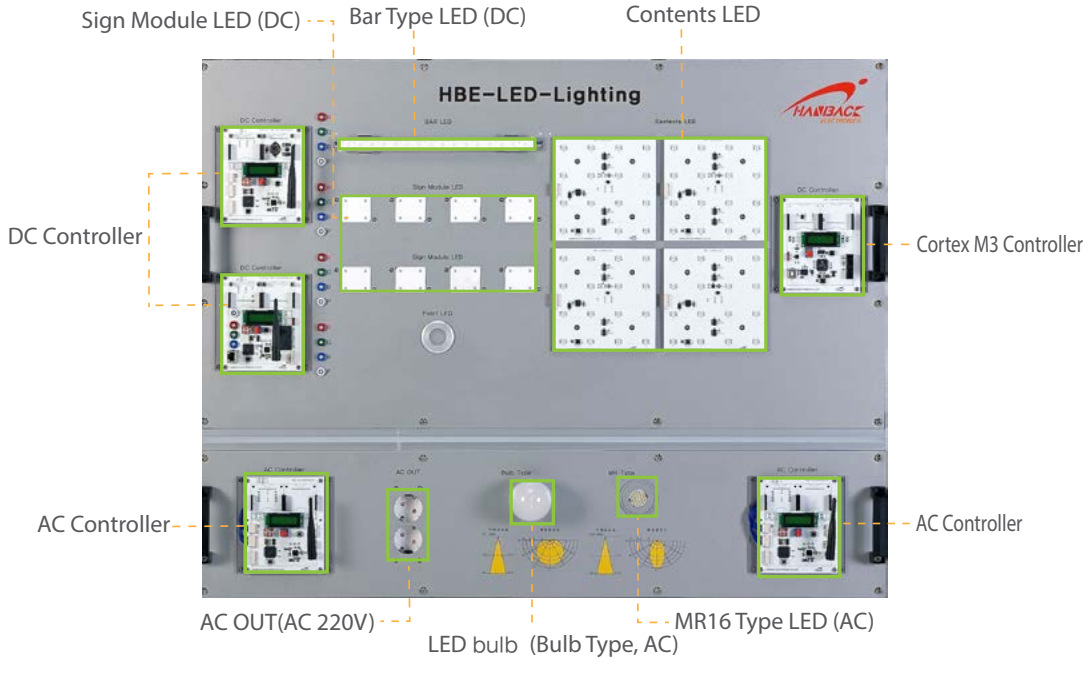
- Smart Lighting implemented by using 10 sensors
- Divided into Panel type and Bag type Various LEDs operated
- Various displays by Learning Controller
- Additionally installable of industry LED module
- Installable like Home Net(Power should be installed separately)
- Removable modularized Sensor

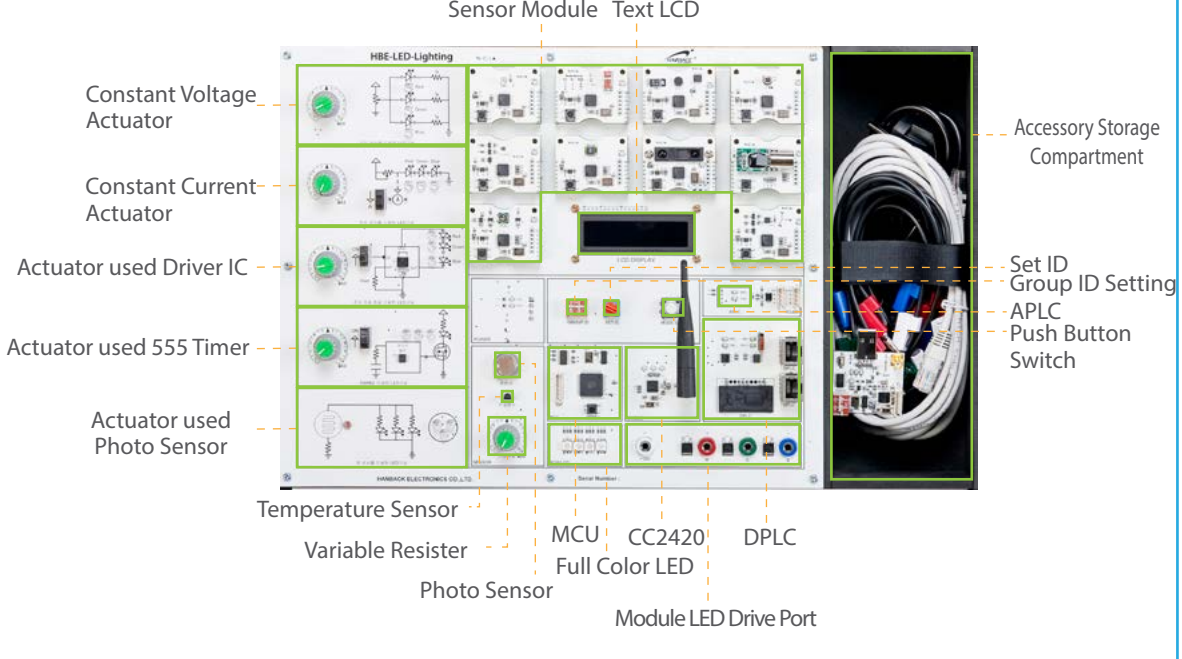
Configuration and Names

- HBE-LED Lighting(Bag type)

Configuration and Names

• HBE-LED Lighting Stand (Panel type)





Hardware Specification

· Main

Item	Discription
LED	Operated by Constant Voltage and Constant Current Operated by High Power Driver Operated by PWM Operated by Photo sensor Full Color LED operated by PWM DMX512 Receiver/Controller(30W per a channel)
Processor	ATmega128A
Peripheral	2Line 16Char Text LCD, Group ID Setting(5bit), Digit Switch(4bit), Push Button Switch 1EA Temperature Sensor(LM35), Variable Resister(10K), Photo Sensor(CdS)
Sensor	Temperature/Humidity module(ATmega8, I²C Interface), Illumination module (ATmega8, I²C Interface) Brightness module (ATmega8, I²C Interface), Barometer module (ATmega8, I²C Interface) Proximity module (ATmega8, I²C Interface), Mike module (ATmega8, I²C Interface) Color module (ATmega8, I²C Interface), Non-contact Temperature module (ATmega8, I²C Interface) Acceleration module (ATmega8, I²C Interface), Photo TR module (ATmega8, I²C Interface)
Communication	USN(CC2420, IEEE802.15.4 Compliant), RS485(SN75176BD), PLC(DPLC : 9600bps, APLC : 4800bps)
Power	Input : 85~264VAC, 47~63Hz, Output: 5V/6A, 12V/2A

· Controller

Item	Discription
DC Controller	
LED	DMX512 Receiver/Controller (30W per a channel)
Processor	ATmega128A
Sensor	Available of 2 sensor modules together(I²C)
Peripheral	2Line 16Char Text LCD, Group ID Setting(5bit), Digit Switch(4bit), Push Button Switch 1EA
Communication	USN(CC2420, IEEE802.15.4 Compliant), RS485(SN75176BD), DMX512 Receiver/Transmitter DPLC : 9600bps
Power	+12V
AC Controller	
Processor	ATmega128A
Sensor	Available of 2 sensor modules together(I²C)
Peripheral	2Line 16Char Text LCD, Group ID Setting(5bit), Digit Switch(4bit), Push Button Switch 1EA, Dimming Control
Communication	USN(CC2420, IEEE802.15.4 Compliant), RS485(SN75176BD), APLC : 4800bps
Power	+12V
Cortex M3 Controller	
Processor	LM3S8962(Cortex™-M3)
Memory	16Mbit, Serial Flash Memory
Sensor	Available of 2 sensor modules together (I²C)
Communication	RS485(SN75176BD), Serial to USB 1Port Option : USN(CC2420, IEEE802.15.4 Compliant)
Power	+5V
Power for Equipment	Input : 85~264VAC, 47~63Hz, Output: 5V/6A, 12V/2A

Hardware Specification

· AC / DC LED

Item	Discription	
DC LED		
Type	BAR Type	Sign Module Type
Power Consumption	DC 12V/4.8W	DC 12V/10W
Dimension	269(L) X 18(W) X 8(H)	35(L) X 35(W) X 10(H), 2x4 Array
LED	5050 LED X 16EA (Full Color LED)	5050 LED 4EA(Full Color LED)
Display	16,772,216 color	16,772,216 color
Type	Point LED	Contents LED
Power Consumption	12V/1W	5V/8W
Dimension	Ø45 X 38	140(L) X 140(W), 2x2 Array
LED	5050 LED 3EA(Full Color LED)	5050 LED 16EA(Full Color LED)
Display	16,772,216 color	16,772,216 color
AC LED		
Type	MR 16 Type	Bulb Type
Power Consumption	4W	8W
Input Voltage	AC/DC 12V	AC 220V
Light Efficiency(lm/W)	Warm White(42)	75
Speed of Light(lm)	Warm White(168)	Warm White(530)
Temperature of Color(K)	Warm White(3000)	Warm White(3000)
Angle of Beam	60˚	140˚
Life	30,000	40,000

· Configuration

HBE-LED Lighting(Bag Type)		HBE-LED Lighting Stand(Panel Type)	
Controller Module	AC/DC LED Module	Controller Module	AC/DC LED Module
Main	Bar Type LED 1EA (Array 1 x 16)	Main	Bar Type LED 1EA (Array 1 x 16)
DC Controller 1EA	Sign Module LED 1 x 4 1Set	DC Controller 2EA	Sign Module LED 1 x 4 2Set
AC Controller 1EA	Point LED 1EA	AC Controller 2EA	Point LED 1EA
Cortex M3 Controller 1EA	Contents LED 2 x 2 Array (4 x 4 LED)	Cortex M3 Controller 1EA	Contents LED 2 x 2 Array (4 x 4 LED)
	MR16 Type 1EA		MR16 Type 1EA
			Bulb Type 1EA

※ Specifications can be changed without notice

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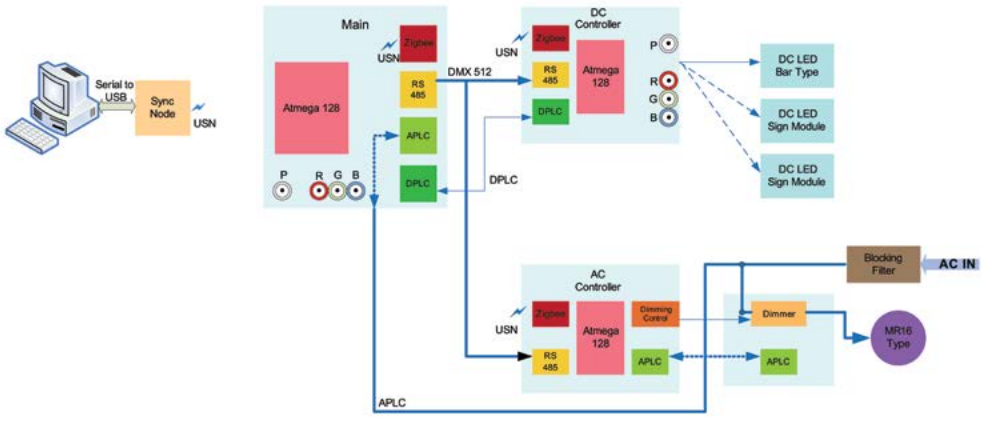
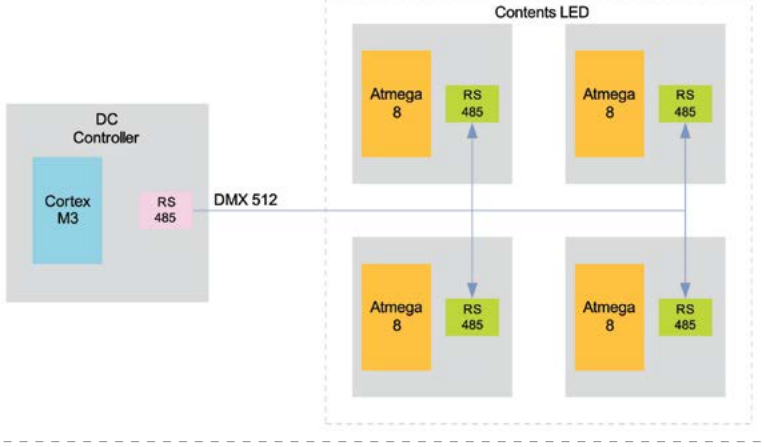
>>HBE-LED Lighting

Communication

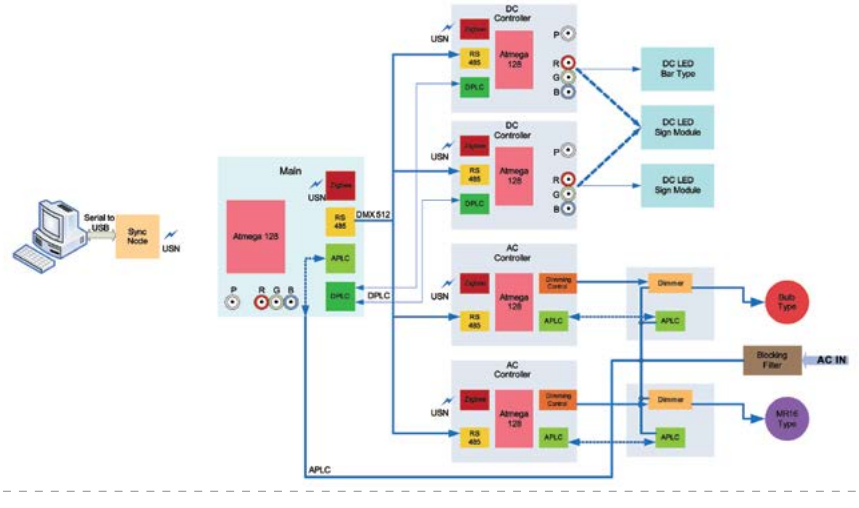
- HBE-LED Lighting (Bag type)



- Contents LED



- HBE-LED Lighting Stand(Panel type)



Software Specification

- Test by Chapters, LED color display wanted, Test by selecting Media(USN, DMX512, PLC), Implementation of Contents using LED, Intuitive Display of selected Sensor and Lighting control using Controller with sample files.
- Provides ZigbeX Studio™

Main screen

DC Controller screen

AC Controller screen

Contents LED screen

Contents

Components

· HBE-LED Lighting Stand (Panel type)

HBE-LED Lighting Stand

User's Manual and CD

Sink Node

Power cable

AVR-ISP

USB cable

· HBE-LED Lighting (Bag type)

HBE-LED Lighting

User's Manual and CD

Sink Node

Power cable

AVR-ISP

USB cable