

# BASIC LED TEST & APPLICATION TRAINER

Green-LED

## Platform for LED basic test and LED application test

*Recently Interest in LED technology has been increased in Light and Display areas as new technology trend. This technology is environment friendly so this has been recognized as a leader of green growth. LED lighting technology using LED element has lower power consumption and longer life than existing one and substitutes the present lighting market.*

*Green-LED is a platform to experience LED new technology and test LED application with various LED configurations and the specific program. It is possible to educate various LED technologies from basic test to application test.*

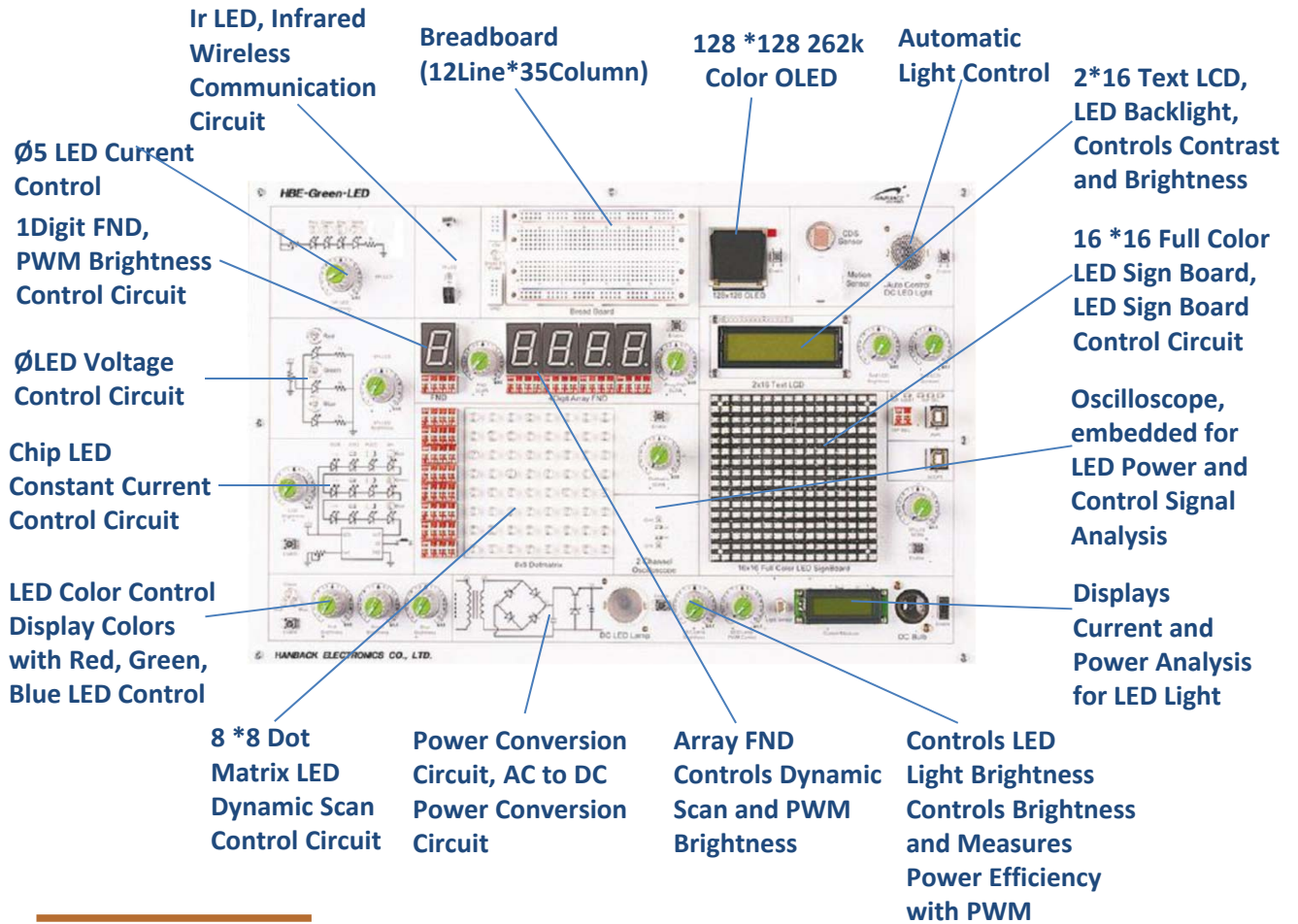


- Integrated Test Platform for 12 types LEDs and its applications
- Makes Up Education Themes for applications of LED principle, LED light and Display
- Provides LED light Control Algorithm and Control Program
- Power Control Test for LED operation
- Includes Oscilloscope to analyze the control signal and waveforms
- Provides Specific Program for functional Signal Processing and Application Test

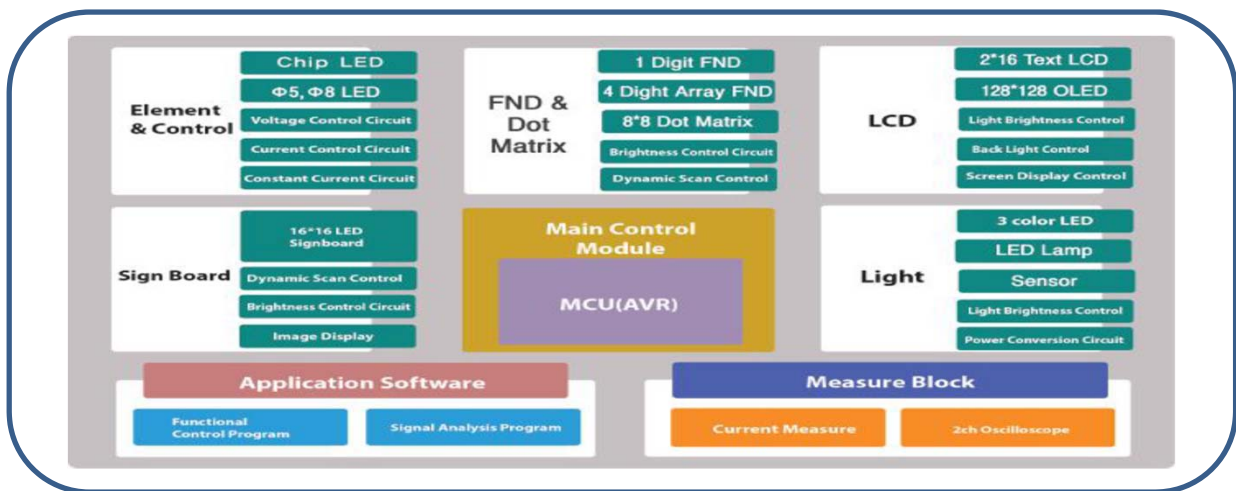
### Features

- It is possible to compare and analyze various elements and application parts for LED in one product and also to control each function without any Software and Program to control LED.
- Creating functional control signals and changing operation data differently through connecting with test PC, LED operation test is available.
- 2ch Oscilloscope is embedded for Power and Control Signal analysis and also Breadboard is embedded for LED characteristic test and Part error verification.
- Separate program port is provided for changing program codes of embedded Microcontroller in order to control advanced functions.
- Basic sample and PC application contents are provided for various basic tests and application tests.

Configuration and Names



Block Diagram



# Technical Specification

## ▪ Hardware Specifications

Item	Descriptions		
Display LED	Chip LED	Size : 1608, 2012, 3216, 3528 Color : Red, Green, Blue	Realizes Constant Voltage, Control Circuit, Controls Brightness
	DIP LED	Size: $\varnothing 5$ , $\varnothing 8$ Color : Red, Green, Blue, White	Realizes PWM control Realizes Dynamic Scan control Controls Brightness
	FND	1 Digit 7-Segment, Red 4 Digit Array 7-Segment, Green	Realizes PWM control Realizes Dynamic Scan control Controls Brightness
	Dot Matrix LED	8 Column*8 Line Dot Matrix Red	Realizes PWM control Realizes Dynamic Scan control Controls Brightness
Communication LED	Ir LED	Transmit 1EA Receive 1EA	Realizes Wireless Infrared Communication Transmits/Receives Data
LED Backlight	Text LCD	2 * 16 Text LCD White LED Back Light used	Realizes Contrast Control of Character Display
OLED	OLED	128 * 128 262K Color OLED	Displays Color Figure and Image
Lamp	LED Lamp	3W, White LED Lamp 2EA	Realizes Manual and Automatic Brightness Control
Sign Board	LED Sign Board	16 * 16 Full Color LED Sign Board Module	Realizes LED Sign Board Control
Display	Text LCD	Monitoring Current and Power	Displays Figure and Image
Sensor	CdS	$\varnothing 12$ CdS Sensor	LED light Automatic
	Motion	Sensing Human Body	Control with Sensor
Scope	Oscilloscope	$\pm 15$ , 100K SPS, 2Ch	Analyzes Power and Voltage Control Signal
MCU	ATmega128	Max 16MHz, 5EA	Realizes Light Controller Design
Board	Breadboard	12 Line * 35 Column, Power Protection Circuit Embedded	Tests LED element Characteristic Tests LED element Error Check
Interface	USB	Serial to USB Interface	Transmits/Receives Data and Control Signal for LED control

## ▪ Software Specifications

Item	Descriptions
Specific Software for Green-LED	Provides the Menu for functional control of Hardware and the Menu for creating and transmitting Data of each display device
	Provides specific Oscilloscope Menu for analyzing the control signal and power

## Control Program



## Contents of Education

Contents of Education	
INTRODUCTION AND MANUFACTURING PROCESS OF LED	<ol style="list-style-type: none"> <li>1. Introduction to LED</li> <li>2. Manufacturing Process of LED element</li> </ol>
BASIC OF LED DISPLAY	<ol style="list-style-type: none"> <li>3. Equipment Configuration and Test Environment</li> <li>4. Microcontroller (AVR)</li> <li>5. Operation Principle and Driver Circuit of LED</li> <li>6. Turning LED on with MCU</li> <li>7. Making Color with Color LED</li> <li>8. Using FND</li> <li>9. Controlling Dotmatrix LED</li> <li>10. IR Communication</li> <li>11. LED BLU (Back light Unit)</li> </ol>
USING LED	<ol style="list-style-type: none"> <li>12. OLED</li> <li>13. LED Lighting</li> <li>14. LED lighting using Sensor</li> <li>15. LED Signboard</li> </ol>

## Components

