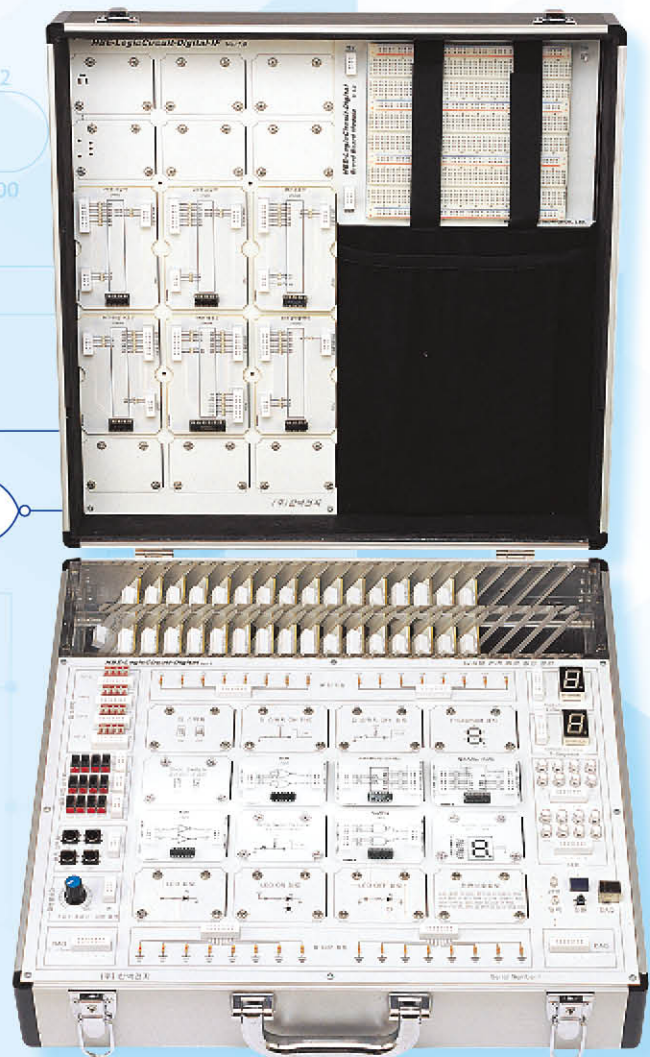
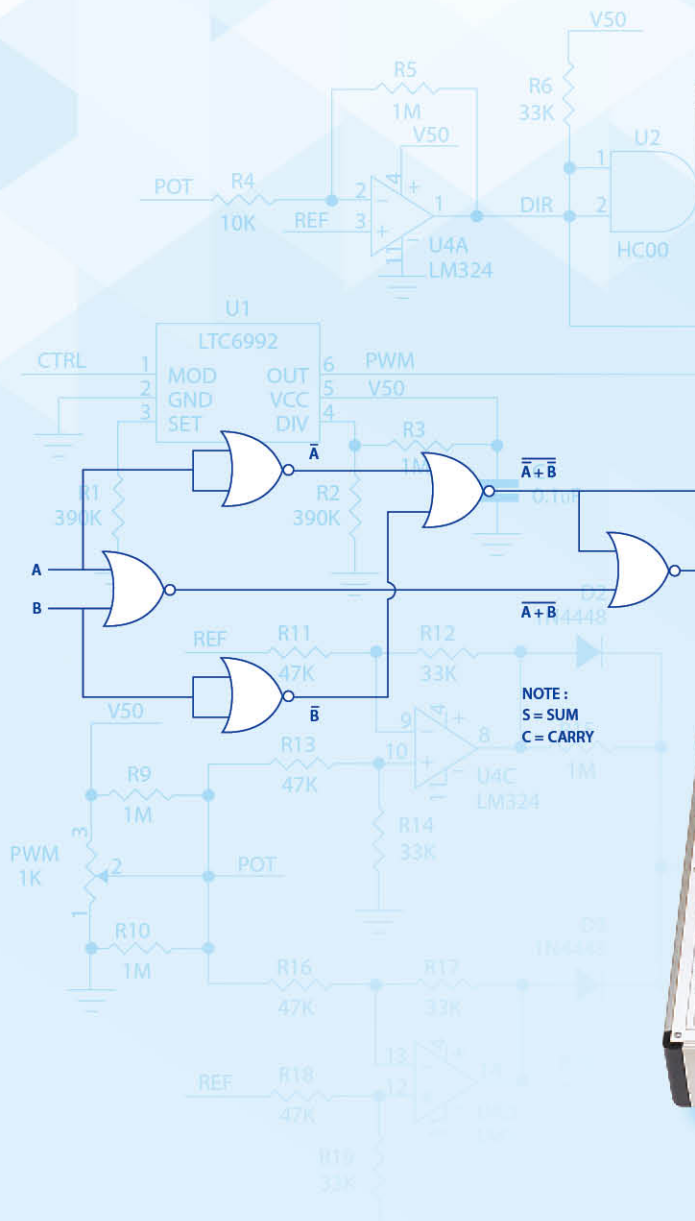


Digital Logic Circuit Lab Equipment

HBE - Logic Circuit Digital

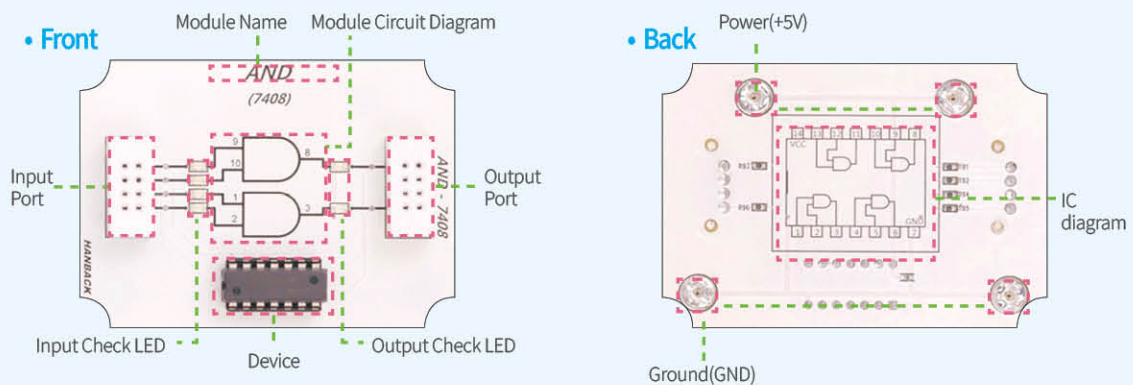
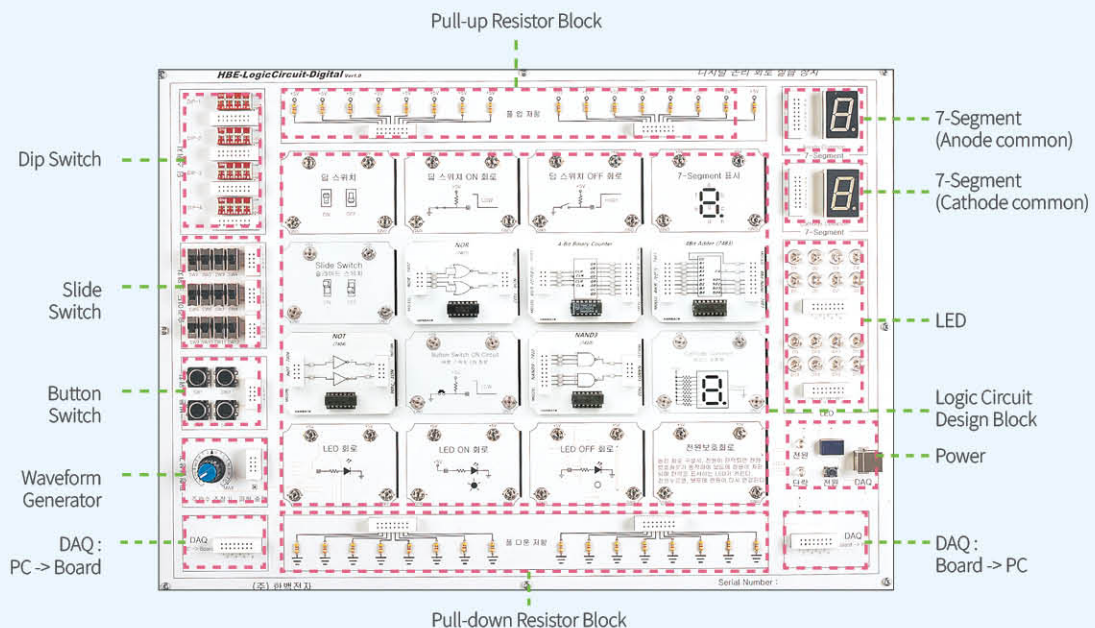


HBE-Logic Circuit Digital

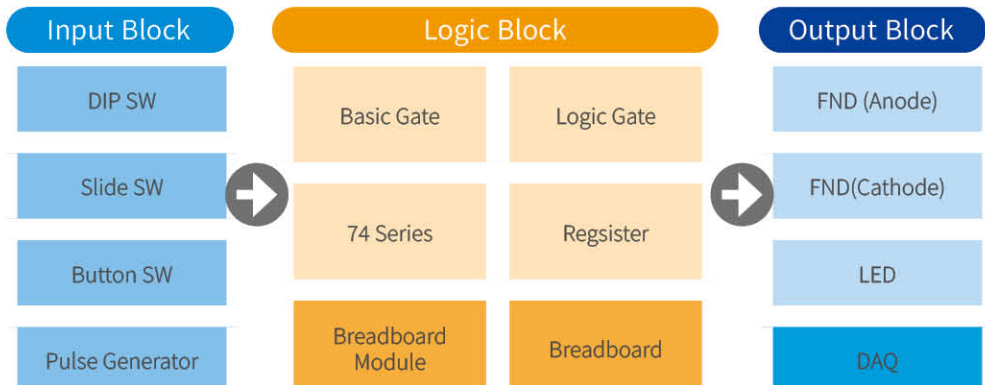
HANBACK ELECTRONICS

HBE-LogicCircuit Digital is Students based Platform for intuitive test, which they can test Digital Logic Circuit, a required subject for vocational training in secondary education(specialized course), for with interest. HBE-LogicCircuit Digital is composed of basic gate, logic gate, 74 series and register for digital logic circuit test. And we can do application test using Bread Board and Universal module with it.

- Possible for students to do all the tests in Government designated textbook intuitively.
- Gates are modularized for Logic Circuit test.
- Possible to see the data flow easily By mounting LED on I/O parts of all the modules.
- Possible to check Output signal and apply Input signal through PC.
- Possible to do application test Using Bread Board and Universal Board.
- Preparing for mistakes by students, Power off circuit is ready.



Block Diagram



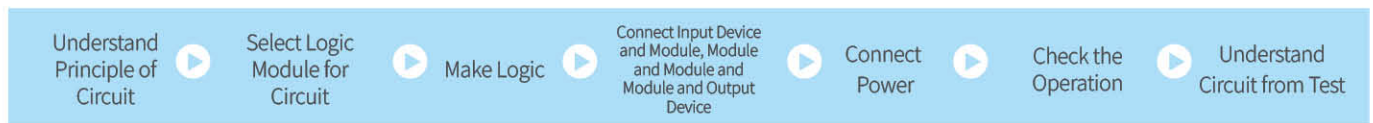
Specification

Base	Item	Description	
	Input	DIP Switch 8bit 4EA, Slide Switch 12EA, Button Switch 4EA, Pulse Generator 0.2~1kHz, Pull-up Resistor 16EA, Pull-down Resistor 16EA	
	Output	LED 16EA, FND-Anode Common 1EA, FND-Cathode Common 1EA	
	Logic Circuit Design Block	Logic Module Block(4 x 4) 16EA	
	DAQ	8bit Data Input/Output, USB communication	
	Power	Input AC 220V/Output DC +5V/4A	
	Board Size	450mm x 320 mm (except for a case size)	
Logic Circuit Block	Item	Description	Q'ty
	Basic Gate	Dual NAND Gate Module (7400)	6 EA
		Dual NOR Gate Module (7402)	2 EA
		Dual NOT Gate Module (7404)	3 EA
		Dual AND Gate Module (7408)	2 EA
		Dual 3 input NAND Gate Module (7410)	2 EA
		Dual 4 input NAND Gate Module (7420)	1 EA
		Dual OR Gate Module (7432)	2 EA
		Dual XOR Gate Module (7486)	5 EA
	74 Series	Decimal Decoder Module (7442) (*)	1 EA
		7-Segment Decoder Module (7447)	1 EA
		4-Bit Latch Module (7475)	1 EA
	74 Series	4-Bit Full Adder Module (7483)	1 EA
		4-Bit Comparator Module (7485)	1 EA
		Decimal Counter Module (7490)	1 EA
		4-Bit Binary Counter Module (74393)	1 EA
	Register	Dual JK Flip Flop Module (7473)	2 EA
		Dual D Flip Flop Module (7474)	2 EA
	Application Circuit	Timer Module (NE555)	1 EA
		Multivibrator1 Module (2SC1815)	2 EA
		Multivibrator2 Module (2SC1266, 2SC3198)	1 EA
	Size	70mm x 50mm, 70mm x 105mm(*) 2types	
User Design Block	Item	Description	Q'ty
	BreadBoard Module	+5V, GND Power supplied	1 EA
		Bread Board : 167mmx147mm	
		Terminal Strip 3EA, Bus Strip 4EA Size : 220mm x 160mm (Logic Module 3x3 Size)	
	Smart Board Module	Size : 70mm x 50mm	3 EA

Training Contents

BOOLEAN ALGEBRA	COMBINATIONAL LOGIC CIRCUIT	SEQUENTIAL LOGIC CIRCUIT
- AND, OR, NOT Operation - NAND, NOR, XOR, XNOR Operation - LAWS AND THEOREMS OF BOOLEAN ALGEBRA - MINIMIZATION OF LOGICAL EXPRESSION	- Half Subtractor - 2-Bit Subtractor - Adder and Subtractor - 1 x 4 DeMultiplexer - Encoder and Decoder - 1 x 4 DeMultiplexer - Comparator	- RS Flip-Flop - Divider Circuit - Binary-Coded Decimal - Electronic Dice - Decimal Ring Counter - Decimal Counter

Functions by Module



Preparation (Basic Theory)

Prepare Test (Basic Principle)

Test with Logic module

Assemble Logic Module Check Wiring and Operation

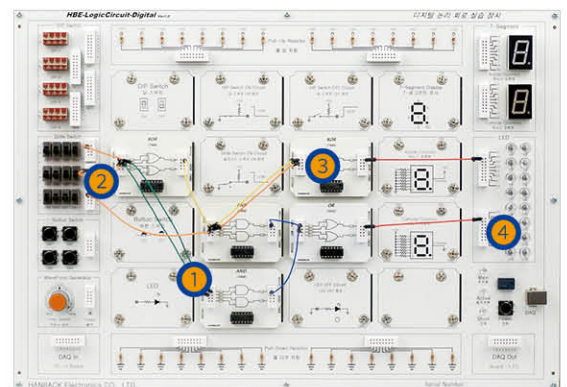
Test with Bread Board

Assemble Bread Board Check Wiring and Operation

8x1 Multiplexer Test Sample

Test Result using DAQ port

★ Application Example Full Adder



- 1 Place logic module and configure circuit through the cable
- 2 Use left switch of designed circuit as an input
- 3 Check data flow using LED of each module
- 4 Check the result using LED

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Product Components

