



**HY17S68 Series
HY17S68-DK02 IDE
Hardware User's Manual**

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1. Package Contents

HY17S68-DK02 is an integrated hardware development kit, including ICE (In-Circuit Emulator) Board, Control Box, LCD Board and USB Cable. Integrated hardware development kit helps to develop MCU application program of HY17P6x Series. Through the NB/PC end connection for program compilation and debugging functions, the relevant hardware equipment is as follows:



Model No.	Part Name	Description	Quantity
HY17S68-DK02	1. HY17S68-IM02	HY17S68-L216 ICE Board	1
	2. HY17000-CM01	HY17S Control Box	1
	3. HY10000-AM01	LCD Board	1
	4. Cable line	USB Type A to Mini. B Cable	1
	5. Interface line	6pin/2.54 (2.54mm pitch)	1

Table 1-1

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2. Safety Precautions

- Do not place heavy objects on the display panel, in order to avoid damage caused by stress.
- Place the application display boards at steady place, so as to avoid falling damage.
- Do not use this product with the input voltage which is not meeting the electrical specifications, in order to avoid working abnormally or damage.
- Avoid application display boards being touched by liquid, dirt and avoid being exposed to moisture during operation. This application should be kept in a dry environment, so as not to affect the function and performance.
- Remove the power supply when not using it.
- When following status occurred, please remove the power supply immediately, and contact our engineer.
 - Power Supply line is worn or damaged.
 - Power source (battery) connected but no any light on while operating.
 - Component off.
 -

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3. Software Installation Requirements

3.1. IDE Software Installation Requirements

Minimum System Requirements of operating HY17S68 IDE hardware development tool:

- (1) PC/NB hardware requirement
IBM PC compatible X86 system CPU
512 MB Memory (1GB recommended)
1GB Hard disk
- (2) Supported product model
HY17P60 and HY17P68 series products
- (3) Hardware support models
HY17S68-DK02: HY17S68 IDE hardware development tool
(HY17000-CM01 supports firmware version above W15P02.0)
- (4) Software supported version
HY17P IDE V1.2 version above : HY17P Series Assembly Language IDE software
H08 CIDE V1.2 version above : HYCON 8-bit MCU C Language IDE software
- (5) Operating system requirements
Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10
- (6) Applicable interface mode
USB Port with HID-compliant device
HY17S68-DK02's USB Port driver uses the Windows standard HID driver
(Figure 3-1), so user can use it without installing a separate driver.



Figure 3-1

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4. Description of the hardware tool

4.1. Schematic architecture description

- HY17000-CM01 (control box) is the connecting device between HY17S68-IM02 ICE Board and HY17P Series IDE software.
- Connect with HY17S68-IM02 ICE board through Interface line (6Pin/2.54mm).
- Connect with HY17P Series IDE software through USB line, the connection diagram is as follows:



Figure 4-1

4.2. Description of control box

The control box (model: HY17000-CM01) is universal for HY17P series products (as shown in Figure 4-2). The following is the introduction of the control box:



HY17000-CM01

Figure 4-2

(1) Power LED

Function : POWER LED

Item	Name	Description
L1	Power LED	Green light, when the USB Port is connected to a computer or a 5V power supply through a USB cable, when the green light is on, it means that the control box is normally powered.

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(2) Debug Port

Function: IDE communication interface port, used to connect with the Debug interface of the ICE Board to control the chip.

The function is defined as follows:

Item	Name	Description
1	VSS	Power ground
2	SCK	SCK Pin of Control Box and ICE board
3	VDD	Power output 4.5V
4	CS	CS Pin of Control Box and ICE board
5	SDI	SDI Pin of Control Box and ICE board
6	SDO	SDO Pin of Control Box and ICE board

(3) USB Port

Function : USB Port

Description: Mini B Cable connector

4.3. Description of In-Circuit Emulator(ICE) Board

The ICE board (model: HY17S68-IM02) is commonly used for HY17P6x series products (see Figure 4-3). This ICE board is mainly used for IDE hardware tools, which can be used to emulate chips and develop debugging. The following describes the appearance and functions of the ICE board:

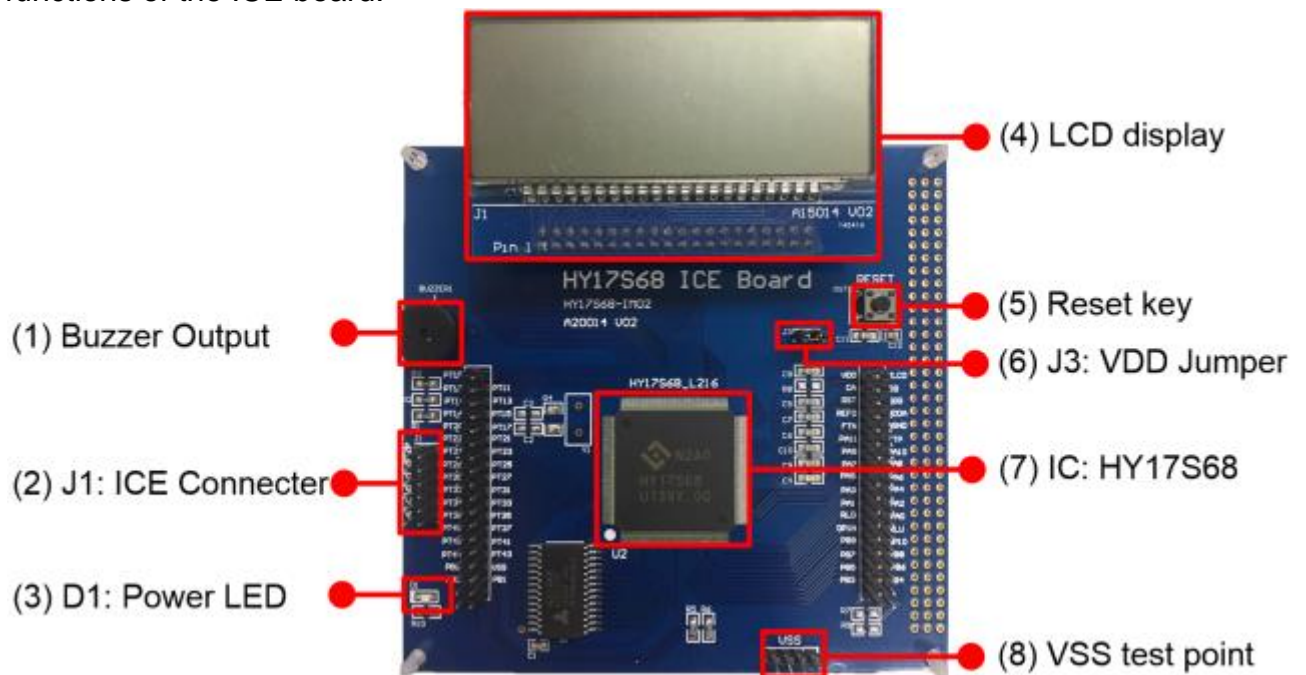


Figure 4-3

(1) Buzzer Output

Function: can make the buzzer sound

(2) J1: ICE Connector

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Function: connect with the control box (HY17000-CM01) to emulate the operation of the chip.

(3) D1: Power LED

Function: Connect to the control box (HY17000-CM01), when power is supplied, D1 on the ICE board will be on constantly

(4) LCD display(4COM*17SEG)

Function: Mainly control the use of LCD display.

(5) Reset Key

Function: Reset ICE to use.

(6) J3:VDD Jumper

Function: Provide HY17S68 power supply (4.5V)

(7) IC: HY17S68

Function: Emulation chip, used to emulate the use of HY17P6x series chips

(8) VSS Test point

Function: Use for grounding test



Note : The ICE board circuit diagram is placed in the IDE software folder,
 "A20014 V02_HY17S68-IM02_HY17S68-L216 ICE Board.pdf"
 The Assembly IDE folder path is: "HYCON\HY17P IDE\ICESchematic"
 The H08 CIDE folder path is: "HYCON\H08 CIDE\ICESchematic\HY17P"

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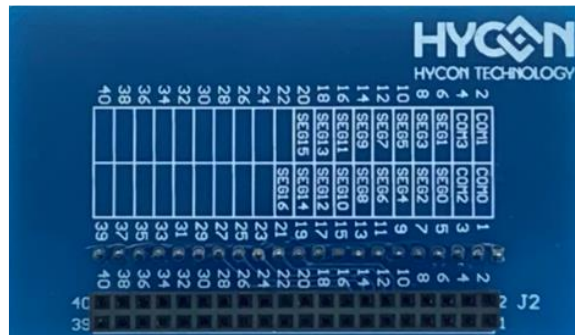
4.5. LCD Board Introduction

The LCD panel(HY10000-AM01) on HY17S58-L128 ICE Board is HYCON self-owned mold, it's symbol and pin diagram is shown in below graph. It's panel specification is as follows:

- (1) Operating Voltage: 3.0V
- (2) Visible Angle: 60 degree
- (3) Operating Frequency: 60Hz
- (4) Bias:1/3 bias
- (5) Waveform:1/4 duty
- (6) Pin: 90 degree



Top side of HY10000-AM01



Bottom side of HY10000-AM01

J1 pin assignment

Pin No.	1	2	3	4	5	6	7	8	9	10	11
Pin Name	COM0	COM1	COM2	COM3	SEG0	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6

Pin No.	12	13	14	15	16	17	18	19	20	21
Pin Name	SEG7	SEG8	SEG9	SEG10	SEG11	SEG12	SEG13	SEG14	SEG15	SEG16

J2 pin assignment

Pin Name	COM0	COM2	SEG0	SEG2	SEG4	SEG6	SEG8	SEG10	SEG12	SEG14	SEG16
Pin No.	1	3	5	7	9	11	13	15	17	19	21
Pin No.	2	4	6	8	10	12	14	16	18	20	22
Pin Name	COM1	COM3	SEG1	SEG3	SEG5	SEG7	SEG9	SEG11	SEG13	SEG15	-



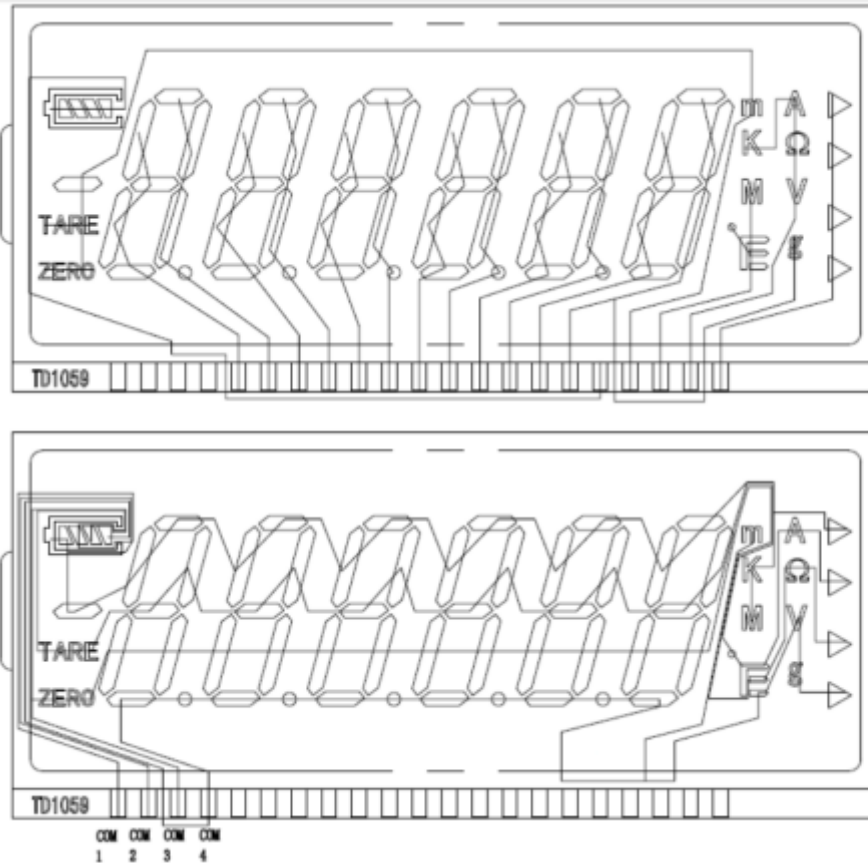
Diagram illustrating the 7-segment display layout and pin connections. The segments are labeled A through G. The pins are labeled S1 through S14. The display is shown with the number 1 and 6, and the text TARE and ZERO.

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- HY10000-AM01: LCD COM/SEG Layout



SEG

COM

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4.6. Control box and ICE board hardware connection steps

- (1) Confirm that J3 (VDD Jumper) of the ICE board is short-circuited together.
- (2) The Interface lines are respectively connected to the Debug port of the control box and the ICE Connector (J1) of the ICE board.
- (3) Use USB Cable to connect to the USB Port of the control box and the USB Port of the computer (the Power LED will be on at this time).
- (4) After Step1~3 (as shown in Figure 4-5), it means that the hardware of the control box and the ICE board are properly connected.

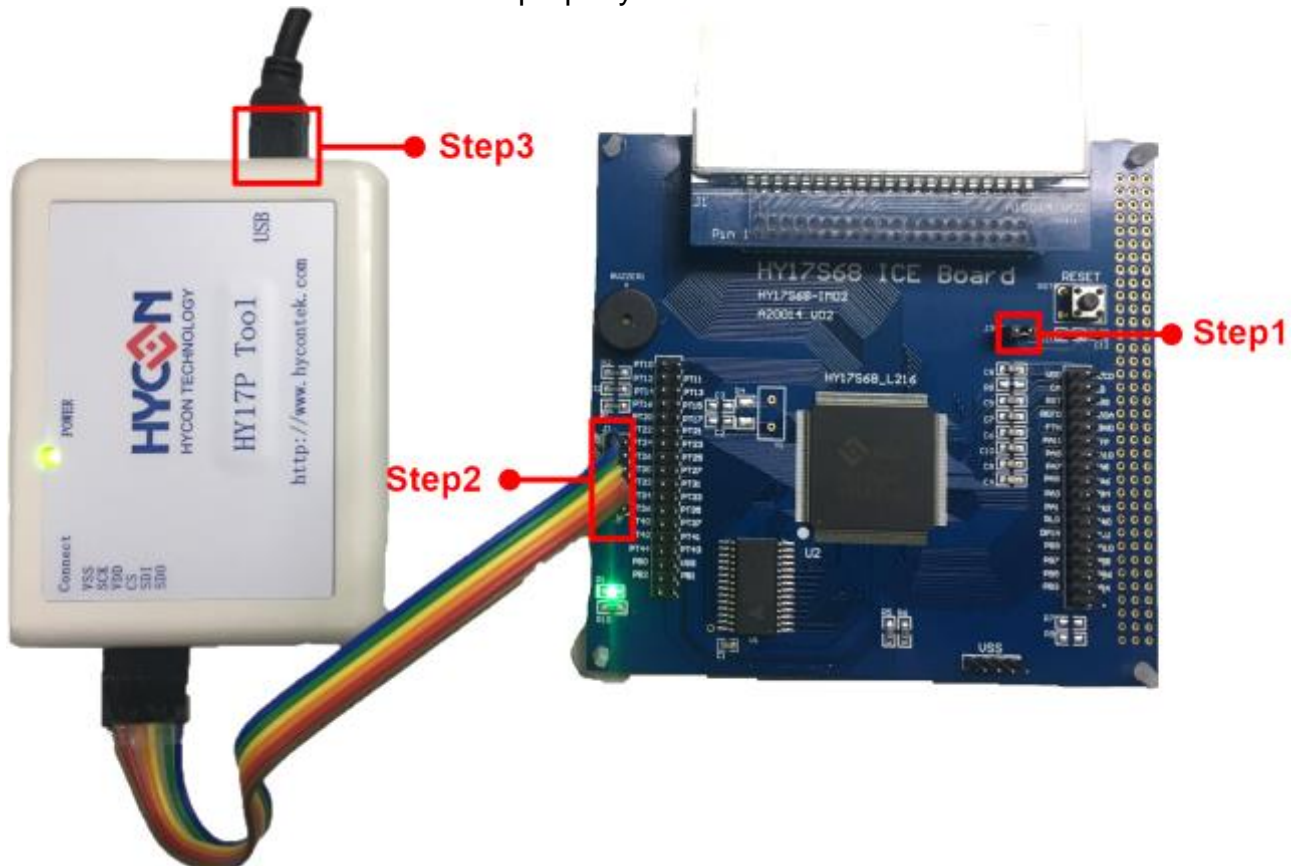


Figure 4-5

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5. Revision Record

Version	Page	Date	Summary
V01	All	2020/07/30	First version
V02	P11	2023/02/27	4.5.Increase LCD Board Introduction