



HY17M24 Series IDE Hardware User's Manual

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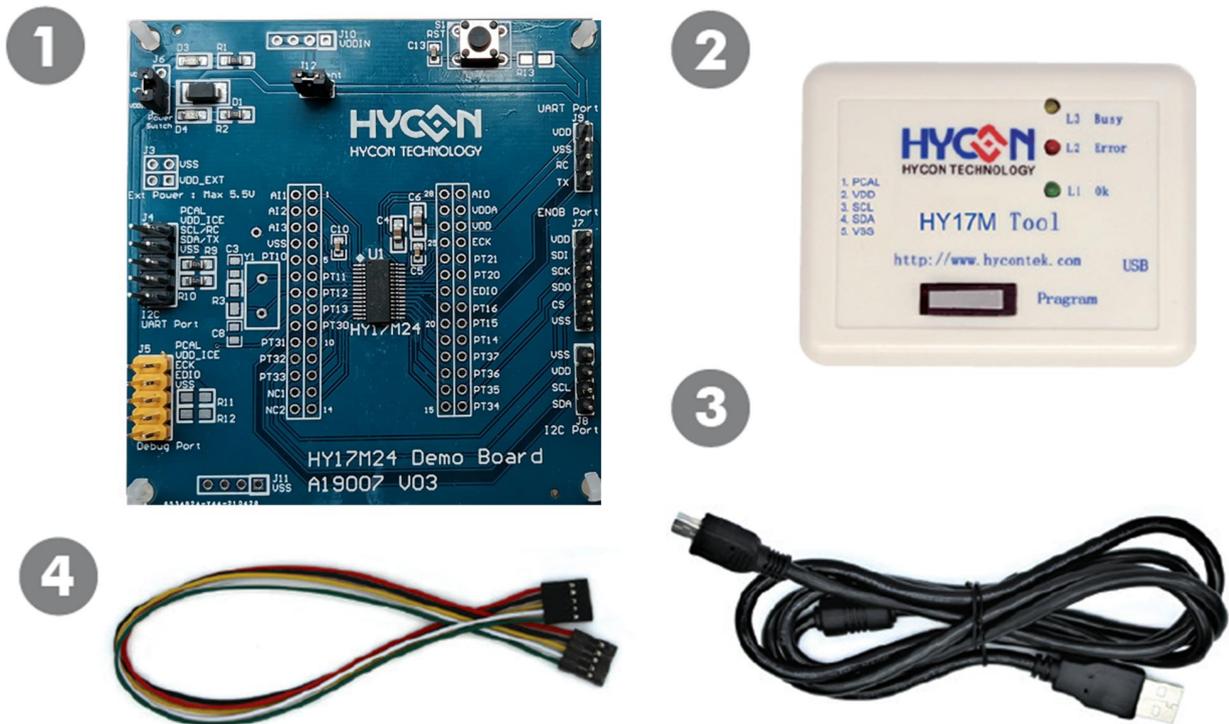
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1. Package Contents

HY17M24 IDE Hardware development kit includes HY17M00 Control Box and HY17M24-ES28 Target Board(refer to table 1-1), In addition, the HY17M00 control box can be used as an IDE hardware development tool, and can also be used as a programmer of the HY17M series, this user's manual mainly introduces the control box applied to the IDE hardware development tool, the related hardware is equipped as shown below:



Model No.	Part Name	Description	Quantity
HY17M24-DK01	1. HY17M24-AM01	HY17M24-ES28 Target Board	1
	2. HY17M00-CM01	HY17M00 Control Box	1
	3. Cable line	USB Type A to Mini B Cable	1
	4. Interface line	5pin to 5pin (2.54mm pitch)	1

Table1-1

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.

3. Software Installation Requirements

3.1. IDE Software Installation Requirements

Minimum System Requirements of operating HY17M24 IDE hardware development kit:

- (1) PC/NB hardware requirement:
 - IBM PC compatible X86 system CPU
 - 512MB Memory(1GB recommended)
 - 1GB Hard disk
- (2) Supported Products:
 - HY17M24 Series chip
- (3) Supported Hardware Model No.:
 - HY17M24-DK01: HY17M24 IDE hardware development kit.
 - (FW version applicable to HY17M00-CM01 is W17M01.9 or above)
- (4) Supported software version:
 - HY17M IDE V2.02 above: HY17M Series Assembly Language IDE software
 - H08 CIDE V1.30 above: HYCON 8-bit MCU C Language IDE software
- (5) Supported Operating system:
 - Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10
- (6) Apply the following interface modes:
 - USB Port with HID-compliant device
 - The HY17M24-DK01's USB Port driver uses the Windows standard HID driver (Figure 3-1), so no It can be used with an additional USB driver.



Figure 3-1

4. Description of the hardware

4.1. Architecture description

The HY17M00-CM01 Control Box is a control device between the HY17M24-AM01 Target Board and the HY17M IDE software. It can be used as a development tool through the connection between the Debug line and the USB cable, the assembly diagram is as follows:



Figure 4-1

4.2. Control Box Introduction

Control Box (Model No.: HY17M00-CM01) is commonly used in HY17M series products (appearance shown in Figure 4-2), the following describes the related functions of the Control Box:

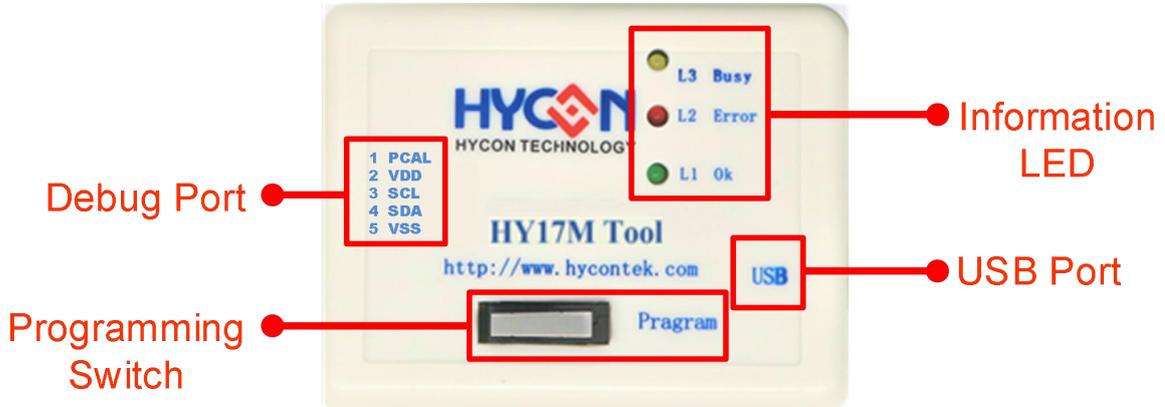


Figure 4-2

(1) Information LED

Feature: status Indicator LED

Description: the definition of L1~L3 is as follows

Item	Name	Description
L1	Ok	Green LED, When the USB Port is connected to a computer or an external 5V power supply, the L1 light indicates that the Control Box is powered.
L2	Error	Red LED (reserved, no use).
L3	Busy	Yellow LED (reserved, no use).

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(2) Debug Port

Feature: The Debug interface port is connected to the EDM port of Target Board to control the chip.

Description: Pin are defined as follows

Item	Name	Description
1	PCAL	HAO calibration pin
2	VDD	Power source output, fixed output 3.3V with 100mA power supply
3	SCL	I ² C Clock Pin (with pull-up 10KΩ)
4	SDA	I ² C Data Pin (with pull-up 10KΩ)
5	VSS	Ground Pin

(3) USB Port

Feature: USB Port.

Description: Connect to your computer via USB Type A to Mini. B Cable.

(4) Programming Switch

Feature: the switch for programming.

Description: when the control box is used as an IDE development tool, please do not press this "Program" button at will to avoid the HY17M24 chip's code on the Target Board being changed and affecting normal development.

4.3. Introduction to Target Board

The Target Board (Model No.: HY17M24-IM01) is commonly used in the HY17M24 series (Appearance shown in Figure 4-3), this Target Board can be used in addition to IDE hardware tools, It can also be used as a demo board, the following describes the related functions of the Target Board:

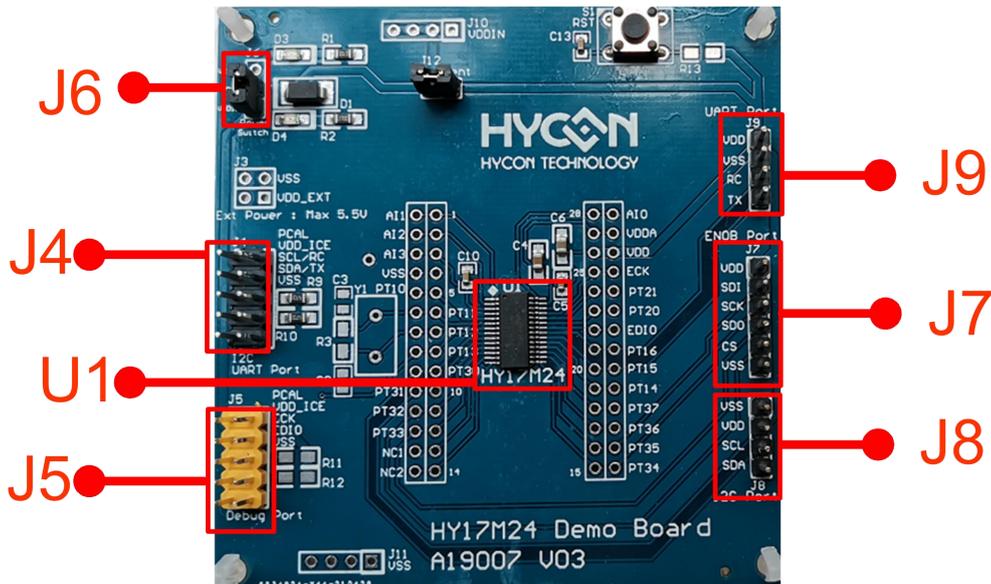


Figure 4-3

(1) U1

Feature: Target Board Chip, called HY17M24 (Part No: HY17M24-ES28).

(2) J4

Feature: Target Board Chip's I²C interface port and also can be used as secondary Debug port and HAO calibration pin.

Description: Pins are defined as follows

Pin	Name	Description
1-1	PCAL	HAO calibration pin
2-2	VDD_ICE	External Power supply pin
3-3	SCL/RC	UART RX pin, I ² C and Debug Port2's clock pin (with pull-up 4.7KΩ on board)
4-4	SDA/TX	UART TX pin, I ² C and Debug Port2's data pin (with pull-up 4.7KΩ on board)
5-5	VSS	Power ground pin

(3) J5

Feature: Target Board Chip's primary Debug port and HAO calibration pin(the default).

Description: Pins are defined as follows

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Pin	Name	Description
1-1	PCAL	HAO calibration pin
2-2	VDD_ICE	External Power supply pin
3-3	ECK	Debug port's clock pin
4-4	EDIO	Debug port's data pin
5-5	VSS	Power ground pin

(4) J6

Feature: Target Board Chip's VDD power source selection.

Description: Pins are defined as follows

Pin	Name	Description
1	VDDICE	Target Board Chip's VDD power is coming from Control Box
2	VDDIN	Target Board Chip's VDD power
3	VDDEXT	Target Board Chip's VDD power is coming from external power

(5) J7

Feature: Target Board Chip's SPI interface(implemented with firmware) port, The main purpose is to be able to connect to the ENOB tool's control board SPI for use as an ENOB demo board.

Description: Pin are defined as follows

Pin	Name	Description
1	VDD	Target Board chip 's Power Pin
2	SDI	Target Board chip 's SDI Pin
3	SCK	Target Board chip 's SCK Pin
4	SDO	Target Board chip 's SDO Pin
5	CS	Target Board chip 's CS Pin
6	VSS	Power Ground pin

(6) J8

Feature: Target Board Chip's I²C interface port.

Description: Pins are defined as follows

Pin	Name	Description
1	VSS	Power ground pin
2	VDD	Target Board Chip's VDD power
3	SCL	I ² C's clock pin
4	SDA	I ² C's data pin

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(7) J9

Feature: Target Board Chip's UART interface port.

Description: Pins are defined as follows

Pin	Name	Description
1	VDD	Power ground pin
2	VSS	Target Board Chip's VDD power
3	RC	UART's receive pin
4	TX	UART's transform pin

Note : The above only describes the basic functions that the Target Board will use, for other unlisted parts, please refer to the circuit diagram or contact FAE technical support.

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4.4. Target Board Circuit Diagram

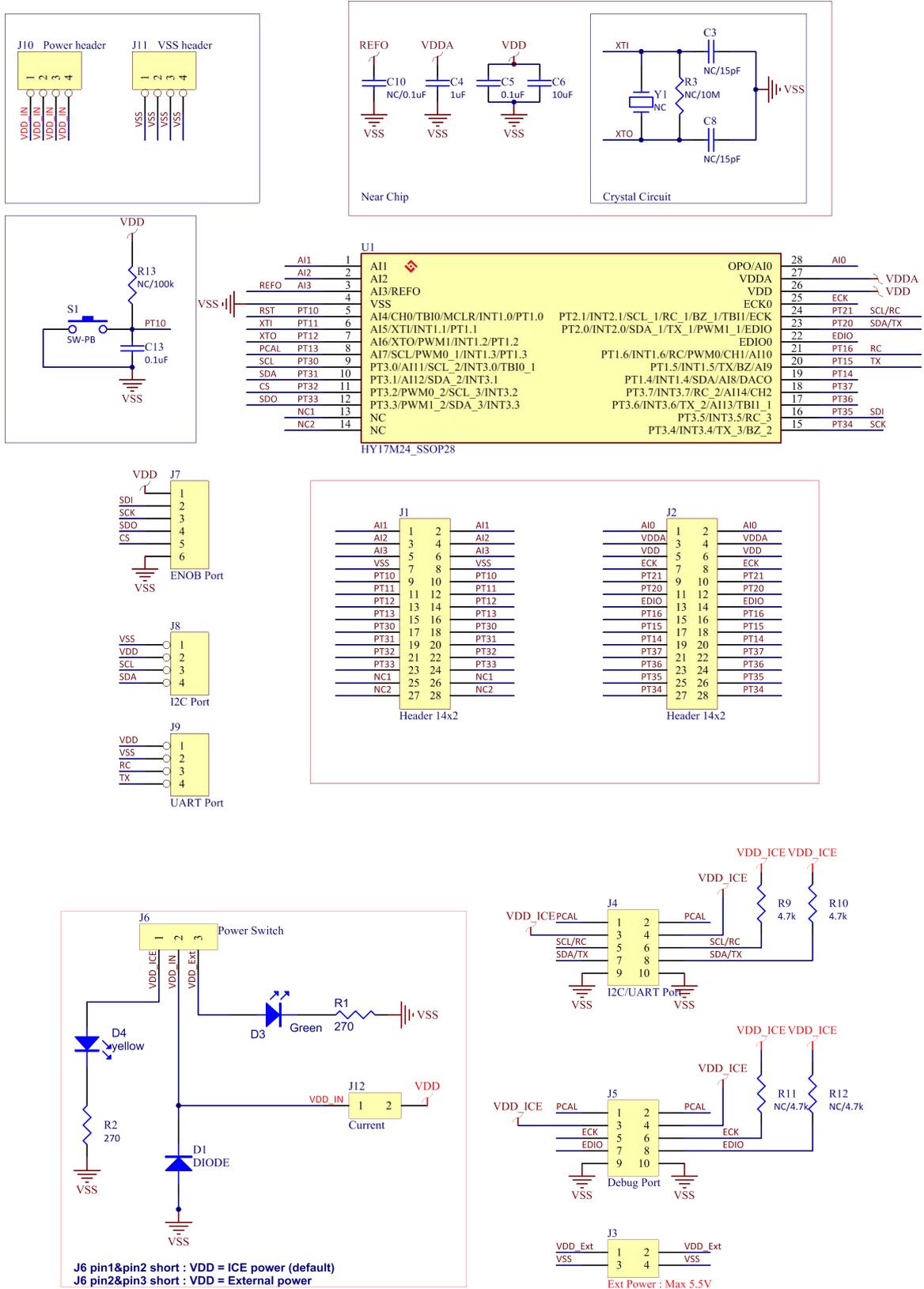


Figure 4-4

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Note : This Target Board circuit diagram " A19007 V03_HY17M24-AM01_HY17M24 Target Board.pdf " is placed in the IDE software directory and can be referenced by yourself.

* If using Assembly IDE, it's placed in "HYCON\HY17M IDE\Schematic" directory.

* If using H08 C IDE, it's placed in "HYCON\H08 CIDE\ICESchematic\HY17M" directory.

4.5. Control Box and Target Board Hardware Connection Steps

Step1: Make sure that Target Board's J6 pin are shorted together.

Step2: Connect the Control Box Debug Port and Target Board's J5/EDM Port with the 5-wire Debug interface line.

Step3: Use the USB Cable to connect to the Control Box's USB Port and the computer's USB port (the L1 LED will light up).

Step4: After Step 1~3 (as shown in Figure 4-5), the hardware connection is completed.

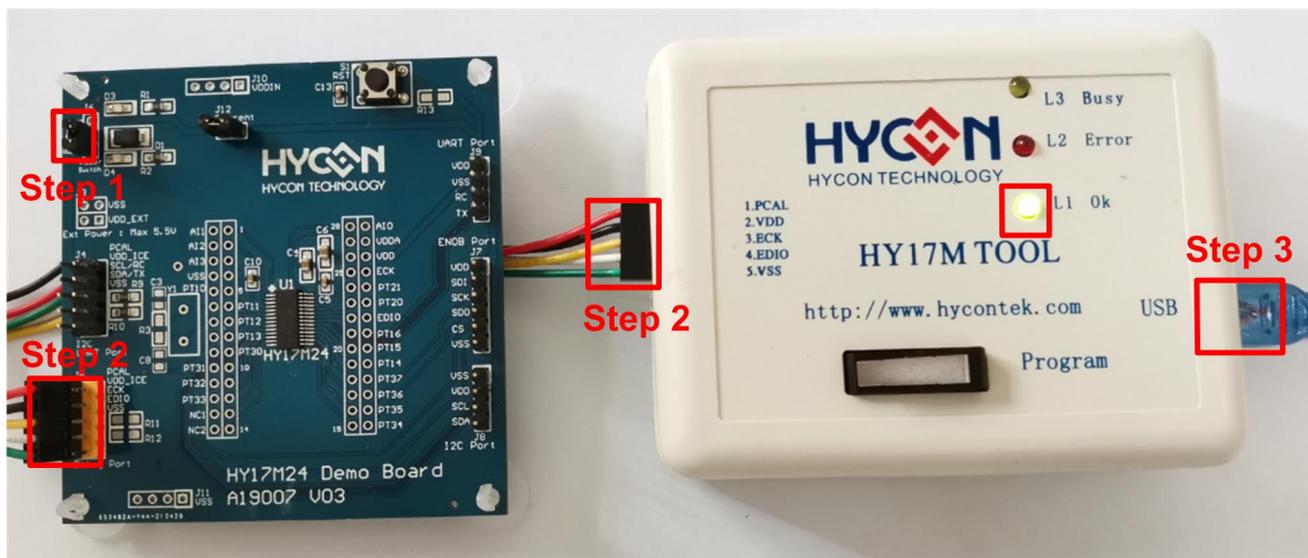


Figure 4-5

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5. Revisions

The following describes the major changes made to the document, excluding the font and punctuation changes.

Version	Page	Date	Revision Summary
V01	ALL	2019/02/18	First edition
V02	ALL	2022/03/24	Updated the hardware firmware version and software version description Updated illustrations and descriptions due to Target Board update