



HY16F18X Series IDE Hardware User's Manual

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Attention:

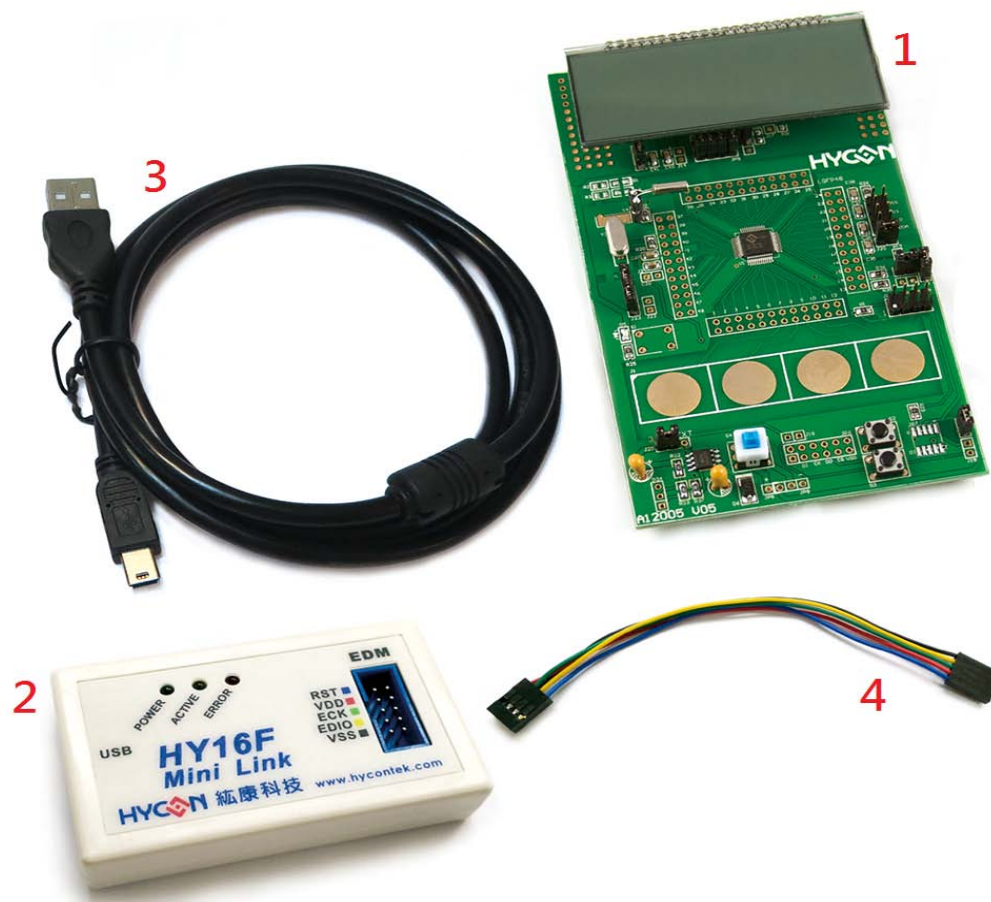
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HY16F18X Series IDE Hardware User's Manual

1. Package Contents

HY16F18X IDE Hardware development kit includes HY16F Mini Link and HY16F188-L048 Target Board.

Integrated Hardware development kit helps to develop MCU application program of HY16F Series. Program compiling, hardware debug, IC programming was implemented through NB/PC end connection.



Serial number	Name	Spec	Quantity
HY16F18X-DK04	1. HY16F188-L048 Target Board	HY16F00-IM02	1
	2. HY16F Mini Link debug tool	HY16000-CM04	1
	3. USB cable	USB Type A to Mini B Cable	1
	4. EDM line	5pin to 4x2pin (2.54mm pitch)	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 AndeSight RDS:

- (1) PC/NB hardware requirement:
 - IBM PC compatible X86 system CPU
 - 4GB Memory
 - 8GB Hard disk

- (2) Product number support:
 - HY16F18X Series

- (3) Hardware model support:
 - HY16F18X development tools HY16F18X-DK04.

- (4) Software version support:
 - AndeSight V2.1.1 RDSp3 version above
 - Device => HY16F_RDSp3_DeviceV0.1
 - Mini Link Version information => Andes AICE-MINI v1.0.1

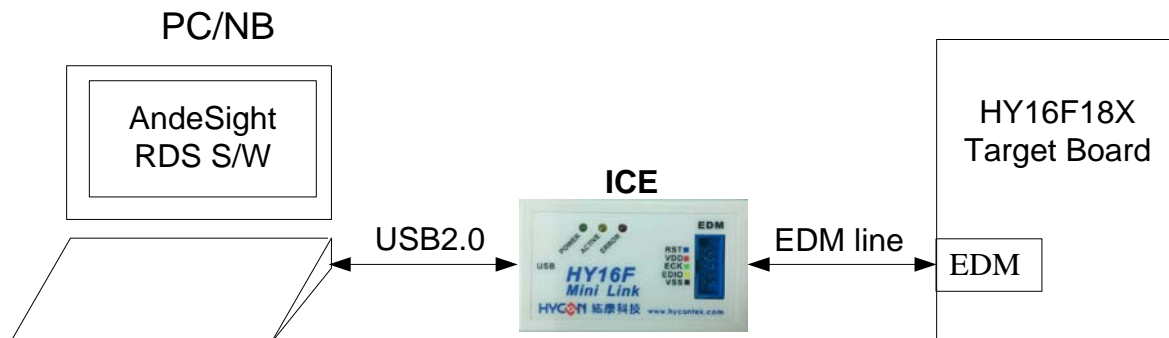
- (5) Operating system support:
 - Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10

- (6) Apply the following interface modes:
 - USB Port

4. Description of the IDE hardware (HY16F Mini Link)

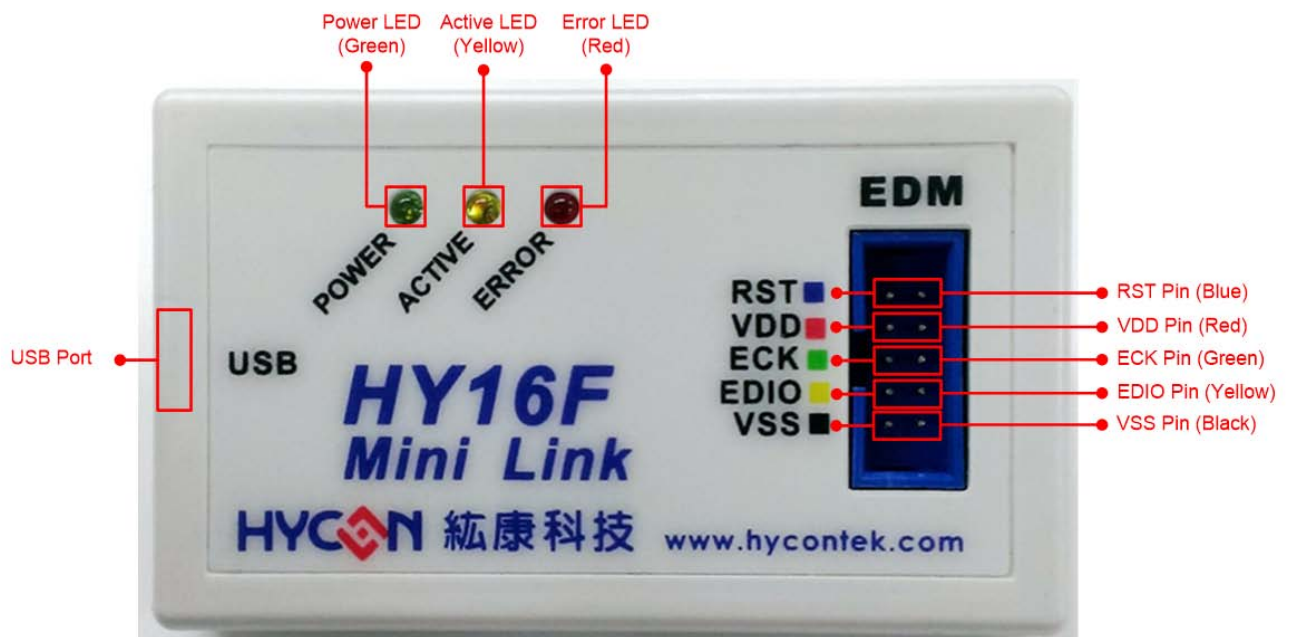
4.1. Schematic architecture description

HY16F Mini Link (AICE) for the HY16F188-L048 Target Board and PC / NB end, the middle connection device. Mainly used as a Programming program and Debug mode.



Note: EDM (Embedded debug module)

4.2. Mini Link diagram

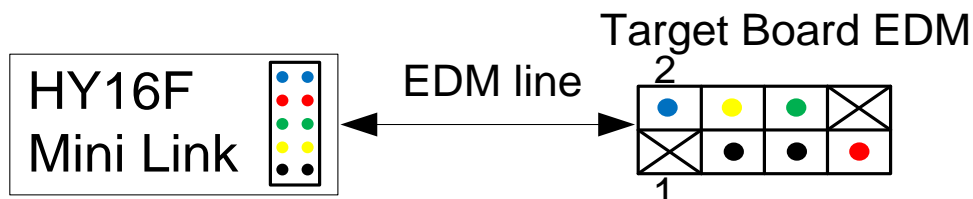


Pin Name	Description
RST	Reset Pin
VDD	The VDD pin of the Mini Link is fixed to provide 3.3V , And to provide IC (HY16F188-L048) power directly from the Target Board EDM Pin7.
ECK	EDM Clock Pin
EDIO	EDM Data Input / Output Pin
VSS	Ground Pin

Mini Link LED description:

- POWER LED (Green LED): When the USB Port connection, POWER LED will continue to light.
- ACTIVE LED (Yellow LED): When enter Debug Mode, ACTIVE LED will flash continuously.
- ERROR LED (Red LED): When the USB Port is connected but the Target Board is not connected, the Error LED is on.

4.3. Mini Link connection with EDM



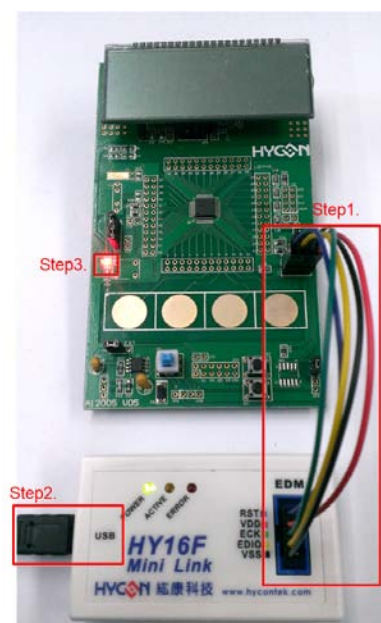
- RST (Blue)-> Target board EDM Pin2
- VDD (Red)-> Target board EDM Pin7
- ECK(Green)-> Target board EDM Pin6
- EDIO(Yellow)-> Target board EDM Pin4
- VSS(Black)-> Target board EDM Pin3,5

4.4. Connection Diagram of Mini Link and Target Board (Powered by Mini Link)

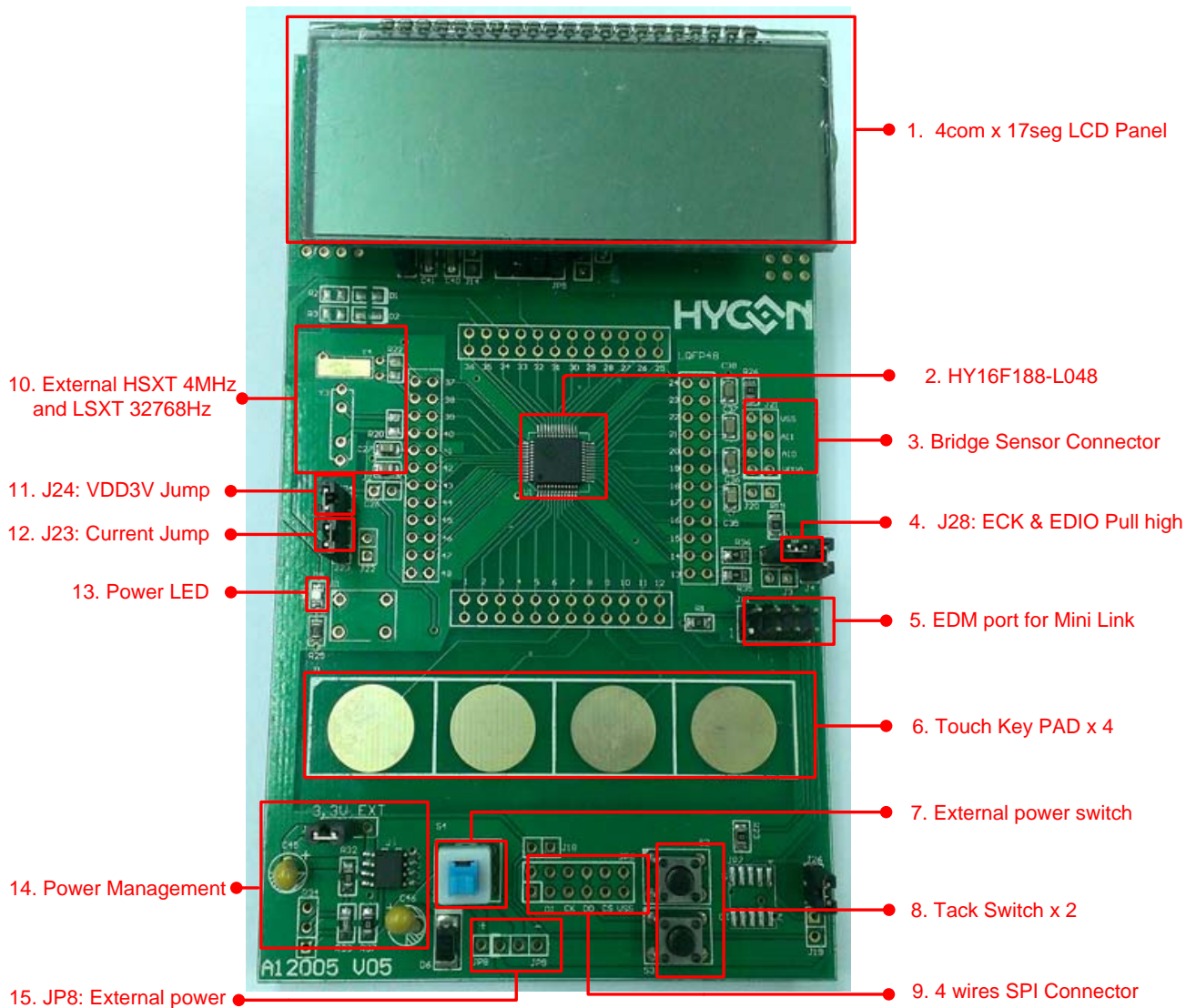
Step1: The EDM Line connection Mini Link and Target Board.

Step2: Connect the PC's USB Port to the Mini Link.

Step3: The Power LED is on.



5. Hardware Target Board Introduction



5.1. Target Board Features

No.	Name	Description
1	4Com*17Seg LCD Panel	See Chapter 6 for details
2	HY16F188-L048	HY16F188 LQFP48 MCU
3	Bridge Sensor Connector	ADC Input Pin AI0 & AI1
4	J28	ECK & EDIO Pull high
5	EDM Port	Connection Mini Link (See Section 4.3 ICE Connection for details)

6	Touch key PAD	4 Touch key
7	External power switch	See Section 5.2 for details
8	Tack Switch*2	S2 and S3 are Tack Switches
9	SPI Connector	4 wires SPI Interface
10	External HSXT and LSXT	External HSXT (4MHz) & LSXT (32768Hz)
11	J24	VDD3V Jump
12	J23	Current Jump
13	Power LED	When the Target Board is powered normally, the Power LED is on
14	Power Management	External power supply voltage regulator circuit (see section 5.2)
15	JP8,JP9	External Power (see section 5.2 for details)

5.2. External Power Supply and Precautions

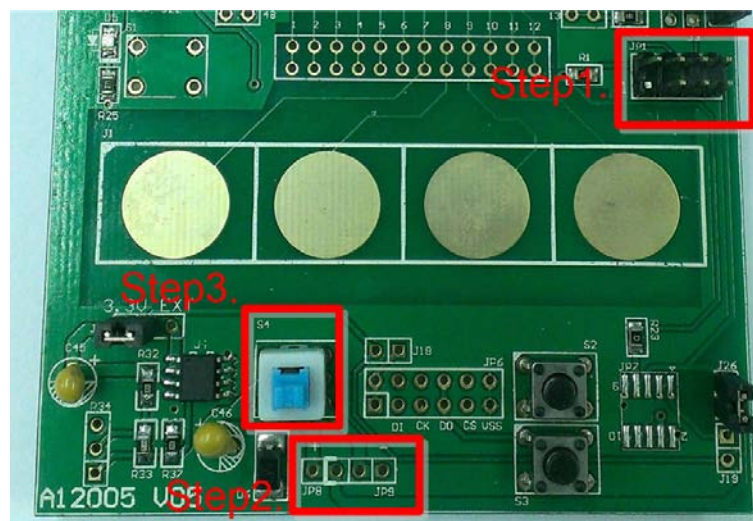
Use an external power supply method (Through the Power Management will power regulator into 3.3V, and then provided to HY16F188 IC)

5.2.1. Use an external power supply step

Step1: Remove the EDM Line

Step2: By JP8 (+), JP9 (-) to provide external power supply
(Input range VDD~9.0V)

Step3: Press S4 switch (External power switch) Through the Power Management will power regulator into 3.3V, and then provided to HY16F188 IC



Precautions:

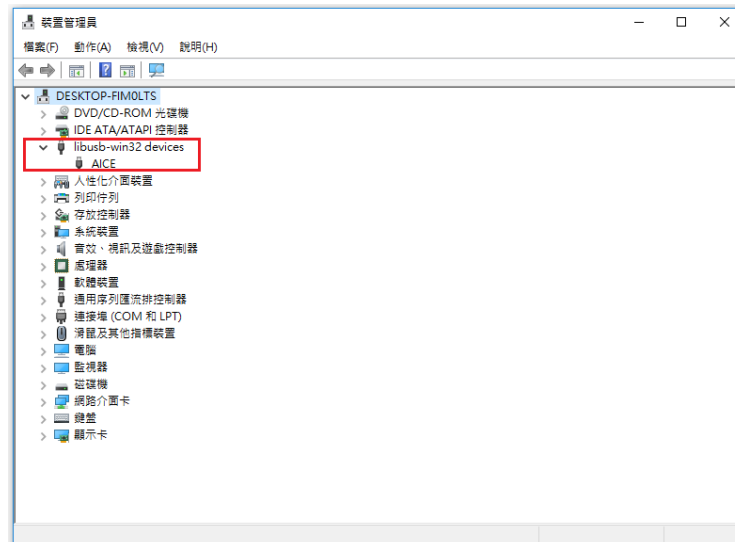
Because Mini Link supplied power = 3.3V, so when want to use an external power supply, be sure to remove EDM line, avoid voltage different voltages caused conflict.

7. Hardware Connection Introduction

For driver install, please refer to HY16F Series, IDE Software User's Manual.

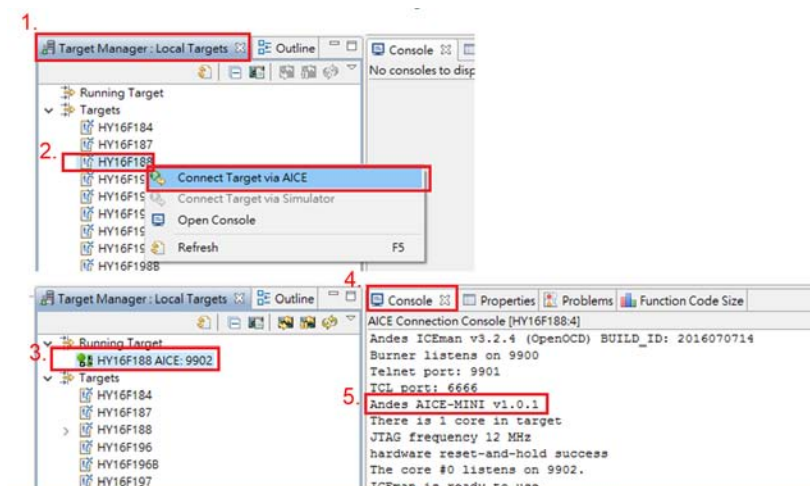
AICE USB driver program will install automatically when the software is installed.

For correct AICE connection status, libusb-win32 devices of AICE (which is Mini Link) will show up under PC device administrator.



EDM connection test:

- (1) Connect the Mini Link to the Target Board according to Section 4.4
- (2) Open the AndeSight IDE software.(Please refer to installation HY16F series IDE software installation steps)
 - (2.1) In the Target Manager: Local Targets window
 - (2.2) Select HY16F188 by right-clicking(Select Connect Target via AICE)
 - (2.3) Successful connection appears HY16F188 AICE: 9902
 - (2.4) From the Console window, can see the version information of the Mini Link: Andes AICE-MINI v1.0.1



8. Revisions

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

Version	Page	Summary of Changes
V01	ALL	First Edition
V02	ALL	Second Edition
V03	ALL	Third Edition
V04	ALL	<ol style="list-style-type: none">1. Add package contents2. Add a description of the Mini Link3. Add a hardware Target Board description