HY16F18X Series
IDE Hardware User's Manual

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1. IDE Hardware Introduction

HY16F18X IDE Hardware development kit includes AICE Board and Target Board, as shown in below graph No.3 & No.4.

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.

Name/Model No.	DK01	DK02
Target Board	A12005 V03	-
USB Control Board and Writer	AICE V2.0.1	-

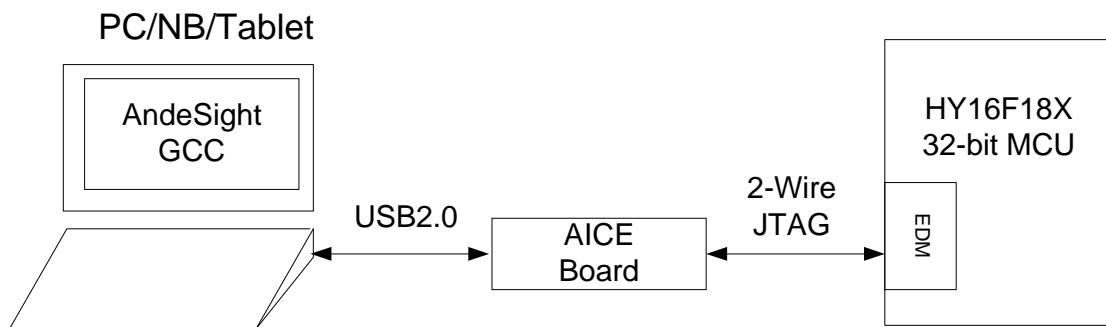Hardware device of DK01 is shown in below:
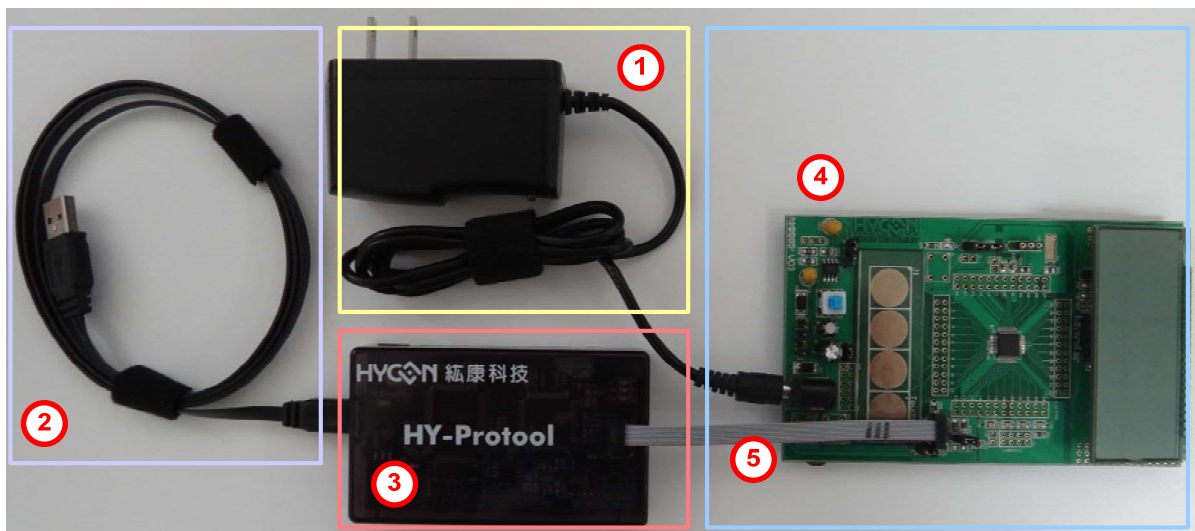
※No.1: 9V Adapter
※No.2: USB2.0 transmission wire
※No.3: AICE Board
※No.4: Target Board
※No.5: EDM transmission wire

2. AICE Board Introduction

AICE is the device that connects to HY16F Target Board and PC/NB/Tablet end, main function is to burn program and to debug.

AICE BOX

Connection Port Description：

(1) USB Port：USB connection to PC end

(1.1) to burn program

(1.2) to detect error under Debug mode

(2)USB Power LED: USB power light

(3) ACT LED: Blinking under Debug mode and burn program

(4) LINK LED: Error light

(5) Done LED: Connection light after HY16F products power on and connects to AICE Board

(6) EDM Port: Connecting to EDM Port of HY16F Target Board

(6.1) VDD3V connects to positive power source, VDD3 of HY16F

(6.2) VSS connects to VSS of HY16F

(6.3) EDIO connects to EDIO signal pin of HY16F

(6.4) ECK connects to ECK signal pin of HY16F

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 AndeShape AICE will show up under PC device administrator.
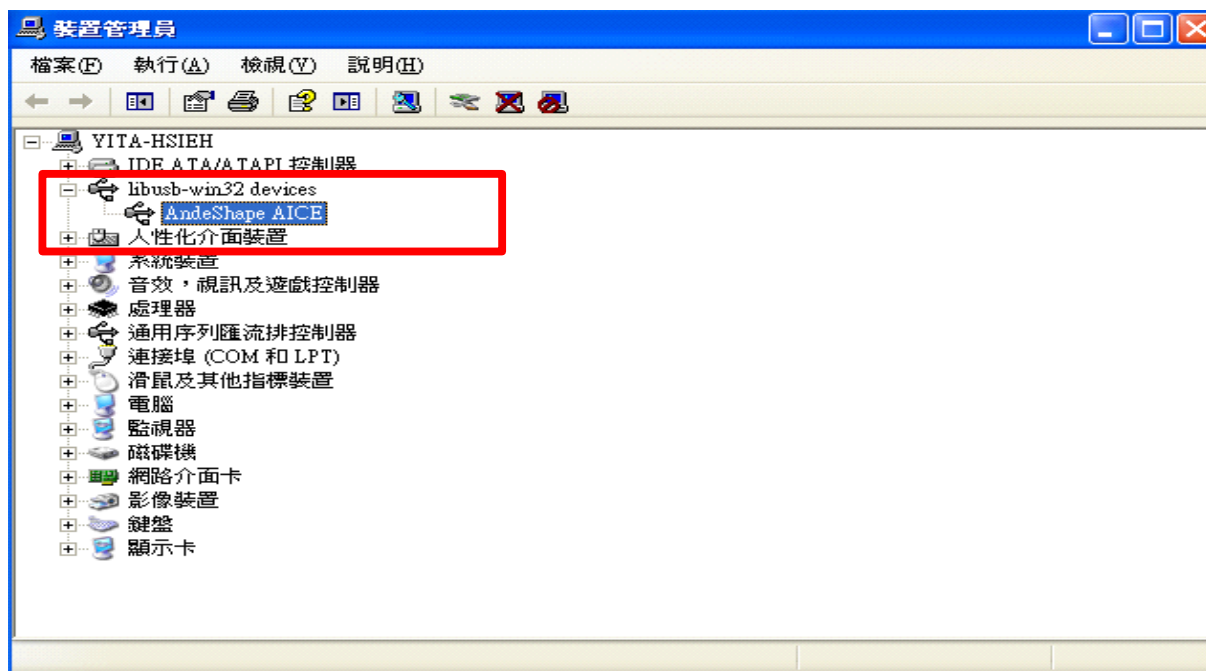
3. Target Board Introduction

Target Board is the main circuit board of HY16F Series, which executes function such as sensing ADC value and LCD display of the whole HY16F series IC by connecting to AIC.

Collocating with conventional or Touch KEY buttons helps to speed up the time of product development.
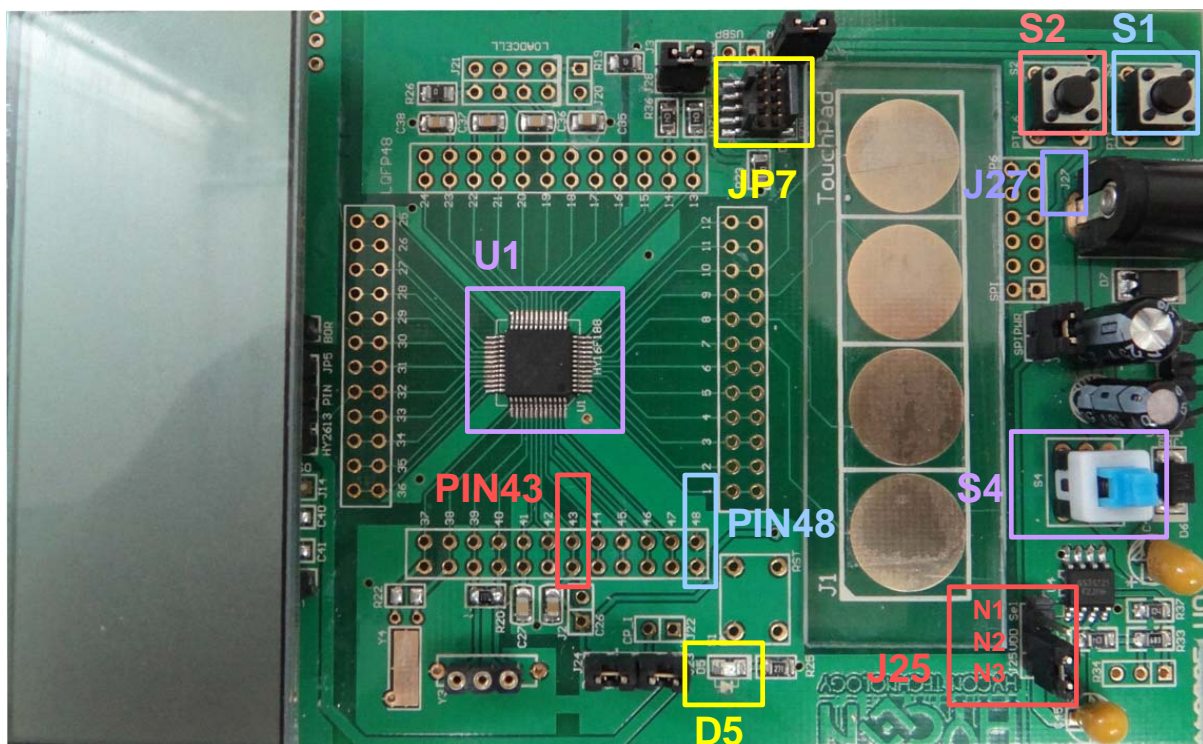
Step 01: If to select 3.3V safe voltage for Pin header J25, N2 and N3 must be short circuit
Step 02: Connecting 9V power to J27
Step 03: Press S4, observing whether LED of D5 was lighted on
Step 04: If LED is not light up, check the voltage between PIN43 & PIN48 of U1. Normally, it should be 3.3V.
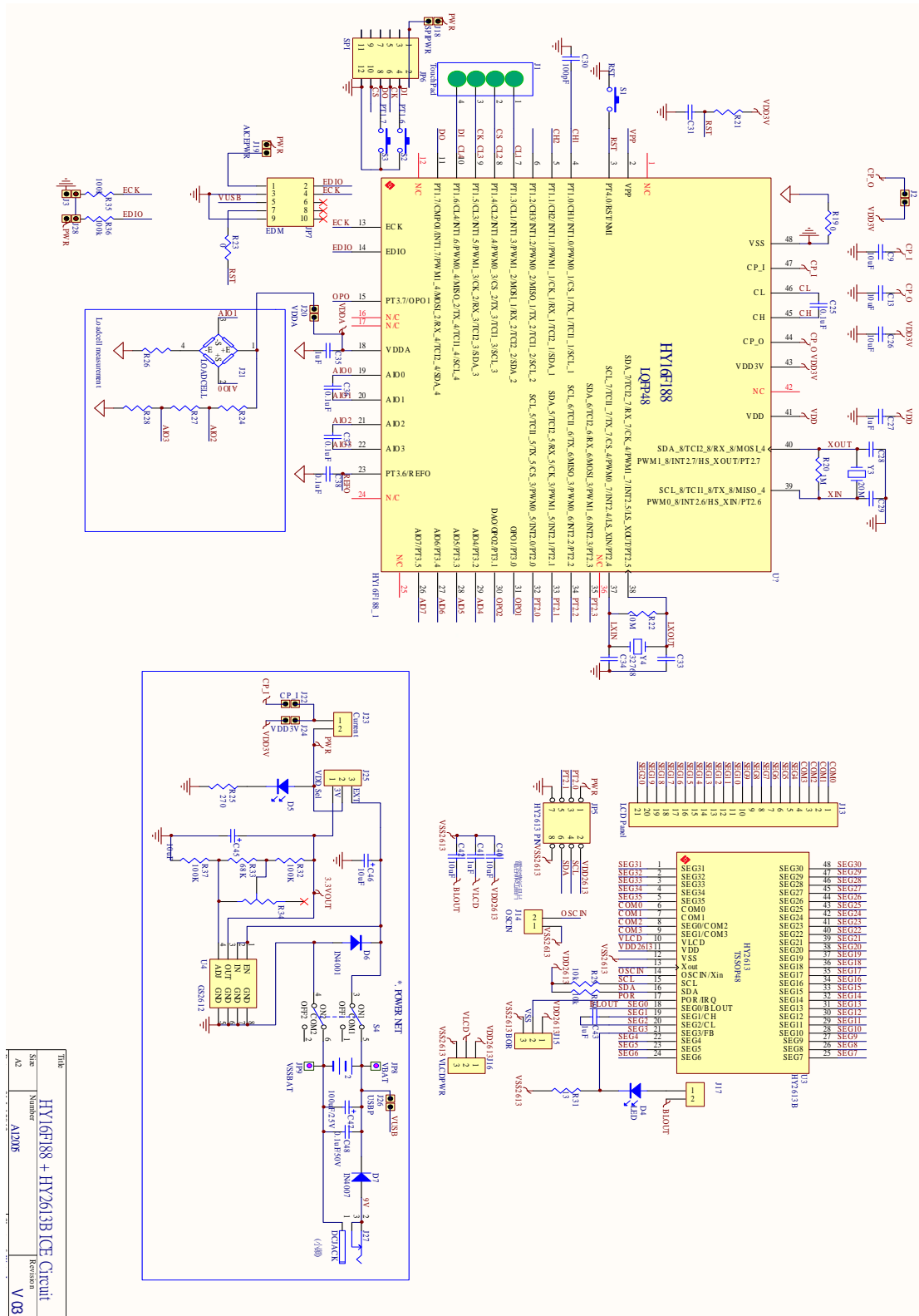Step 05: After IC powered on, connecting AICE to JP7 of EDM.

※S1 & S2 is GPIO button
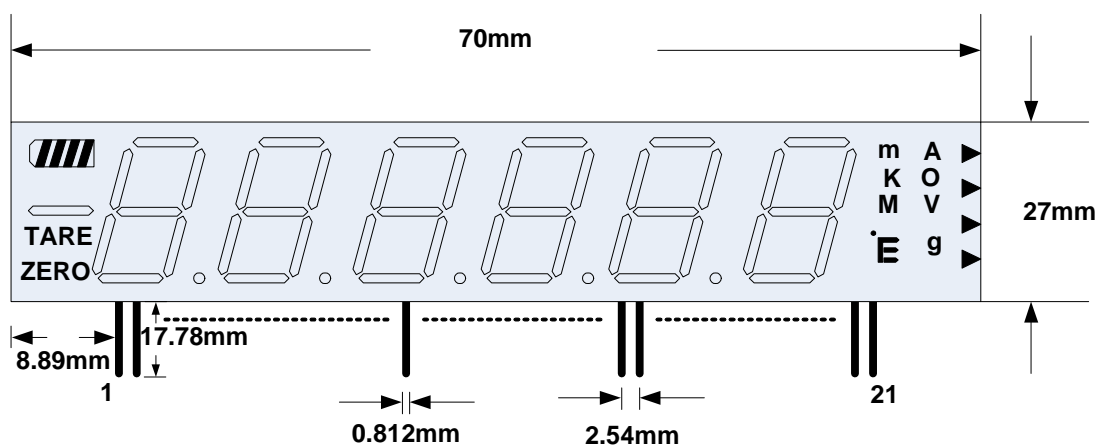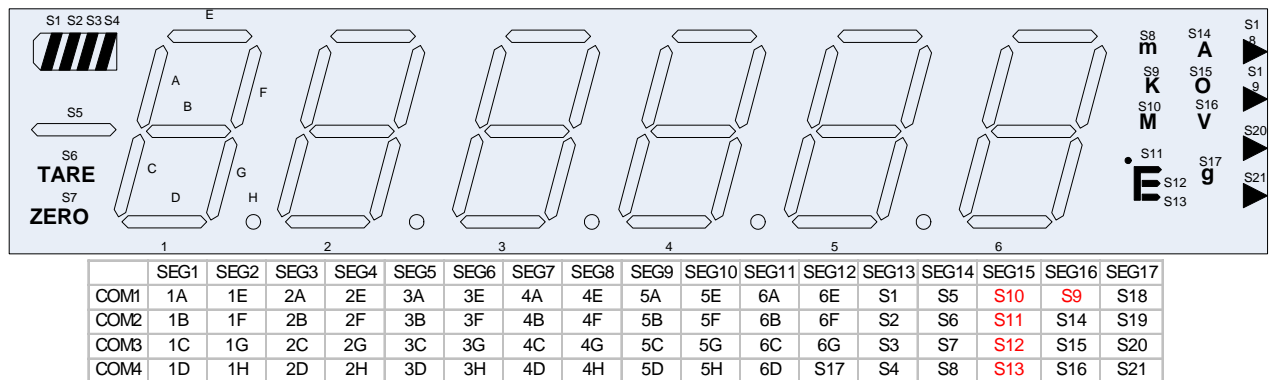※There is another HYCON Device on the board, LCD driver IC, HY2613B.

HY16F188 + HY2613B ICE Circuit

4. LCD Board Introduction

The LCD panel on HY16FICE-Target 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

	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	SEG7	SEG8	SEG9	SEG10	SEG11	SEG12	SEG13	SEG14	SEG15	SEG16	SEG17
COM1	1A	1E	2A	2E	3A	3E	4A	4E	5A	5E	6A	6E	S1	S5	S10	S9	S18
COM2	1B	1F	2B	2F	3B	3F	4B	4F	5B	5F	6B	6F	S2	S6	S11	S14	S19
COM3	1C	1G	2C	2G	3C	3G	4C	4G	5C	5G	6C	6G	S3	S7	S12	S15	S20
COM4	1D	1H	2D	2H	3D	3H	4D	4H	5D	5H	6D	S17	S4	S8	S13	S16	S21

| PIN	1	2	3	4	5	6	7	8	9	10	11
I/O	COM1	COM2	COM3	COM4	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	SEG7
PIN	12	13	14	15	16	17	18	19	20	21	
I/O	SEG8	SEG9	SEG10	SEG11	SEG12	SEG13	SEG14	SEG15	SEG16	SEG17	

5. Hardware Connection Introduction

LED of D5 address will be lighted up when power on.

EDM connection test:

(1) Connecting AICE to AndeSight of PC to observe AICE version information

AICE version: hw_ver = 0X10001, fw_ver = 0X3, fpga_ver = 0X2

(2) Target board connection test, selecting HY16F188 as main chip
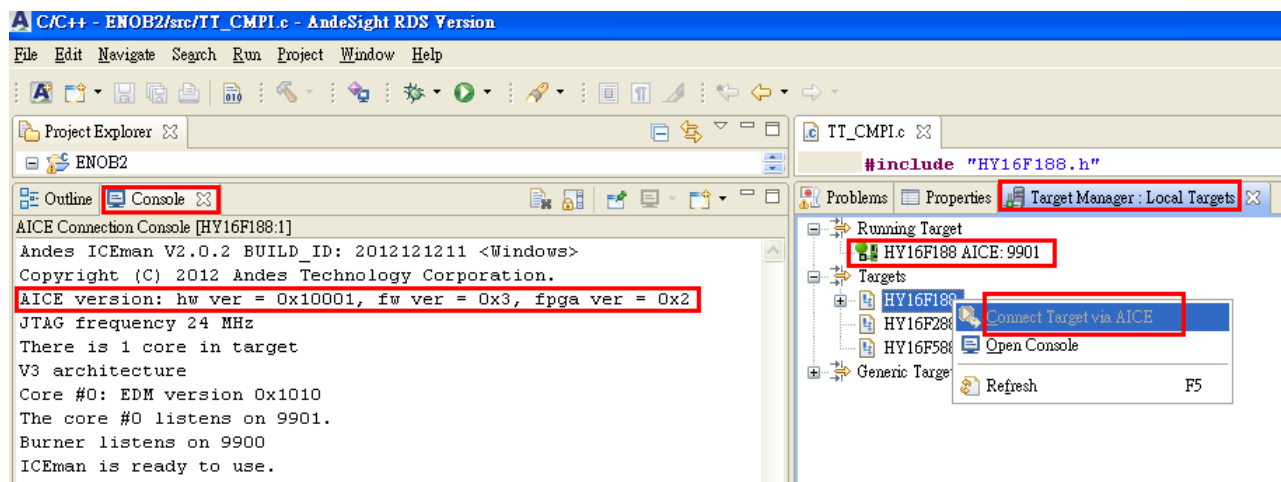
6. Revision History

Major differences are stated hereinafter:

Version	Page	Revision Summary	Date
V03	ALL	First Edition	2013/09/09