

AVR USBISP+ V4.0 for specialist(Model:AD-USBISP+ V4.0)

NEWTC Co., Ltd.

<http://www.NEWTC-en.com>

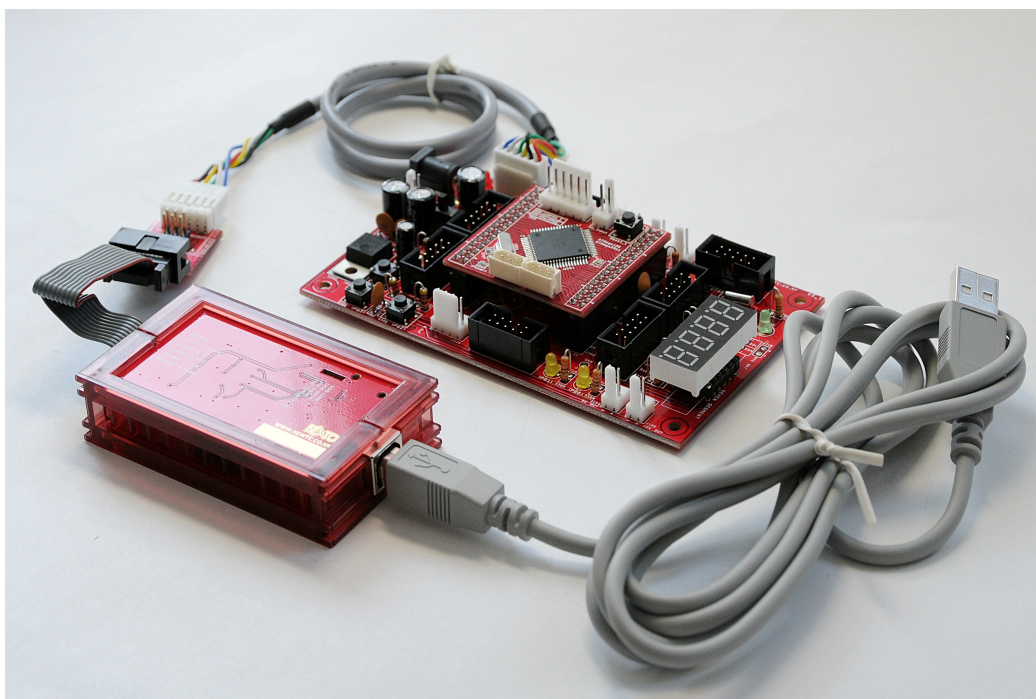
Date : Oct. 1, 2010



1 Introduction to AD-USBISP+ V04 development equipment

- ◆ ISP (In System Programming) development equipment for AVR
 - It is possible to download and test any user written program to the internal program memory of AVR(Supports Flash Read/Write)
 - Download is possible to any 8 bit AVR micro controller that supports ISP of ATMEGA2560, ATMEGA2561, ATmega128, ATmega32, ATmega16 and ATmega8 etc (3.3V/5V Compatible)
 - **This device can be used with 8051 compatible 89Sseries microcontrollers like AT89S52 and AT89S51 etc**
- ◆ Supported S/W (Various lectures available at <http://www.NEWTC-en.com> webpage)
 - Automatic downloading after compiling by ICC-AVR V6.xx, V7.xx, V8.xx
 - **CodeVision C Compiler**
 - ◆ Support V1.24.6 Commercial Release and above (V1.24.7F is not supported)
 - ◆ Stable operation possible from V1.25x and above
 - **Support latest AVR STUDIO Version 4.18 ~ 4.13**

2 AD-USBISP+ V4.0 development equipment H/W



Connection between USB-ISP and AB-M128-A boards

2.1 ISP connector Pin out

1row 6 pin					
1. MOSI	2. MOSI	3. SCK	4. RST	5. GND	6. VTref

Two row 6 pin		
1. MISO	3. SCK	5. RST
2. Vtref	4. MOSI	6. GND

Two row 10 pin				
1. MOSI	3. NC	5. RST	7. SCK	9. MISO
2. Vtref	4. GND	6. GND	8. GND	10. GND

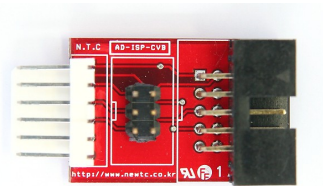
※ PDI, PDO can be connected to 1st and 2nd pin of ATmega128 and AVR's that do not have PDI,PDO can be connected using MOSI,MISO

※ Function of each pin

- > MOSI Master output Slave input > MISO Master input Slave output
- > SCK Master clock out > RST Reset signal
- > Vtref Target board voltage > NC Not Connect

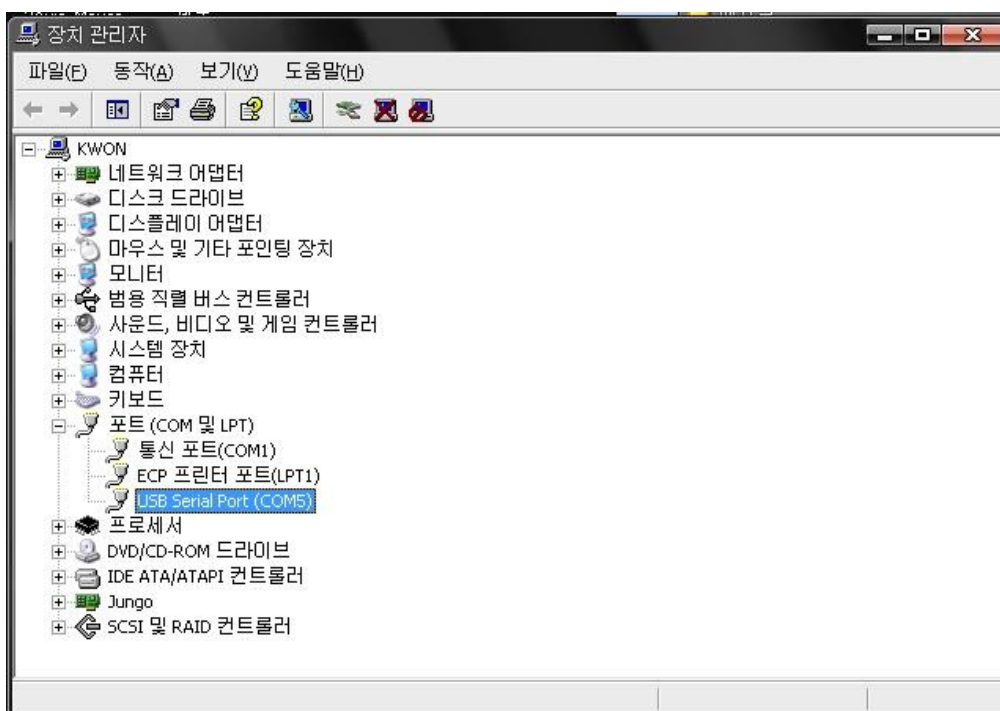
2.2 How to use the standard 6P and 10P Connector

AD-ISP-CVB converting board can be used to download to boards that are made with the standard 6P or 10P connector. Converting board is included with the price of USBISP but you need to buy it separately in case of USBISP-L.



3 Method to use Software

3.1 USB Driver Installation



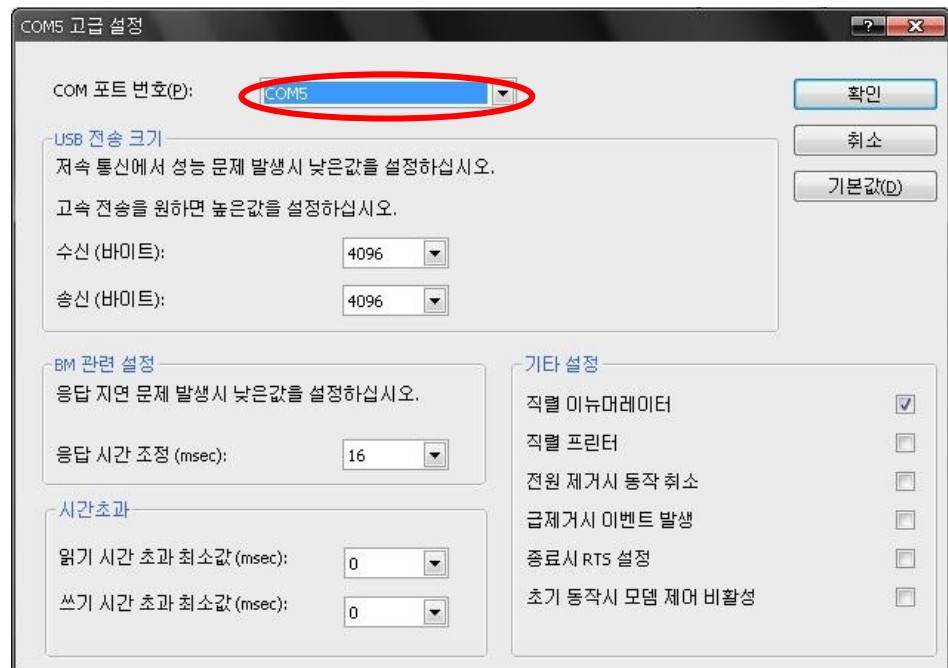
- 1 Download the USB-ISP+V4.0 driver (Refer below URL) provided in the document store of the NEWTC home page.

Home Page URL: <http://www.NEWTC-en.com> (Data center)

- 2 Device is detected when AD-USBISP+ V4.0 is connected to the computer USB port. As shown in the picture, the device is visible under the port device category My Computer Hardware Device Manager

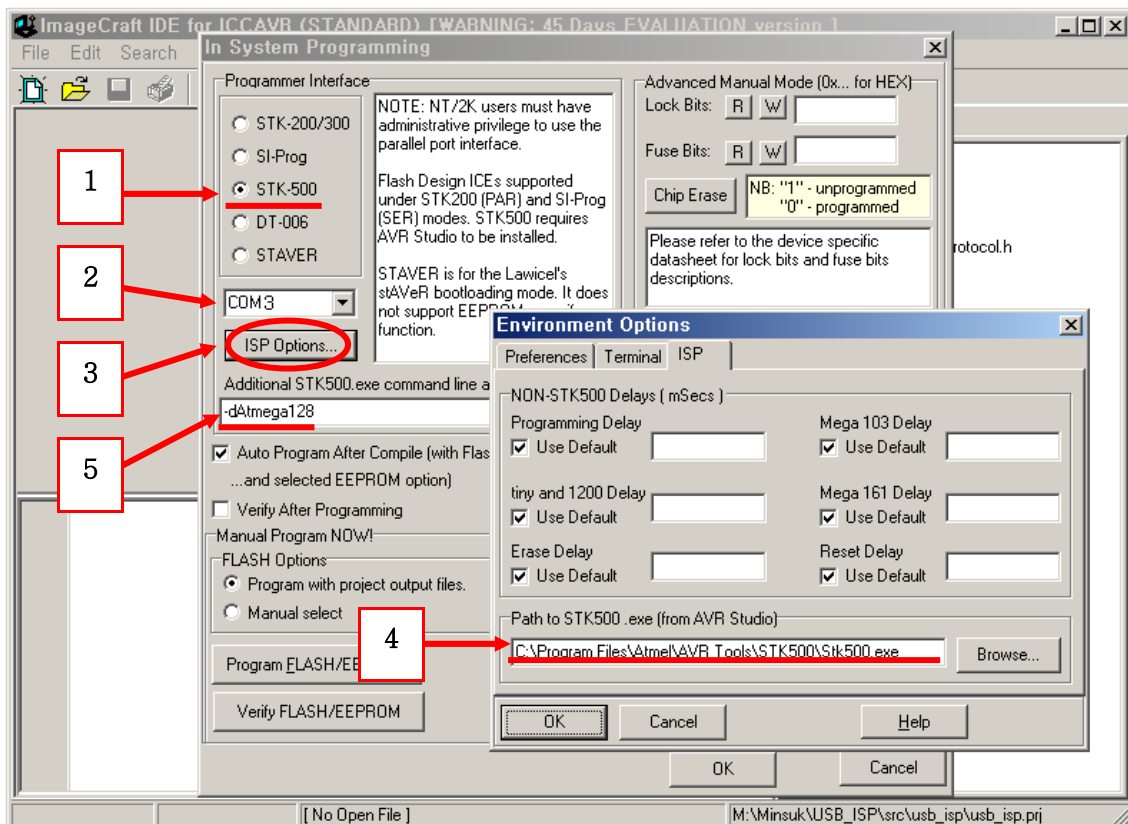
In this picture it is shown as COM5, but it may be different on different Computer, so please confirm before using the AD-USBISP+ V4.0

- ※ If you need to change the COM port, select the USB Serial Port, right click the mouse and click properties→Port settings→Advanced→COM and change the port number. (Refer below picture)



3.2 Program Setting

3.2.1 Use from ICC-AVR



First install AVR Studio (Download from (NEWTC) web page or ATMEL web page) and check the location of the file Stk500.exe

(Generally it is located under the folder C:\Program Files\Atmel\AVR Tools\STK500)

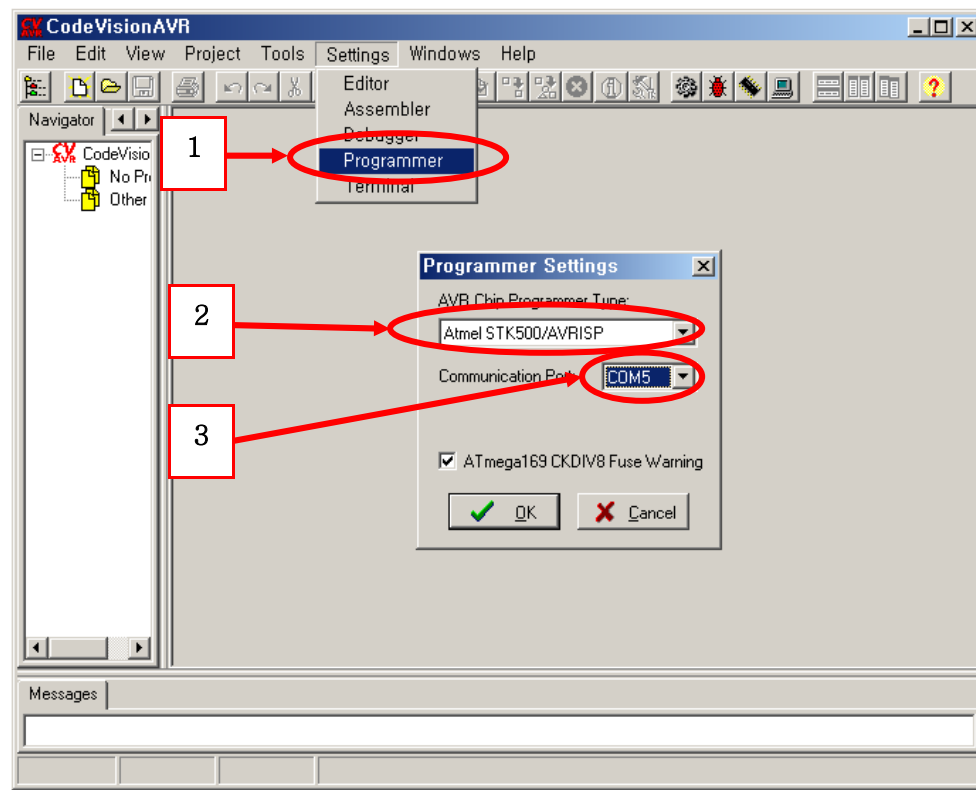
The above window appear when you execute the ICC-AVR and Click Tool > In System Programmer

- 1 Select STK-500 (USB-ISP works in STK-500 mode)
- 2 Select the COM port number that was earlier set during driver settings.
- 3 Click the ISP Options
- 4 Browse and find the Stk500.exe file when the Environment Options window appears.
- 5 When using the ATmega128 enter –dATmega128 (When using other AVR, leave it blank.)

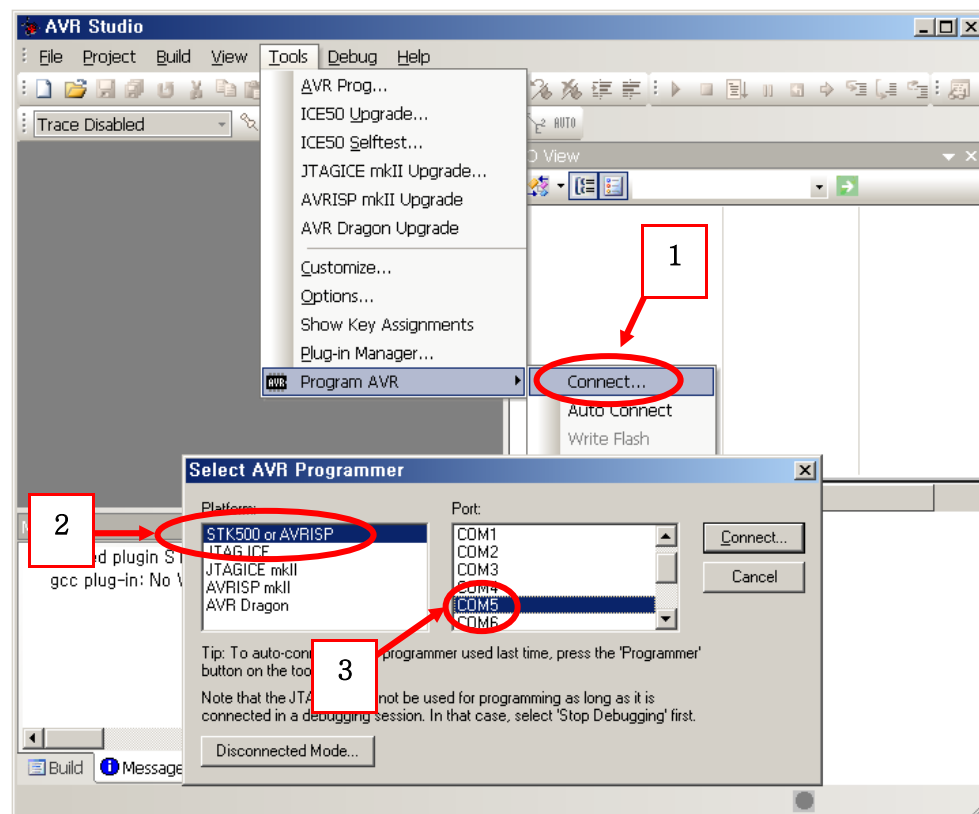
* Once setting is done as explained above, USBISP can be used from ICC AVR.

* To write the fuse bit from ICCAVR, use –dATmega128 –fD9EF –FD9EF –EFF –GFF option in the 5th item ‘Additional STK500.exe command line’. It gets written automatically when writing the Flash with 0xFFD9EF

3.2.2 Use from CodeVision AVR



3.2.3 Use from AVR STUDIO



4 LED indication related

With USBISP+ V4.0, the LED indicator has become clearly defined. There are 4 LEDs in Total, and you can see the individual function from 4 LEDs each. Each LED name is written in outside of PCB with white silk screen.

- 1) **USB LINK** is turned on when USB is connected to PC correctly.
- 2) **USB DATA** will blink when PC and USB chip is transferring DATA correctly.
- 3) **ISP DATA** will blink when USBISP and target board is transferring DATA correctly.
- 4) **ISP CONNECTOIN** is turned on when target board is connected, and also this LED will blink when the voltage of target board is abnormal(under 1.5V or over 6V)

5 Epilog

5.1 Product Enquiry and Thank you Note

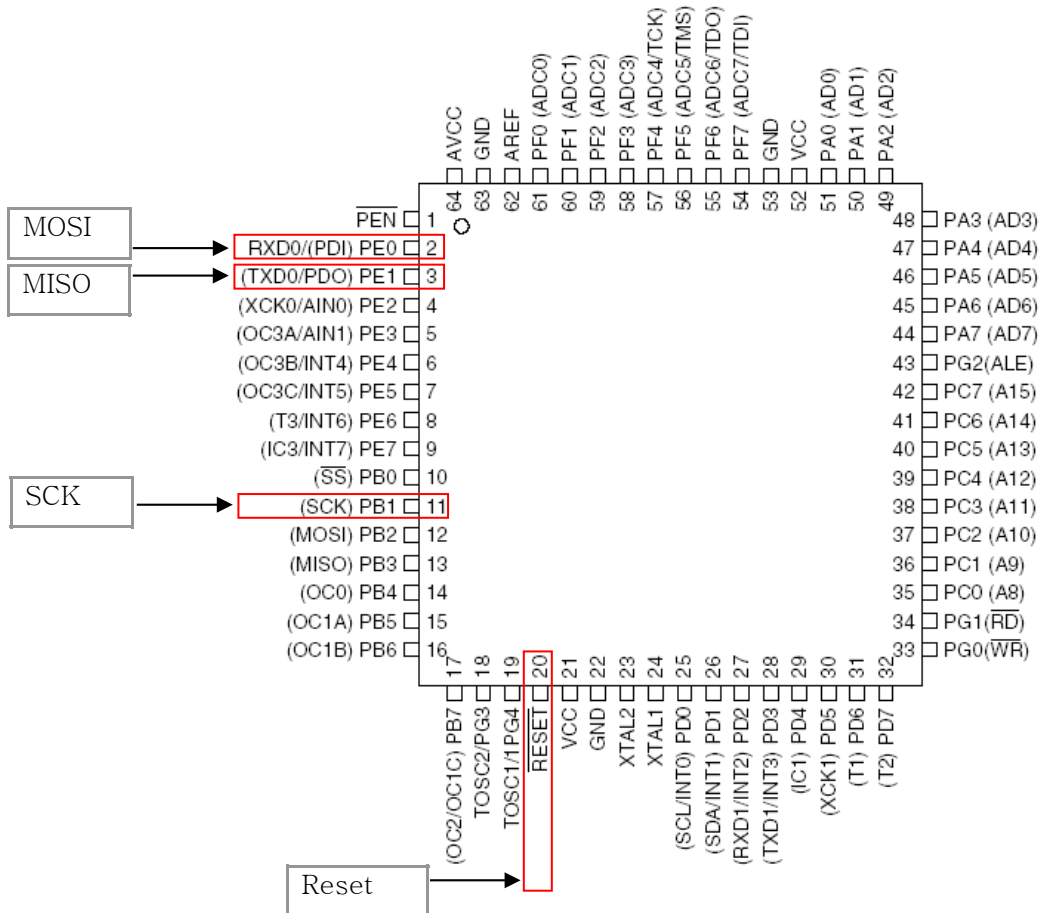
We are thankful to you for buying NEWTC Co., Ltd product. Our company would put maximum effort towards development to enhance the convenience of AVR users. If you hope to use this module you will require handling microprocessor like AVR's. If you intend to study further then you may either use the exercises included with the kit or refer the lectures available in our web page.

5.2 Technical support web page

<http://www.NEWTC-en.com>

Various types of technical documents like AVR lectures, Electronics engineering lectures , lectures on Robot manufacturing etc are available at the Technical Support web page <http://www.NEWTC-en.com>. You may refer to the various useful files and application programs etc that are updated on a regular basis. If you have any query related to product A/S please write it without any hesitation in the Q&A section of our web page. If you have any query related to product development send E mail to (david@newtc.co.kr). Thank you.

ATmega128



ATmega16

