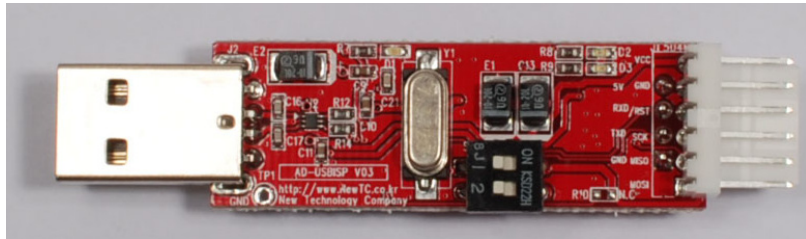


AVR 용 USB-ISP V03 (Model : AD-USBISP V03(-L))

New Technology Company

http://www.NewTC.co.kr

April 21, 2009



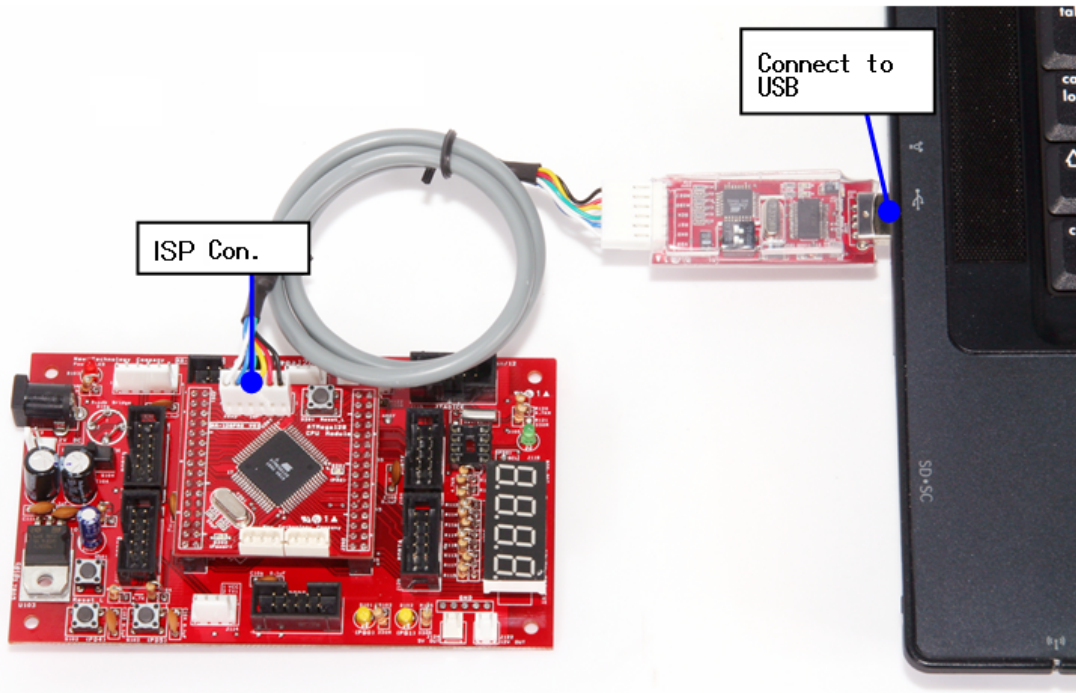
AD-USBISP V03(-L)

1 AD-USBISP V03개발 장비 소개

- ◆ ISP(In System Programming) of AVR
 - In AVR flash memory, user can make, download and test the program (Supports Flash Read/Write)
 - All AVR MCU like ATMEGA2561, ATmega128, ATmega32, ATmega16, ATmega8 ISP can download to MAX flash memory size of AVR (Compatible to 3.3V/5V)
 - Supports for S series of ATMEL 8051 like AT89S52, AT89S51 (Compatible to 3.3V/5V)
 - Faster and many downloading speed.
 - Supports for control of Fuse bit and Lock bit in AVR
 - Supports for Internal EEPROM Read/Write
- ◆ Possible to use USB to Serial(TTL Level) connector (By the way, cannot use with USBISP 6 pin connector at the same time in one MCU)
- ◆ S/W (<http://www.NewTC.co.kr>)
 - ICC-AVR compile and download
 - CodeVision C Compiler
 - ◆ Supports for over V1.24.6 Commercial Release (V1.24.7F is not supported)
 - ◆ Stable operation over V1.25.x
 - Supports Latest AVR STUDIO 4.16, 4.15, 4.14, 4.13 SP1, SP2, 4.12.
- ◆ Connection with AVR
 - Connect VCC, GND, Reset, MOSI/MISO/SCK. In ATmega128, connect AVR PDI/PDO/SCK of AVR to MOSI/MISO/SCK of AVR ISP)
 - Connect Target board and USB-ISP and power up to target board.
 - Possible downloading using ICC-AVR, Codevision, AVR Studio

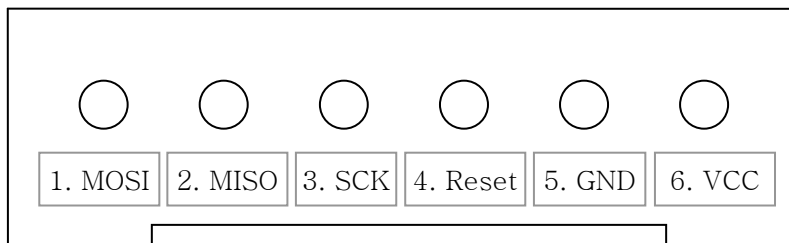
2 AD-USBISP H/W

2.1 Connecting H/W



Connection of USB-ISP and KD-128Pro-C

2.2 Pin Description of ISP Connector

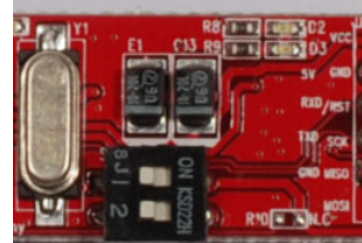


1	MOSI or PDI
2	MISO or PDO
3	SCK
4	Reset
5	GND
6	VCC

※ In ATmega128, connect #1 and #2 of ISP connector to PDI, PDO of AVR, and if there is no PDI, PDO, connect to MOSI, MISO of AVR

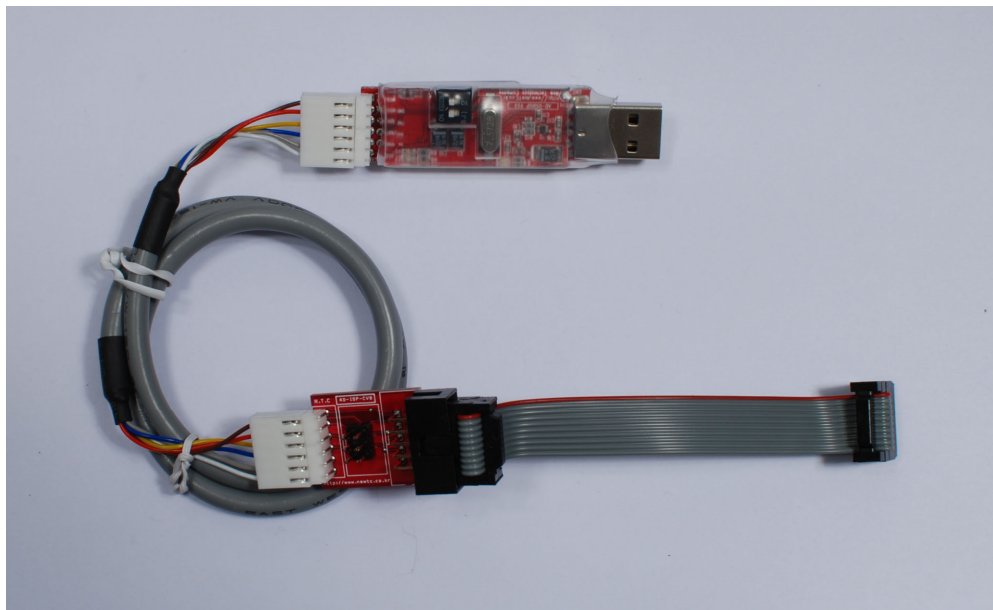
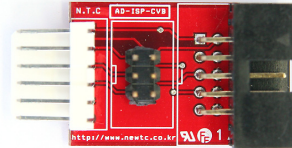
2.3 How to use USB bus power

If you want to use USB power using USB-ISP, DIP #1 to ON, then you can use USB power as AVR power., but this power should use just for small current under 10~200mA only. If you use motor or many currents with this power, then, it can corrupt USBISP or USB port. In USB of normal PC, you can use till 100mA generally, and recommend to use under 500mA, but actually, PC maker make with their spec, so usable current is small, so please use under 100mA Default setting is OFF (LEFT).



2.4 6P to 10P connector

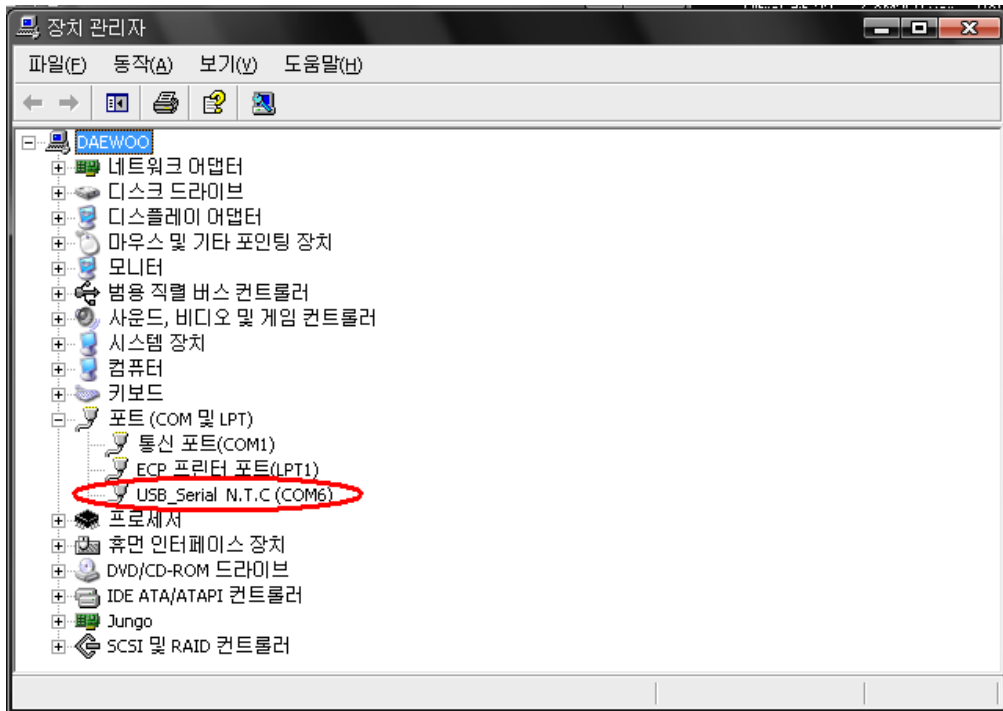
Using AD-ISP-CVB converting board, you can download the program to AVR using 6P or 10P ISP connector If you buy USBISP, then converting board is inside, but for USBISP-L you should buy converter later.



AD-USBISP V03(Support 10pin, 6pin connector)

3 How to install S/W

3.1 Installing USB driver



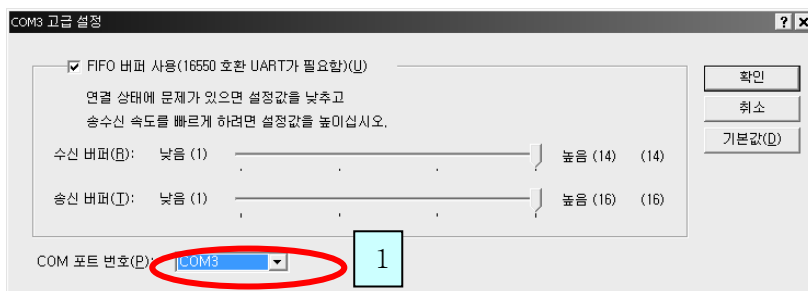
Most of all, install USB-ISP driver from NewTC website as the following.

- The following-

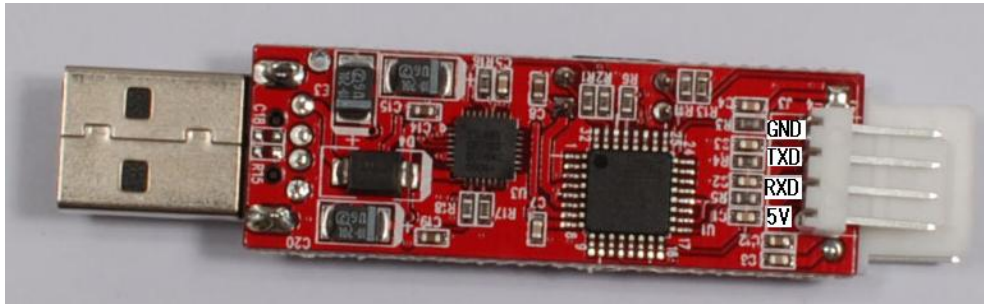
http://www.newtc.co.kr/download/AD-USBISP/AD-USBISP_V03_XP2K.zip

Connect USBISP to USB port of computer. If you extract the file, then you could see DriverInstaller.exe, install this, then it will install USBISP driver. If USB-ISP is connected You could see N.T.C USB Serial Port from Windows-Start>Control panel->System →hardware→device manager

Over here, you could see COM6, but each computer or usb port can have different virtual COM port, so you should check the port number. (If you want to change COM port, then click left in USB_Serial N.T.C, and click right of mouse, and properties→port setting→advanced->you can change com port number). In some computer system can need booting after changing port number by force.

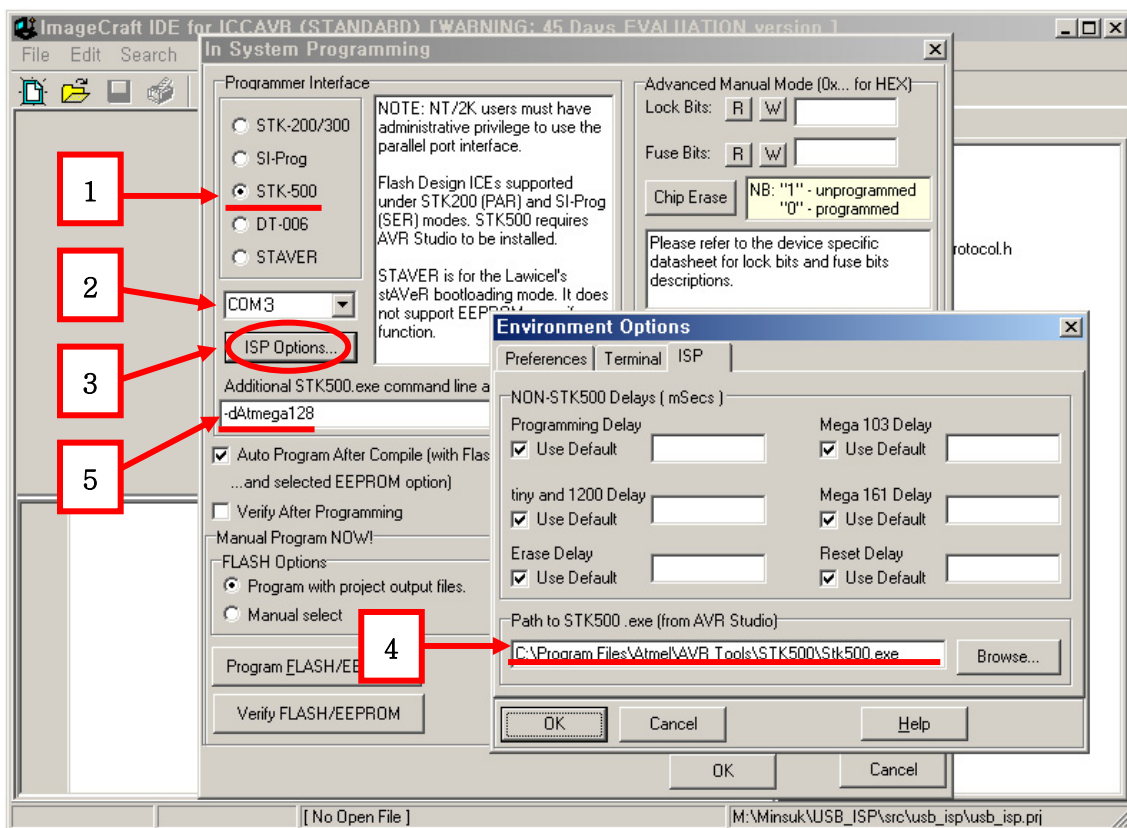


3.2 USB-UART 커넥터 핀 번호



3.3 Programming setting

3.3.1 Using with ICC-AVR



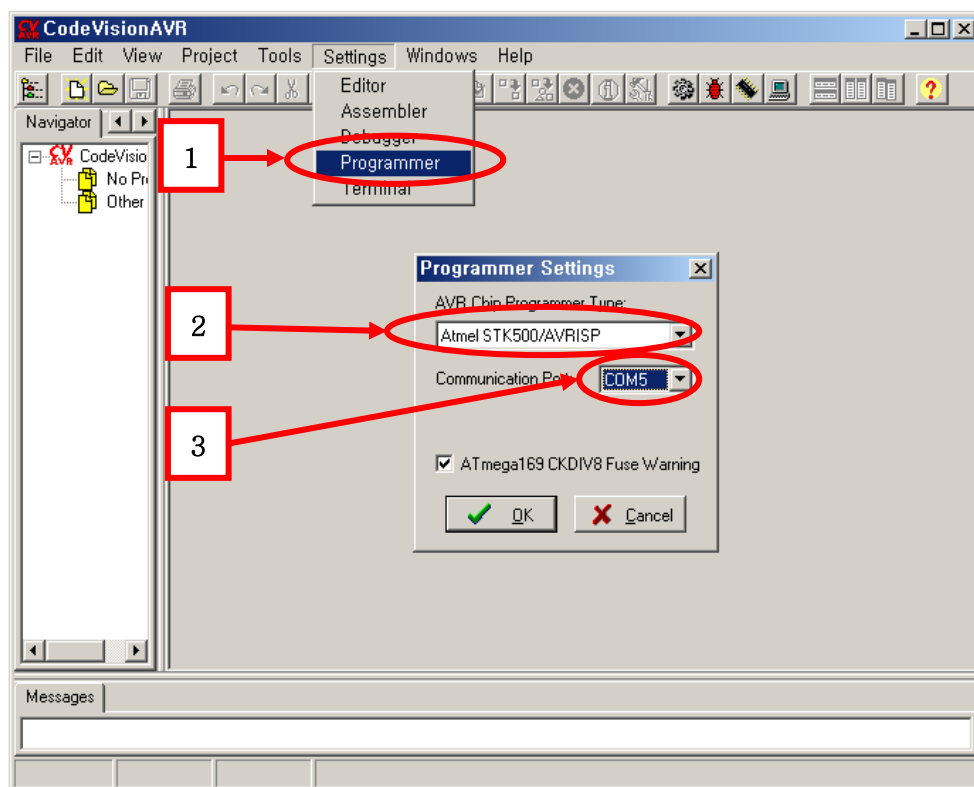
Most of all, download and install AVR Studio from NewTC or ATMEL website, and find the location of Stk500.exe (In general, C:\Program Files\Atmel\AVR Tools\STK500)

After executing ICC-AVR, click Tool > In System Programmer.

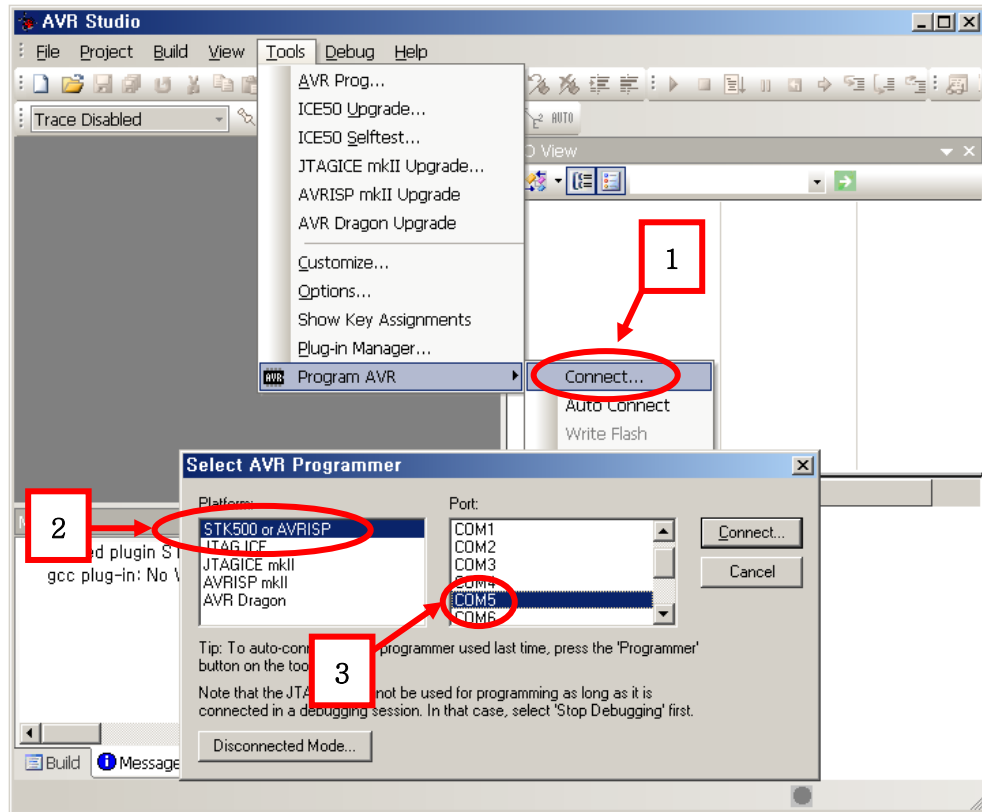
- ① Select STK-500 (This USB-ISP works as STK-500 mode)
- ② Select COM port number.
- ③ Click ISP Options, and

- ④ You will see Environment Options, and find Stk500.exe or write the location of STK500.exe over there.
- ⑤ If you use ATmega128, write -dATmega128. If you use other AVR, you can leave it as blank.
- * If you set like above, you can use USB ISP in ICCAVR
- * If you want to write fusebit in ICCAVR, In 5 (Additional STK500.exe command line.....), write -dATmega128 -fD9EF -FD9EF -EFF -GFF, then it will write 0xFFD9EF to Flash program when programming.-

3.3.2 Using in CodeVision AVR



3.3.3 Using in AVR STUDIO



4 About LED

When version up to USBISP V03, LED representation changed very clearly. It has 5 modes. If USBISP is connected to PC, blue LED is ON.

- 1) ISP downloading mode : Red LED ON. Green LED OFF
- 2) ISP downloading finish : Red LED OFF. Green LED ON
- 3) Normal state (When USBISP is connected with PC or target board with power ON)
: Red LED OFF. GREEN LED Blinking at almost 1 times / sec.
- 4) USBISP is not connected to target or target power is OFF.
: Red LED blinking. Green LED OFF.
- 5) Download error : For 4 second, Red LED and Green will blink together, and it enters to normal state.

I mean, if USBISP is connected to PC USB, LED AVR is not connected then, LED will blink in red. /RESET of USBISP, and /RESET of target AVR ON, then LED will blink as green. When downloading, red LED will be ON. After download, green LED again will be ON, and after some time green LED will blink.

% In 89Sxx series, LED blinking, ON/OFF will be changed between RED and GREEN.

5 Epilog

5.1 Contact point and appreciation letter

I appreciate you for buying the product of my company. We are always trying to make it convenience for AVR user to use easily. If you want to use this module, you need to control microprocessor or PC. To study this, you can ask the example by Q&A of website or email, and also you can refer the lectures from website of our company

5.2 Technical support

<http://www.NewTC.co.kr>

In website, there is so many lectures and library, and over there you can download AVR lectures, electronic lectures, robot making lectures, and in the library, we are updating and uploading many example files, application programs, and datasheets, so refer it, please.

If you have any A/S or inquiry, then do not hesitate to contact with me, and you can use Q&A of website. If you want to develop something, you can email me(E-mail (dauidryu@newtc.co.kr)). Thank you.

