

Atmel AVR 2323 Adapter for AVR Development Board

Features

- Enables AT90S2323 parts to be programmed in the development board.
- Accepts both DIP and SOIC parts.
- Adds 5V ISP features to the development board.
- May be used as standalone programmer for AT90S2323 parts.

Description

The Atmel AVR 2323 Adapter is used to interface the AT90S2323 to the MCU00100 development board. It may be used for both 8-pin DIP (AT90S2323-PC/PI) and 8-pin SOIC (AT90S2323 -SC/SI) parts.¹ It includes an In-System Programmer (ISP) connector for 5V applications. Together with an ISP, it may be used as a standalone programmer for S2323.

Software Requirements

The use of the AVR 2323 Adapter requires AVRProg ver. 1.25 or higher and Development Board SW 7.4 or higher.

I/O Pin Mapping

The programming pins (i.e. the SPI interface pins) on the S2323 are connected to the corresponding programming pins on the development board. As the SPI signals are mapped on different port pins on S2323 than on the baseline parts, the PortB I/O pins on the S2323 will be found on different PortB pins on the development board. Table 1 shows how the PortB pins are mapped from the adapter to the development board:

Table 1: Pin mapping to Development Board

PortB I/O pins	
S2323	Development Board
PB0/MOSI	PB5
PB1/MISO/INT0	PB6
PB2/SCK/T0	PB7
PB3/XTAL1	PB3,XTAL1 or NC
PB4/XTAL2	PB4,XTAL2 or NC

¹ The SOIC part is about 50mil wider than the pad layout on the adapter. This should be kept in mind when mounting the device.

Atmel **AVR**
2323 Adapter
for **AVR**
Development
Board

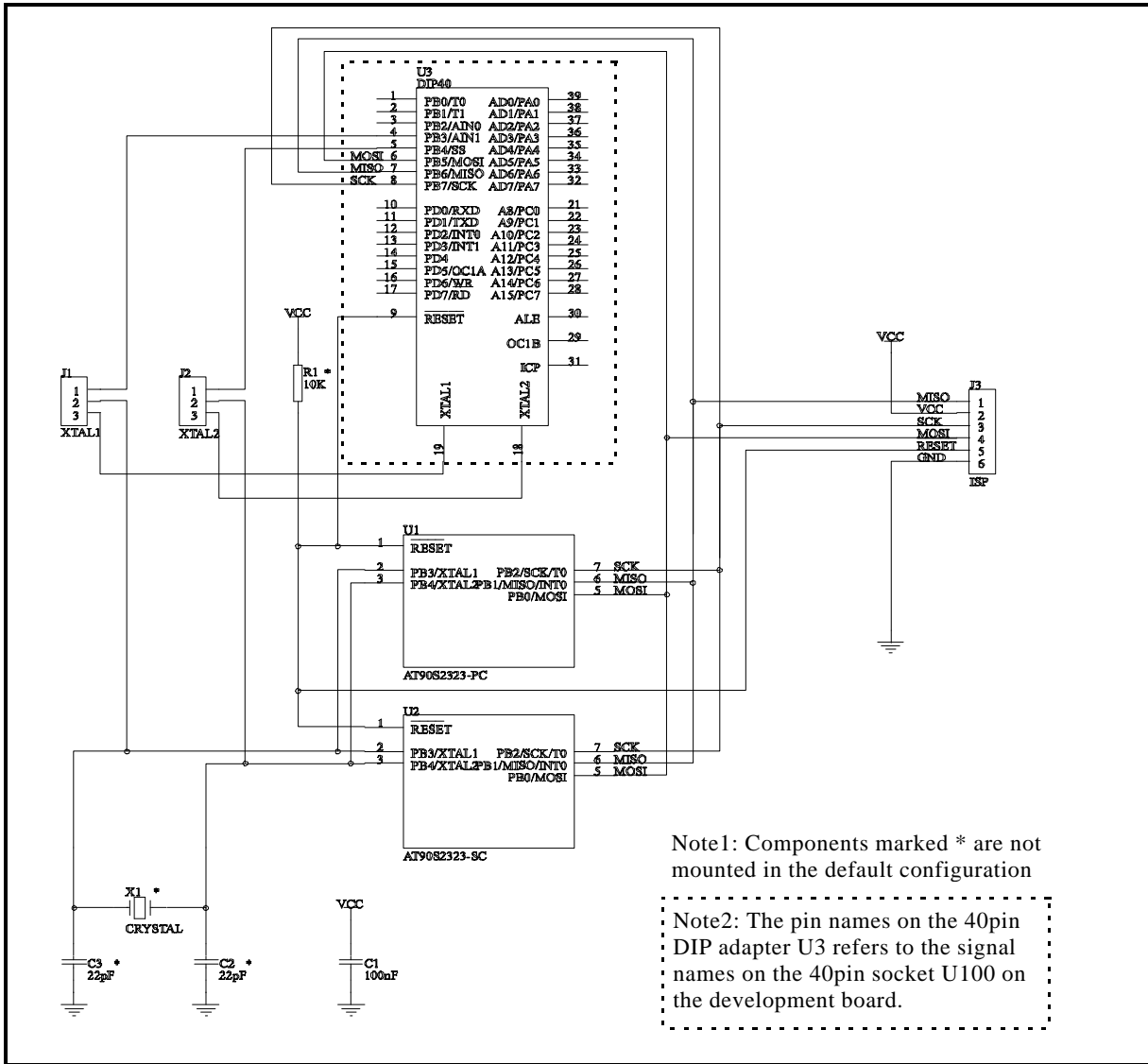


Figure 1: Schematics

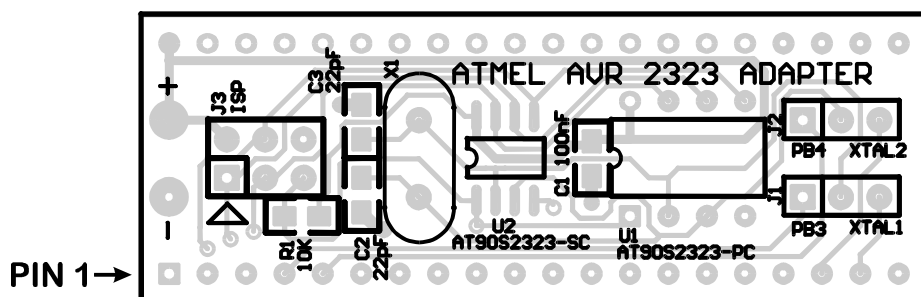


Figure 2: Component layout

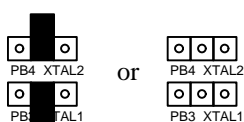
Jumper Settings

OPERATION USING THE EXTERNAL CRYSTAL ON THE DEVELOPMENT BOARD



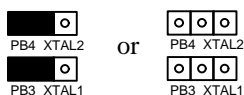
The PB3/XTAL1 pin and the PB4/XTAL2 pin on the S2323 are connected to the XTAL1 and XTAL2 pins on the development board. PB3 and PB4 are not available as I/O pins. Note that the wire length from the crystal to the XTAL pins on the S2323 is quite long, so this setting may in some cases cause oscillator problems. This is especially the case if extra sockets are used between the development board and the adapter. If oscillator problems occur, consider using a crystal on the adapter instead.

OPERATION USING AN EXTERNAL CRYSTAL ON THE ADAPTER



In this case, both jumpers are disconnected. The crystal X1 and the 22pF capacitors C2 and C3 must be mounted on the adapter. PB3 and PB4 are not available as I/O pins.

OPERATION USING THE INTERNAL RC OSCILLATOR



If the internal oscillator is used, the PB3/XTAL1 pin and the PB4/XTAL2 pin on the S2323 may be connected to the PB3 and PB4 pins on the development board (or left unconnected). This is the only mode of operation in which all five I/O pins can be used.



ISP programming

If no S2323 part is installed on the adapter, the ISP connector can be used to program devices in external systems. As the development board has a fixed 5V supply, this is only possible for target systems using a 5V supply. The ISP connector in the target system should be designed as described in application note AVR 910. The ISP connectors may then be connected together with a 1:1 cable.

Note: If the target application and the development board are powered from different 5V supplies, the VCC pin in the ISP (pin2) should be left unconnected.

Standalone ISP operation

The adapter may be used as a programming adapter together with an ISP programmer. (See application note AVR 910.) The pull up resistor on the reset line, R1, must be installed. An external crystal on the adapter or the internal RC oscillator may be used. See description under jumper settings. Power supply connected to +/- pads may be in the range 2,7-6V.