

◆ Compact:
60×55×16mm

◆ Flexible:
Parallel/Serial
connection

◆ Fast:
Complete
program and
verify cycle for
8515 in less
than 30secs

◆ Comprehensive:
Programs all the
features of all
the devices

◆ Easy:
Intuitive
development
environment

- ◆ Win95/98/ME
- ◆ Win2000/NT4

Device Support:

- ATtiny12
- ATtiny13
- ATtiny15
- ATtiny22
- ATtiny26
- ATtiny2313
- AT90S1200
- AT90S2313
- AT90S2323
- AT90S2343
- AT90S2333
- AT90S4414
- AT90S4433
- AT90S8515
- AT90S8535
- ATmega48
- ATmega8
- ATmega88
- ATmega8515
- ATmega8535
- ATmega16
- ATmega161
- ATmega162
- ATmega163
- ATmega168
- ATmega169
- ATmega32
- ATmega323
- ATmega64
- ATmega103
- ATmega128



PSI ISP

Parallel Serial Interface In System Programming for AVR devices from the leaders in ISP technology

Why ISP?

Why use ISP in your application? The device can be programmed after soldering which allows "one build, later customisation", separate test code vectors can be programmed first for function testing before programming with finished code, field upgrades are easy - it makes sense to use ISP - and this ISP is FAST!

Kanda Multi-connector



Which PC connection to use? Always a tricky decision but PSI solves the problem with our industry leading ISP system featuring a PC Printer Port &



Serial Port multi-connector. It gives you the flexibility to choose any free port on your PC, making it ideal for development, field or production use.

DLLs Available

Need even more flexibility or want to integrate into your existing systems? No problem, as a DLL version is available so you can build the programmer into your existing software. Compatible with Delphi, C++, Visual C, Lab View, etc. Please contact sales

Compact Size



Your workbench and briefcase space is always at a premium, so this compact design will fit right in. You will be pleased to know that the Programmer powers

itself from your target system so no additional power supply is required. The ISP connector is the Kanda designed AVR standard to reduce electrical noise problems and to fit with all existing designs

Low Voltage devices

Unlike other programmers on the market, the PSI supports low voltage and standard voltage parts alike. What is more, it selects the correct voltage automatically so you can forget about the problem. Updates for device support are available over the Internet.

DLLs
Available



MISO	SCK	RESET	LED	MOSI
9	7	5	3	1
10	8	6	4	2
GND	GND	GND	GND	Vcc

Kanda.com

Supports:

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- ATmega323
- ATmega64
- ATmega103
- ATmega128

Including Low Voltage devices

Order Code:

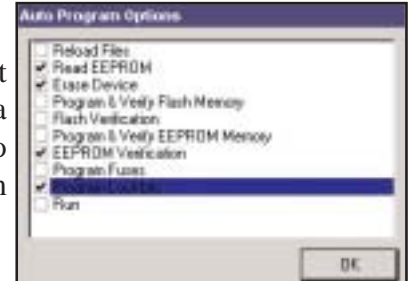
PSI-ISP

Fast and Reliable

PSI is one of the fastest programmers on the market, and a complete program sequence for an 8515 - Flash, EEPROM and fuses programmed and verified - is done in 30 seconds! ISP timings can be adjusted to give you the best settings for the device type you are using, and the CRC checksums ensure complete confidence in correct programming. Data polling on all supported devices also equals faster, more reliable programming, especially on the mega103, which uses our unique polling methodology.

Auto-program

As well as being ideally suited for the development environment the ISP has some added extras for use on a production line. The Auto-program facility allows you to customise the program sequence and then perform complete program cycles with a single click.



Fuse Options



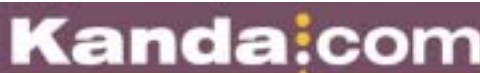
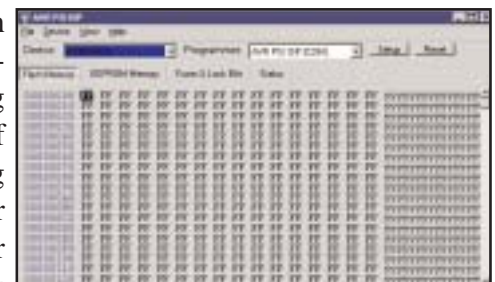
Available fuses vary between different AVR devices, which can cause problems. The PSI automatically gives you the correct fuse choices for the device you have selected and includes the extended fuses for the mega163. All fuses and lockbits are available for reading and writing. The RC calibration byte feature is also supported.

User Interface

The user interface has been carefully designed to provide "easy operation", coupled with advanced features for the power user. The PSI is project based giving you save and load options for all your settings, making it simple to restart after a break. The standard erase, read, program and verify functions are available via single mouse click or keyboard shortcut and Auto-program makes repetitive device programming really easy.

Powerful Hex Editor

The programmer includes a hex file editor, which allows you to edit and view your file prior to programming the device. This is useful for making small changes to your program code outside of your development environment such as including serial number information, calibration settings or applying manual patches. Verification after programming or verifying a device against a file is simplified by colour coding to give an instant visual check. And no more worries about your file type as the editor Auto-detects different file formats including Intel Hex, Motorola, Binary and Atmel Generic.



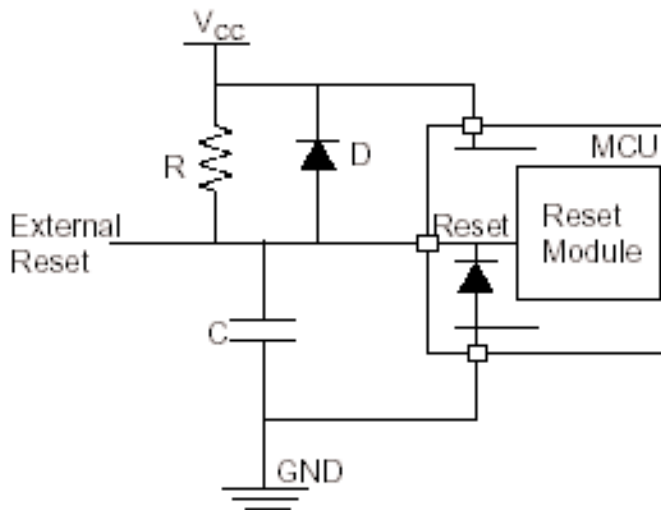
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Web: www.kanda.com

Target Circuit Layouts

This section deals with connections to the AVR microcontroller for In System Programming. The rules and suggestions given do not have to be followed in all circumstances but failure to include some features may lead to problems with In System Programming.

Different programmers have more or less tolerance to deviation from these rules, but in general they should be followed. Atmel give recommendations for circuits connected to reset pin and programming lines that err on the side of caution. These circuits are shown here with Kanda recommendations on the following pages.

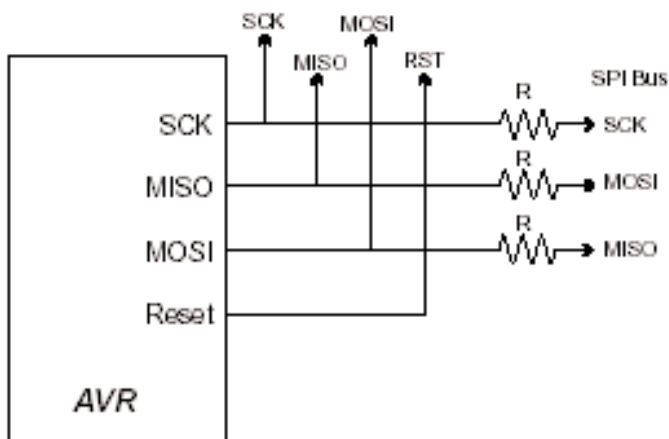


Atmel's recommended Reset Circuit

Note that Atmel recommend a diode in the reset circuit. This is not generally required for Kanda programmers.

Atmel recommend a 10 nF capacitor and a 4K7 resistor. We favour a 100nF capacitor and 10K resistor. Choose something in this range.

Note: 1. Typical values are:
R = 4.7 kΩ
C = 10 nF
D = 1N4148



Atmel's recommended Programming Lines Circuit

The recommended resistor values are 4K7 to isolate user applications from programming lines.

Capacitors on Reset Line

We do recommend that a capacitor is included on the Reset line. It should be placed as close as possible to the Reset Pin on the AVR i.e. it should be closer to the Reset Pin than any resistor. We recommend a 100nF capacitor and a 10K resistor. Larger capacitors may mean that the programming speed must be reduced. Capacitors on the programming lines will not cause a problem as long as they are less than 100nF, otherwise programming speeds must be reduced.

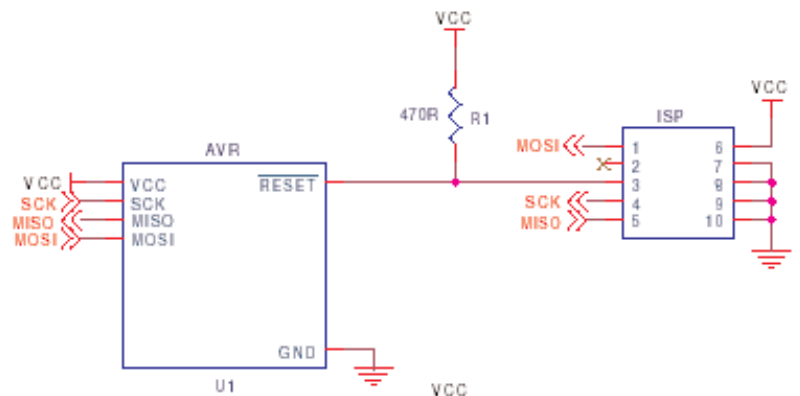
The following diagrams of correct and incorrect circuits do not include any capacitors. As long as capacitors are placed next to the AVR pins, then they will not affect the circuit.

GENERAL

Examples apply to all programming lines (MOSI, MISO, SCK and RESET). Applies equally to pulldown resistors.

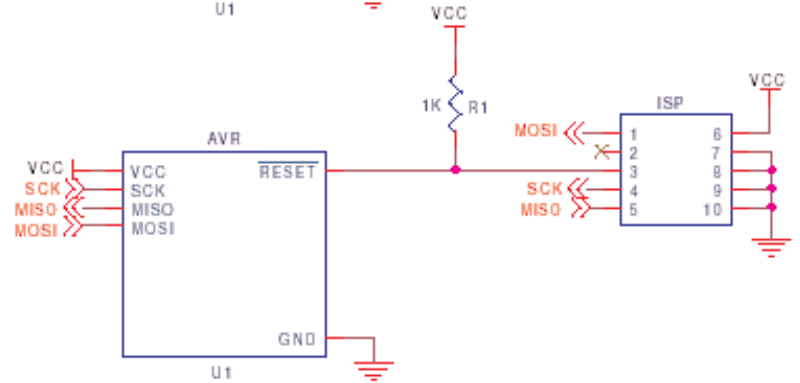
NO

The Pull-up resistor, R1, is too strong.



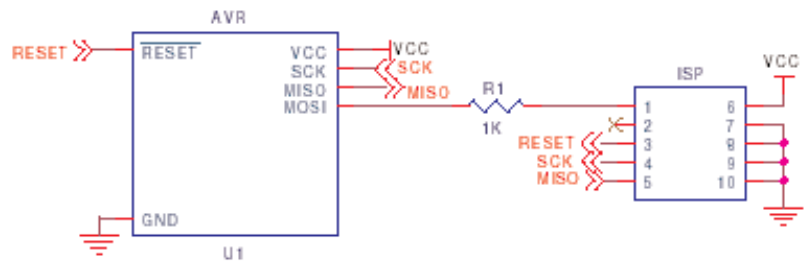
YES

The Pull-up resistor, R1, is no stronger than 1K



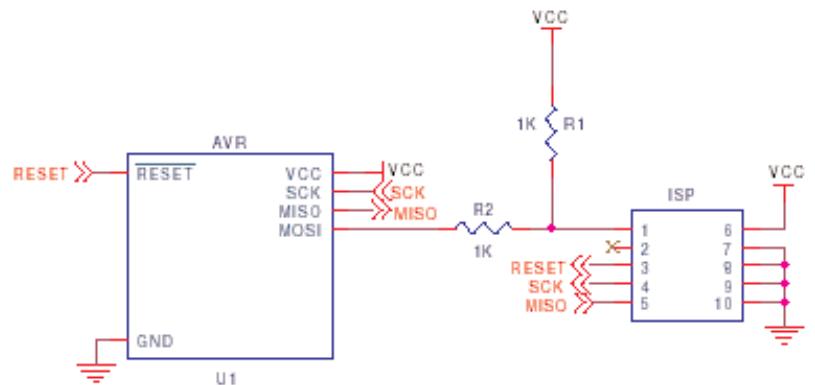
YES

A resistor in series; by its's self, will have no effect.



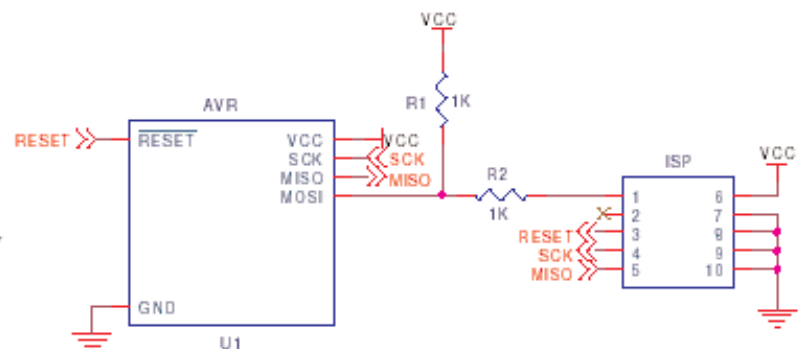
YES

Again, the series resistor will have no effect.



NO

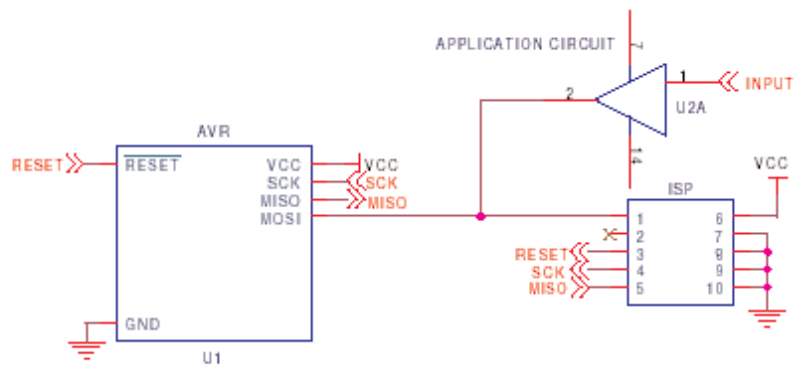
This is a potential problem. As the series resistor will weaken the programmer's ability to act on the programming line.



APPLICATION CIRCUIT USING ISP PORT PINS

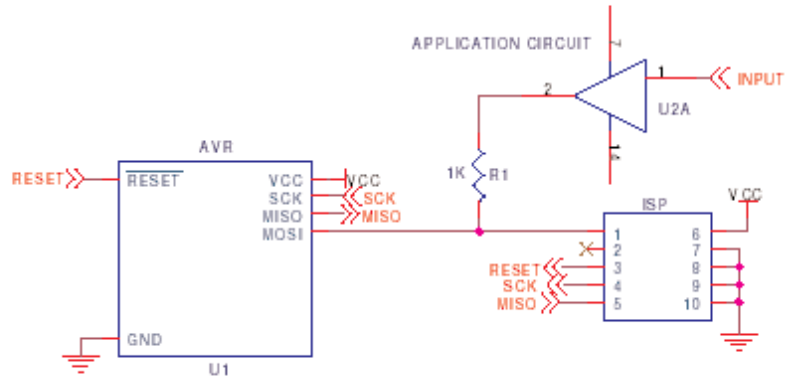
NO

Here, the application uses PB5 as an INPUT to read the output of U2. The state of the line is held by U2.



YES

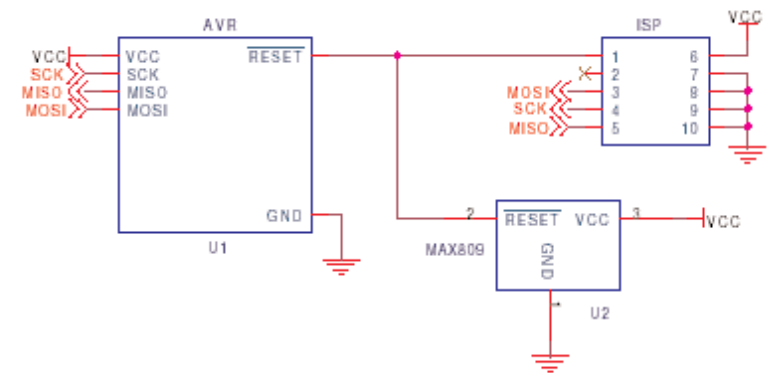
Again, PB5 is used as an INPUT to read the output of U2, but this time; The output of U2 is sufficiently decoupled by R1



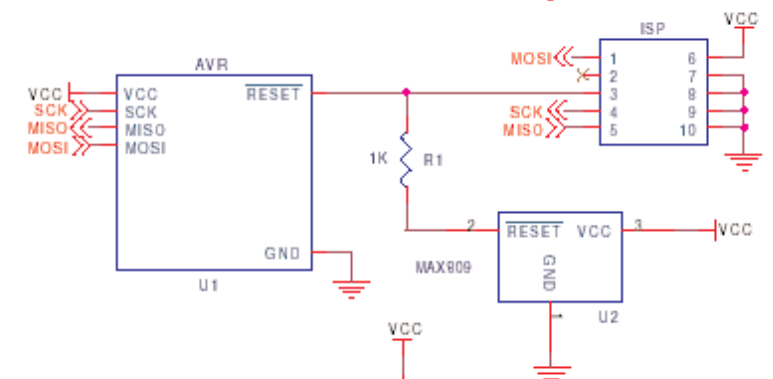
RESET IC's

NO

The commonly used brown-out IC MAX809 as a PUSH-PULL output. It will hold the RESET line high.



YES



YES

The MAX803 IC is equivalent to the MAX809 - BUT as an OPEN DRAIN output.

