

Small RF Budget

SRB-JTAG3+

Programmer for CPLD's, FPGA's and AVR's
 V1.0.1

Thank you for choosing our programmer for Xilinx® CPLD's and FPGA's as well as Atmel® AVR's! This small unit takes the problems (and cost) out of programming for these very versatile digital circuits.



This programmer resembles the obsolete Parallel 3 cable from Xilinx® with additional circuitry to allow programming of all targets running at 1.8 to 5V (see info below!). This is a big advantage as the later programmers for this voltage range are far more expensive. The SRB-JTAG3+ works together with the free design software provided by Xilinx®, (<http://www.xilinx.com/>) just select Parallel 3 as the programmer and it's done.

Programming of targets with a supply voltage of less than 3.3V with the SRB-JTAG3+ requires an external regulated power supply of 3.7 to 5VDC. This can either be a special USB cable (the USB port only acts as a power supply) or a regulated 5VDC power supply. Programming of 5V targets is only possible if the PC printer port is able to deliver a high voltage of more than 3.9V. Modern interfaces tend to cheat and only deliver 3.3V high voltage. In this case the maximum target voltage is limited to 4.5V. The SRB-JTAG3+ can still be used but instead of hooking up pin 1 of the programming connector to the 5V target voltage it has to be supplied with a voltage from 3.7 to 4.5V (from an external supply or via a

resistive divider on the target board).

In addition to being able to program CPLD's and FPGA's this programmer can also be used to program Atmel® AVR controllers. However, up to our knowledge, it will only work with AVRDUDE (<http://savannah.nongnu.org/projects/avrdude>) with the SRB setup file (download from the site where you purchased the SRB-JTAG3+ from). Together with WinAVR (<http://winavr.sourceforge.net/>) or it's equivalent set of programs for Linux® it integrates nicely into a universal development environment. In short: get one programmer and use it for several applications! To use the SRB-JTAG3+ as an AVR programmer a special cable is required (optional).

The connection to the PC parallel port (LPT) can be extended with a D-sub 25-pin male-female cable. However, make sure that the cable you purchase has all wires and is not only a reduced functionality printer cable! A simple way to make such a cable is to use a male and a female clamp-on D-sub connector and a flat ribbon cable.

Pinout of the DB9 female programming connector:

The pinout of this connector was chosen to give the same wire sequence as the original Xilinx® cables. To reduce cross-talk there's a ground wire between all signals.

Pin	JTAG	FPGA	ISP
1	Vcc	Vcc	Vcc
2	TCK	CCLK	SCK
3	TDO	D/P	MISO
4	TDI	DIN	MOSI
5	TMS	PROG	RST
6-9	GND	GND	GND

To use the SRB-JTAG3+ as an AVR programmer a special cable is required (optional). The pinout does NOT directly fit the ISP pinout selected by Atmel® via a ribbon cable.

Available accessories:

cable SRB-JTAG3+ to target (DB9 to flying lead), one included

cable SRB-JTAG3+ to AVR target (DB9 to 6-pin connector)

cable SRB-JTAG3+ to AVR target (DB9 to 10-pin connector)

USB-Power cable

5VDC Power Plug (power supply)

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