

## AVR-USB-JTAG DEVELOPMENT TOOL FOR AVR MICROCONTROLLERS WITH JTAG INTERFACE

### Features:

AVR-USB-JTAG (complete analog of ATMEL's AVR JTAG ICE) is development tool for programming, real time emulation and debugging for AVR microcontrollers with JTAG interface (ATmega16, ATmega32, ATmega323, ATmega162, ATmega169, ATmega128 and all other future to come). AVR-USB-JTAG have: JTAG 10 pin connector (Atmel layout), status LED, USB type A connector.

AVR-USB-JTAG works transparently with AVRSTUDIO as it uses USB to RS232 driver inside and AVRSTUDIO just finds ATJTAGICE connected to the virtual COM port which FT232 driver installs. AVR-USB-JTAG allow debugging on all new computers and notebooks which have no RS232 COM port and removes all problems which occur when unknown/uncertified USB to RS232 port converters are used with the original RS232 based ATJTAGICE.

AVR-USB-JTAG is **optically isolated** from USB port, so you can debug directly connected to 120/220VAC mains targets.

AVR-USB-JTAG allows access to all the powerful features of the AVR microcontroller. All AVR resources can be monitored: Flash memory, EEPROM memory, SRAM memory, Register File, Program Counter, Fuse and Lock Bits, and all I/O modules. AVR-JTAG also offers extensive On-chip Debug support for break conditions, including break on change of Program memory flow, Program memory Break Points on single address or address range, and Data memory Break Points on single address or address range.

- AVR Studio Operated
- Full Emulation of All Analog and Digital
- Full JTAG Programming Support
- Supports Multiple Devices in a JTAG Scan Chain
- RS-232 Interface to PC

- Full Support for Assembly and High Level Languages
- Program and Data Breakpoints
- All Operations and Breakpoints are Real Time
- Upgrades are done from AVR Studio
- Target Voltage 3.0-5.0V
- No need for external power supply – power is taken from USB port

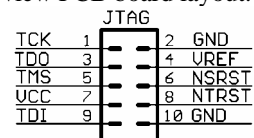
### Programming:

To work with AVR-USB-JTAG you need target board with JTAG connector (for instance Olimex's AVR-M16 + AVR-P40B-P8535-8Mhz) and AVRSTUDIO software ( you can download from <http://www.avrfreaks.net> in Tools section).

### JTAG interface:

The JTAG connector is 2x5 pin with 0,1" step and Atmel's compatible layout. The PIN.1 is marked with square pad on bottom and arrow on top. JTAG signals are: 1- TCK, 2- GND, 3- TDO, 4- VREF, 5- TMS, 6- NSRST, 7- UCC, 8- NTRST, 9- VCC, 10- GND.

JTAG TOP view PCB board layout:



### Virtual com port driver:

AVR-USB-JTAG uses FT232 USB to RS232 IC from Future Technology devices, you must download and install proper driver for your computer and OS from:

<http://www.ftdichip.com/Drivers/FT232-FT245Drivers.htm>

### Ordering codes:

AVR-USB-JTAG- assembled and tested