

# ZY1000 JTAG Probe



## ZY1000

- **ZY1000 JTAG Probe**  
Intuitive stand-alone JTAG Interface optimized for use with OpenOCD and GDB
- **Supported Processors**  
All variants of ARM7/9/9E, ARM11, Cortex A & M series, XScale, MIPS32, MIPS64, ARMv8
- **Flash Types Supported**  
NOR, NAND, SPI, and CFI
- **Configuration**  
Sample configuration scripts available.

The ZY1000 JTAG Probe is an intuitive stand-alone JTAG interface optimized for use with OpenOCD and GDB. In addition to performing common debugging tasks, the ZY1000 can also be used to program a wide range of flash devices, including CFI flash. With a few lines of code, users can create their own flash drivers for new or unique flash types. The ZY1000 probe provides an RS232 serial interface, as well as a standard 10/100 TCP/IP interface which enables users to access the probe from any host running Windows, Linux, Mac OS, or Unix.

The ZY1000 supports all variants of ARM7/9E, ARM11, Cortex A & M series, Xscale. MIPS32, MIPS64 and ARMv8 microprocessors. Support for other 32-bit RISC architectures is feasible and can be added as needed.

Unlike many JTAG Probes on the market, the ZY1000 offers a simple yet robust Web GUI to perform various tasks commonly used for software and hardware development, production testing, and diagnostics or kernel level debugging. With a JTAG speed of up to 32 MHz (target dependent) and upload speeds (GDB load) over 300 Kbytes/sec, the ZY1000 provides excellent performance when used as a flash programmer or debugger.

The ZY1000 includes sample configuration scripts for common off-the-shelf target boards which users can refer to and modify as needed to target custom hardware. These script files are used to setup the hardware's CPU, RAM and Flash memory.

The ZY1000 has three (3) different modes of operation that can be applied as needed. Setup of both the target hardware and the ZY1000 is done using the intuitive web interface enabling users to perform common tasks such as resetting the CPU, programming flash memory, or browsing and editing the target memory. The probe also provides a telnet server for users who prefer using a CLI or command line interpreter.

Software developers can also use GDB-Server for a full featured kernel level debugger, to leverage all the benefits of the Open Source GCC/GDB tool chain.

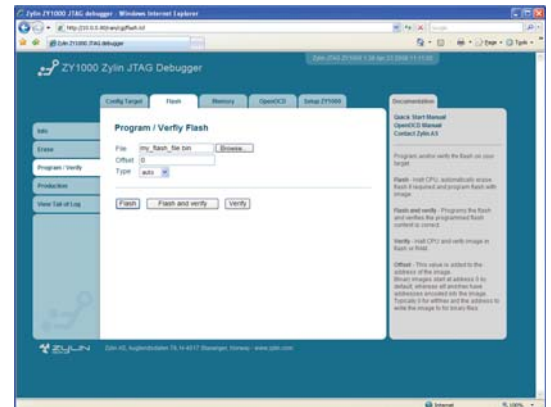
By design, the ZY1000 can easily be integrated into popular IDEs such as Eclipse, LinuxScope-JTD, Insight or DDD. With any one of these IDEs, users can set HW/SW breakpoints, single-step, browse and modify variables, memory and CPU registers.

Because the ZY1000 runs a full version of Altera's NIOS Linux, the product can be easily modified to target custom SoC's that embed some type of ARM or MIPS core.

# ZY1000 JTAG Probe



- Support for all ARM7/9/9E, Cortex series and common flash types. Users can easily add drivers for unique or custom flash devices.
- Configuration scripts for popular off-the-shelf target boards included. Users may select from a library that best matches their hardware (CPU/Flash/RAM...) and modify the scripts for use with custom hardware
- Extended remote capabilities. The ZY1000 uses TCP/IP for the communication with your PC. The ZY1000 also includes a remotely controlled relay that enables users to power-cycle their target remotely.



- Easy to use stand-alone JTAG debugger and flash programmer. No special operating system drivers required. Works with Windows, Linux, Mac OS and Unix
- Three different ways of using the ZY1000 based on the needs and skills of the user
- Web interface for target setup and common tasks like flash programming, memory browse/edit
- Telnet command line (OpenOCD) for advanced features and options
- GDB server for full debugging, including HW/SW breakpoints and single-step. Fully integrated into your favorite GDB debugger like Eclipse or Insight

## Specifications

### Hardware Connectors

- Power input 2.1/5.5mm 7-18V
- RS232 (9-pin DSUB) Basic setup
- RJ-45 Ethernet - only 100 Mb/s
- 20-pin ARM JTAG connector
- 14-pin EJTAG connector
- Power relay in/out. Web/telnet controlled relay to turn on/off power to your target

### JTAG Connector

- 20 pin/14 pin
- JTAG clock 10 kHz - 32 MHz
- Target voltage 1.8V to 3.3V
- GDB load speed > 600 Kbytes/s

### Supported Target Processors

- ARM7/9/9E
- ARM11
- Cortex A8, A9, M3, M4
- Xscale
- MIPS32/cnMIPS64
- ARMv8
- Contact USI for more processors
- Large target configuration library ready. Easily tweak existing target configuration for your own board

### ZY1000 Control Web Interface

- Unit setup
- Target configuration
- Common operations
- Flash programming
- Memory browse/Edit
- OpenOCD commands
- Quick profiling w/out recompiling

### Telnet Interface

- Complete OpenOCD command interface

### GDB Server

- Complete GDB server for interacting with debuggers like Insight and Eclipse. Support debuggers using GDB protocol
- Complete debugger capabilities, like support for both hardware and software breakpoints

### Supported Flash Types

- CFI Flash (Intel/AMD format)
- Wide range of flash types supported out of the box
- Contact USI for information about more flash types supported
- Use your own flash driver with a few lines of code (USI also offers design services)

### Kit includes

- ZY1000 unit
- JTAG cable for 14-pin/20-pin
- Power supply (110-220V)
- Adapters for world-wide power outlets
- Serial cable
- Basic Getting Started Guide
- User Manual (electronic delivery)

### System Requirements

- Any PC
- Any operating system
- Any web-browser for using the web interface
- Any telnet client for using the telnet interface
- Any GDB based debugger for using the GSB server
- RS-232 for initial (IP address) setup

