

Config. program V1.00
Firmware for BDI2000 V1.01
Logic for BDI2000 V1.01



Date: October 3, 2000
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Enhancements

- New Telnet command (BREAK) added to display and change current breakpoint mode.
- GDB binary downloading support added (X<memaddr>,<len>:bbbbbbbbb).
- User selectable Telnet prompt added. The Telnet prompt can be defined in the configuration file and also interactively changed during a Telnet session.
- Flash programming support for Atmel AT49 chips added.
- New flash erase modes support now chip and block erase.
- The flash programming function (PROG) now supports different file formats.

Error Correction

Config. program V1.00
Firmware for BDI2000 V1.02
Logic for BDI2000 V1.01



Date: Nov. 17, 2000
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Enhancements

- New Telnet command (CONFIG) added to display current BDI configuration.
- New Telnet command (FLASH) added to change the flash configuration interactively. This may be useful when running a Telnet script to program different flash memory systems on the target. For example if there is a 8bit boot flash and a 32bit main flash system.
- A HALT entered via Telnet sends a signal to GDB to inform it about the new target state. Stopping the target via Telnet may be necessary if GDB does not forward ctrlC to the BDI. This is sometimes the case when working with a GUI on top of GDB.

Error Correction

- Appropriate „eieio“ instructions added to the flash programming algorithm to enforce in-order execution of the flash accesses.

Config. program V1.01
Firmware for BDI2000 V1.03
Logic for BDI2000 V1.01



Date: Febr. 9, 2001
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Enhancements

- New Telnet command (DUMP) added to upload a binary memory image.
- Support for PPC401 (IOP480) added.
- With version 5.0, GDB can request additional register values based on the selected target processor type (GDB command „set processor“). The BDI now supports this extended register transfer. In order to be compatible with older GDB versions and to optimize the time used to read out register values, a new configuration parameter has been added. This parameter (REGLIST) allows to define groups of registers really read from the target. For example, you can define that you are interested in getting some SPR's but the BDI should not read the SR and BAT registers.
- Support for multiple devices on the JTAG scan chain added (see new configuration parameters).

Error Correction

- Error in syntax checker for Telnet command BD corrected.

Config. program V1.01
Firmware for BDI2000 V1.04
Logic for BDI2000 V1.01



Date: May 8, 2001
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Enhancements

- Faster programming for Intel StrataFlash.
- Support for GDB protocol Z-packet added.
- MMU support for Linux kernel debugging added. For more information see manual.
- New Telnet command (TLB) to display TLB entries added.

Error Correction

- Error when host uses 64k TCP window corrected.

Config. program V1.01
Firmware for BDI2000 V1.05
Logic for BDI2000 V1.01



Date: July 26, 2001
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Enhancements

- A List of valid memory ranges can be defined to avoid invalid memory accesses via the JTAG interface (MMAP entry in the init list).
- New configuration parameter added to define the target reset type (NONE,CORE,CHIP,SYSTEM).
- User gets full control over the PPC4xx watchpoint hardware.
- Linux MMU support has changed, see user's manual.
- The Telnet commands HALT and STOP forces the target to debug mode in two different ways. HALT asserts the HALT pin, STOP scans the stop command into the JTAG debug port.
- The HALT pin is asserted during a target power-up cycle. This prevents the target from executing any code after power-up.
- The Telnet TLB command outputs additional information.

Error Correction

- Correct PVR check to accept also future PPC4xx variants (e.g. STB03xxx).
- Correct memory access via MMU when accessing a data block that crosses a 4k page boundary.
- Error when host uses 32k TCP window corrected.

Config. program V1.01
Firmware for BDI2000 V1.06
Logic for BDI2000 V1.02



Date: Sept. 26, 2001
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Enhancements

- An alternate single step mode has been implemented. The alternate mode uses two hardware breakpoints to implement single step. This solves a problem when single stepping an instruction that leads to a TLB miss exception.
- The GDB „monitor“command can be used to access BDI Telnet commands.
- The RS232 port of the target can be routed via the BDI to a TCP/IP channel, see user's manual.
- Additional slower JTAG clock rates has been added, see user's manual.
- The address range used for MMU default translation has been increased to 128MB.
- For IOP480 targets, a parameter has been added that allows programming of AMD/Atmel flashes.

Error Correction

- The erase time-out for AMD flashes has been increased. This was necessary because of long chip erase time.

Config. program V1.01
Firmware for BDI2000 V1.07
Logic for BDI2000 V1.02



Date: October 22, 2001
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Enhancements

- Support for IBM PPC440 added.
Note for Linux MMU support: Only default translation is currently supported.
- New configuration parameter (STARTUP) added, see user's manual for more information.

Error Correction

Config. program V1.02
Firmware for BDI2000 V1.08
Logic for BDI2000 V1.02



Date: April 29, 2002
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Enhancements

- Linux MMU support for IBM PPC440 added.
- The new Telnet command RDUMP writes the values of all user defined registers to a file on the host.
- New configuration parameter (WAKEUP) added to support targets that need some wake-up time after reset / power-up.
- Position of the page present bit can be defined via the MMU XLAT parameter (see manual).
- While in debug mode, the MSR[PR] bit is cleared.
- Kernel size used for default translation increased to 256 MB.
- For PPC440, a TLB entry can be added / cleared via the WTLB Telnet command.
- During power-up of the target, TRST is forced low.
- The Windows setup tool is now a WIN32 application.
- BDI Firmware programming time improved for the Linux setup tool (bdisetup).

Error Correction

Config. program V1.01
Firmware for BDI2000 V1.09
Logic for BDI2000 V1.02



Date: August 6, 2002
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Enhancements

- Processing of GDB monitor command improved.
- Support for AMD MirrorBit flash added.
- To change the current PC value „rm pc <value>“ can be used.
- If the GDB monitor command is used to download an image via TFTP („mon load“), the BDI sends continuously dots to GDB to prevent a command time-out.

Error Correction

- PPC405: Error in host controlled watchpoint handling corrected.
- PPC440: Error when programming flash with workspace corrected. Programming was slower than without a workspace.

Config. program V1.01
Firmware for BDI2000 V1.10
Logic for BDI2000 V1.02



Date: Sept. 19, 2002
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Enhancements

- PPC440: Support for the 2-level page table added. The older firmware assumed a 3-level page table for PPC440 targets.

Error Correction

- Correct handling of MSR in case of a TLB exception while single stepping with STEPMODE JTAG.

Config. program V1.03
Firmware for BDI2000 V1.11
Logic for BDI2000 V1.02



Date: Febr. 18, 2003
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Enhancements

- Support for Xilinx Virtex-II Pro added.
- Support for network configuration via BOOTP added.
- New Telnet command added to unlock multiple (same size, continuous) flash sectors with one command.
- Improved Telnet „erase“ command to erase multiple (same size, continuous) flash sectors with one command.
- Support for 32 bit wide flash chips added.
- Improved Telnet interface with history buffer and line editing.

Note:

The BDI's ethernet MAC address will change with this release.
The setup tool displays the new MAC address.

Config. program V1.03
Firmware for BDI2000 V1.12
Logic for BDI2000 V1.02



Date: August. 20, 2003
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Enhancements

- Support for Multi-Core debugging added. Concurrent debugging of up to 4 daisy chained PPC4xx cores with different GDB sessions is now possible. Maybe used to debug Xilinx Virtex-II Pro devices with more than one 405 core.
- Support for 440GX added.
- New Telnet commands to flush and invalidate caches added.
- New Telnet commands to display L1 cache content added.
- The Telnet command „CONFIG“ allows to change the name and IP address of the configuration file. The new name and IP address is stored in the BDI's flash and a boot sequence is started.
- The register types IDCR5 - IDCR8 has been added. Now up to 8 indirectly addressable DCR ranges are supported in a register definition file.
- The file names in the configuration file maybe relative to the configuration file path.
- Low level JTAG commands can be entered via Telnet (see manual).

Config. program V1.04
Firmware for BDI2000 V1.13
Logic for BDI2000 V1.02



Date: March 11, 2004
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Enhancements

- The Telnet command „reset“ is now synchronous. This allows the use of it via a GDB monitor command. Also the handling of GDB monitor commands has been improved.
- New Telnet DELAY command added. Maybe useful when working with GDB command scripts.
- Optimized startup / reset sequence. If this new sequence does not work with your target anymore, please add a wake-up delay of about 100 ms (WAKEUP 100) to the BDI configuration file.
- A new configuration parameter allows to define the HALT signal as active high.
- When defining register names a new option (SWAP) allows to count for little endian registers (PCI).

Error Correction

- Correct definition of the predefined register (pc, msr, cr).

Config. program V1.04
Firmware for BDI2000 V1.14
Logic for BDI2000 V1.03



Date: January 28, 2005
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Enhancements

- The Telnet command „CONFIG“ allows to change all BDI network parameters. The new parameters are stored in the BDI's flash and a boot sequence is started.
- The page table search algorithm now also supports systems where the L1 page table entries are physical addresses (NetBSD).
- The flash unlock command has more features (see user's manual).
- The erase list accepts a new UNLOCK option (see user's manual).
- Telnet history buffer no longer filled with repeated commands.
- The SCANMISC parameter has a new parameter (see user's manual).
- On request, the BDI can assert a hardware reset via debug connector pin 13.
- The number of supported JTAG devices on the scan chain has been increased to 31.
- In order to support PPC4xx simulators/emulators, the slowest selectable JTAG clock is now 5 kHz.

Config. program V1.05
Firmware for BDI2000 V1.15
Logic for BDI2000 V1.03



Date: April 13, 2006
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Enhancements

- Enhanced flash erase support via configuration file (see user's manual).
- The Windows setup tools now allows to select a COM port in the range 1 - 19.

Config. program V1.05
Firmware for BDI2000 V1.16
Logic for BDI2000 V1.03



Date: Nov. 3, 2006
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Enhancements

- Improved Telnet history buffer handling.
- New flash algorithm types added (S29M64X8, S29M32X16).
- The MirrorBit algorithm uses the write buffer also when no workspace is defined.
- New RECONNECT option to the DEBUGPORT parameter added. When present, a Telnet/GDB (TCP) connection request to an already open TCP channel is accepted if the host IP is the same as the initial one. The old TCP channel will be closed immediately.
- PPC440: The MMAP TLB entry in the init list forces the BDI to validate a memory access against the current TLB setting before the memory is really accessed. Replaces the static MMAP <start> <end> entries for PPC440 processors.
- New init list entry WREG PC added.
- A new register type PMMn (physically memory mapped) has been added. This allows to define the 36-bit physical address of a memory mapped register (see user's manual).

Config. program V1.05
Firmware for BDI2000 V1.17
Logic for BDI2000 V1.03



Date: Sept. 28, 2007
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Enhancements

- Telnet IAC option handling improved.
- Telnet accepts now multiple commands separated by a semi-colon on one line.
- The BDI observes the reset line only if RESET HARD is selected.
- New init list entries (SIDCR,WIDCR) allow more convenient writes to Indirectly accessed Device Control registers (IDCR).

Config. program V1.05
Firmware for BDI2000 V1.18
Logic for BDI2000 V1.03



Date: March 19, 2008
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Enhancements

- Telnet binary display of FP registers added.
- Flash programming supports 16-bit byte-swapped systems for AM29BX16 and MIRRORX16.

Config. program V1.05
Firmware for BDI2000 V1.19
Logic for BDI2000 V1.04



Date: Febr. 18, 2009

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Enhancements

- Support for PPC464 core added (AMCC PowerPC 460SX)
- New MT Telnet command for a simple bus/memory test added.

Config. program V1.05
Firmware for BDI2000 V1.20
Logic for BDI2000 V1.04



Date: January 12, 2010
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Enhancements

- Support for Titan HPC (APM83290) added.
- Download speed via GDB improved.
- New init list entries for memory read (RM8, RM16, RM32) added.
- New init list entry STL B added (see manual).
- Maximal number of software breakpoints increased to 64.