

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



Date: July 8, 1999

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## Enhancements

- Detection if target is freezed has been improved. For MPC8xx and MPC555 targets, freeze detection also works when the BDM connector pins VFLS0 and VFLS1 are not connected to the target. If not connected to VFLSx, this BDM connector pins should be left open or tied to Vcc.
- New Telnet command (QUIT) added to terminate the Telnet session.
- The Telnet memory modify commands (MM,MMH,MMB) support a new <count> parameter. It's now possible with this commands to fill a memory range with a byte, half word or word pattern.
- The GDB command „detach“ will start a reset sequence. The behavior is the same as when you enter „reset“ at the Telnet prompt. This way, it's possible to reset the target and reload the program code without opening a Telnet session.

## Error Correction

- An error in the fast programming algorithm for Intel flashes has been corrected. The fast algorithm did not work for Intel flashes connected to a 16bit or 8bit memory bus. For a 32bit memory system, the algorithm was correct.

Config. program  V1.01  
Firmware for BDI2000  V1.03  
Logic for BDI2000  V1.00



Date: April 4, 2000  
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## Enhancements

- The Telnet memory display commands (MD,MDH,MDB) output the memory content also in ASCII format.
- Support for host communication via network gateway added.
- Load offset added to Telnet LOAD, VERIVY and PROG command.
- Registers can be defined and access by name via Telnet (see manual).
- The special load format IMAGE has been added to load a complete Linux boot image.
- Command line utility added to setup the BDI from any Linux / UNIX host (see manual).

Config. program  V1.01  
Firmware for BDI2000  V1.04  
Logic for BDI2000  V1.00



Date: July 25, 2000  
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## Enhancements

- MMU support for Linux kernel debugging added (see manual).
- New Telnet command (BREAK) added to display and change current breakpoint mode.
- GDB binary downloading support added (X<memaddr>,<len>:bbbbbbbb).
- Automatic load of binary files now also supported.

Config. program  V1.01  
Firmware for BDI2000  V1.05  
Logic for BDI2000  V1.00



Date: October 11, 2000  
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## Enhancements

- 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.

Config. program  V1.01  
Firmware for BDI2000  V1.06  
Logic for BDI2000  V1.00



Date: Dec 14, 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.
- 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 floating point registers.
- Support for MPC5xx targets added. This includes floating point register access and also programming of the internal flash of MPC555 and MPC565.

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



Date: March 29, 2001

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## Enhancements

- Support for BDI2000 Rev.C added.
- BDM interface timing improved.

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



Date: April 5, 2001  
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## Enhancements

- Faster programming for Intel StrataFlash.
- Support for GDB protocol Z-packet added.
- New Telnet command (DUMP) added to upload a binary memory image.
- A copy of the self clearing ICR register is held in the BDI. Reading the ICR returns this copy.
- The host can take control over the watchpoint / breakpoint hardware in the target.  
As soon as ICTRL, LCTRL1 or LCTRL2 is written to, the BDI assumes that the host controls the watchpoint / breakpoint hardware. This way the debugger or the user via Telnet has access to all features of this watchpoint / breakpoint hardware. A hardware breakpoint set via BI or BDx gives control back to the BDI.
- A write to the ICTRL register in the initialization list can be used to define the value of the ISCT\_SER field. In the past, the BDI has used the fix value of 7 for this field. This has caused problems on some special hardware.
- Via Telnet, the DTAG and the copy back buffer content can be displayed.
- Support for the AT29 flash memory added (only for chips with 256 byte page size)
- While in debug mode, the BDI forces the CIDEF bit in MD\_CTR to zero. This way, cache coherent accesses is guaranteed.

Config. program  V1.02  
Firmware for BDI2000  V1.08  
Logic for BDI2000  V1.01



Date: May 8, 2001  
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## Enhancements

- MMU support improved. See manual for more information about the new configuration parameter PTBASE.

## Error Correction

- Error when host uses 64k TCP window corrected.
- Virtual address translation also applied to breakpoints set via GDB Z-packets.

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



Date: June 13, 2001

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## Error Correction

- New logic for the BDI2000 CPLD. The previous one did not reliably work at the highest BDM clock rate of 16.7MHz (CPU Clock  $\geq 50'000'000$ ).

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



Date: August 13, 2001  
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## Enhancements

- Linux MMU support has changed, see user's manual.
- During flash programming, the SC bit in DER is automatically set and restored afterwards.
- Maximal number of programming pulses for MPC555 internal flash increased.

## Error Correction

- Error when host uses 32k TCP window corrected.

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



Date: Nov. 2, 2001  
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## Enhancements

- 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.
- The address range used for MMU default translation has been increased to 128MB.

## Error Correction

- The erase time-out for AMD flashes has been increased. This was necessary because of long chip erase time.
- Correct setup of PTBASE pointer also when BDI boots while target is already powered-up.
- Invalidate instruction cache only for MPC8xx targets. Do not write to SPR 560 on MPC5xx targets.

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



Date: August 9, 2002  
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## Enhancements

- Processing of GDB monitor command improved.
- Support for AMD MirrorBit flash added.
- The new Telnet command RDUMP writes the values of all user defined registers to a file on the host.
- New configuration parameter (STARTUP) added, see user's manual for more information.
- If the GDB monitor command is used to download an ELF image via TFTP („mon load“), the BDI sends continuously dots to GDB to prevent a command time-out.

## Error Correction

Config. program  V1.04  
Firmware for BDI2000  V1.12  
Logic for BDI2000  V1.02



Date: January 31, 2003  
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## Enhancements

- 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.
- The instruction used for a software breakpoint can be a TRAP or ILLEGAL (see manual).

## Note:

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

Config. program  V1.05  
Firmware for BDI2000  V1.13  
Logic for BDI2000  V1.02



Date: Febr. 10, 2004  
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## Enhancements

- The file names in the configuration file maybe relative to the configuration file path.
- 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.
- 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.
- New Telnet DELAY command added. Maybe useful when working with GDB command scripts.

Config. program  V1.05  
Firmware for BDI2000  V1.14  
Logic for BDI2000  V1.02



Date: June 25, 2004

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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).
- With the configuration entry MMU XLAT 0x00000000 a special virtual to physical translation mode is selected. In this mode, there is no page table search, the translation is made based on the current entries in the MPC8xx TLB's.
- The Telnet commands DTLB and ITLB display the current content of the MPC8xx TLB's

Config. program  V1.06  
Firmware for BDI2000  V1.15  
Logic for BDI2000  V1.02



Date: Nov. 22, 2005

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## Enhancements

- Default kernel translation range has been increased to 256 MB.
- 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 Windows setup tools now allows to select a COM port in the range 1 - 19.
- For virtual address translation, the BDI now always searches the TLB's first.  
This is necessary for Linux 2.6.x where pinned TLB entries are used for some kernel space.

## Error Correction

- Correct address translation of GDB requested memory blocks that crosses a page boundary.

Config. program  V1.06  
Firmware for BDI2000  V1.16  
Logic for BDI2000  V1.02



Date: January 11, 2008  
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## Enhancements

- 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.
- Telnet IAC option handling improved.
- Telnet accepts now multiple commands separated by a semi-colon on one line.

Config. program  V1.06  
Firmware for BDI2000  V1.17  
Logic for BDI2000  V1.02



Date: January 29, 2010  
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## Enhancements

- Download speed via GDB improved.
- Support for GDB p - packet (single register read) added.
- Maximal number of software breakpoints increased to 64.