PEEDI – JTAG/BDM Emulator

Powerful Embedded Ethernet Debug Interface

Quick Installation Guide

Step 1: PEEDI installation

- Open the PEEDI package and carefully unpack all components.

- Connect PEEDI to a free port of your LAN switch/hub using the supplied UTP patch cable.

- Connect PEEDI to the target using a JTAG cable and if needs the one of the supplied JTAG adapters. The JTAG adapter must be on the PEEDI side of the JTAG cable:

Adapter **JTAG cable** **Target** **PEEDI**
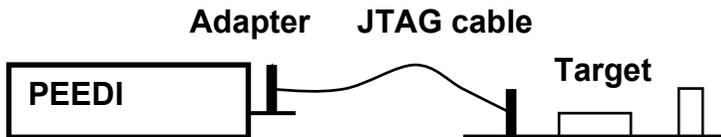
If your target JTAG port pinout is not standard, you may need to make your own target cable considering the PEEDI JTAG connector pinout.

- Plug the power adapter to the power outlet and next plug the power jack to PEEDI.

- Power up the target.

Step 2: Configuring PEEDI

- Connect PEEDI to a COM port of your PC using the RS232 cable.

- Start any kind of terminal emulation program (HyperTerminal) and set it to 115200 bauds, 8 data bits, no parity and no flow control.

- Restart PEEDI holding pressed both front panel buttons to enter RedBoot command line.

- Use **fconfig** command to set the network configuration and other parameters.

> *WARNING:*
> *If PEEDI is set to get its network settings from a DHCP server and if the Ethernet cable is unplugged or there is no DHCP server on the Ethernet, it may take some time for PEEDI to boot. To avoid this, make sure PEEDI can reach a DHCP server or assign a static IP address.*

- Restart PEEDI again for the changes to take effect

- After PEEDI is up and running (this should take some seconds after reset), press and hold the green front panel button and PEEDI will start to display its IP address on the display.

- Connect to PEEDI with telnet application using the IP address from the previous statement. If connected, you should see the PEEDI CLI prompt.

Step 3: Target configuration file

To operate, PEEDI needs to load a target configuration file, which describes the specifics of the given target; this includes CPU type, FLASH type and metrics, RAM address and size, etc. The target configuration file includes also some settings of PEEDI itself like license keys, baud rates of the serial port, etc. The target configuration file can be loaded from TFTP, FTP or HTTP server, MMC/SD card or the internal EEPROM. PEEDI is purchased with sample target configuration file stored in the EEPROM. Use the **transfer** PEEDI CLI command to copy the file to any file server or to a MMC/SD card:

```
eeprom dir
transfer eep://abc.cfg tftp://192.168.1.1/abc.cfg
```

Next edit the file to match the specifics of your target and then use again the transfer command to copy back the file to the PEEDI's EEPROM, or you may set PEEDI to load the file directly from the server (See "Step 2: Configuring PEEDI").

This archive contains sample configuration files for various CPUs:
http://download.ronetix.info/peedi/cfg_examples

Step 4: GNU Toolchain installation

For detailed information:
http://download.ronetix.info/boards/README/README-toolchains.ronetix

Step 5: Debugging with PEEDI

After PEEDI and the target are connected and powered, the required software is installed and you have compiled your project, you are ready to load, execute and debug the executable. You may do this by starting the Insight graphical GDB interface like this:

```
arm-elf-insight example1_ram
```

or

```
arm-elf-gdb example1_ram
```

Where example1_ram is the name of the executable image.

Now, type in the gdb console:

```
(gdb) target remote xxx.xxx.xxx.xxx:2000
```

where xxx.xxx.xxx.xxx is the IP of your PEEDI. This will tell the gdb to connect to PEEDI.

Now you can load the application like this:
```
(gdb) load
```

Now, click View->Breakpoints (or press Ctrl+B) to open the breakpoints window. To set a breakpoint, click at the beginning of the desired line in the source window. Now you can start execution typing:
```
(gdb) continue
```
or only 'c'
```
(gdb) c
```
or press 'C' while in source window.

embedded development tools

Step 6: Programming the target

A TFTP, FTP or HTTP server must be started on the host PC in order for the PEEDI to get the file that is to be programmed to the target. Ronetix recommends the free TFTPD32 server which can be downloaded from here:

http://tftpd32.jounin.net

On Linux, tftpd could be used (or contact your Linux system administrator). Type in the telnet console to PEEDI:

```
flash info
flash erase
```

This will tell PEEDI to erase the FLASH, and next use the **flash program** command to program the executable image of your target. For example:

```
flash program tftp://192.168.1.1/example1_rom elf
```

or

```
flash program tftp://192.168.1.1/example1_rom.bin bin
0x1000000
```

For more information about programming see the **flash** commands in the PEEDI user's manual.