

STARTER KIT

For ARM9 with ATMEL AT91SAM9261

Quick Installation Guide

Version 1.0

PEEDI

Powerful Embedded Ethernet Debug Interface



EB9261

Evaluation Board



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1 Introduction

This guide describes on how set up the RNETIX ARM Starter Kit, which includes Powerful Embedded Ethernet Debug Interface (PEEDI) and the ARM based EB9261 evaluation board.

Following the instructions bellow you can start developing your project in 30 minutes.

Note:



Before starting the set up procedure, please verify the package contents using the item list in section 6 Starter Kit Package contents

2 Hardware installation

1. Open the Starter kit package and carefully unpack all components
2. Connect PEEDI to a free port of your LAN switch/hub using the supplied Ethernet cable
3. Connect PEEDI to EB9261 using the target cable
4. Plug the power adapter to the power outlet and next plug the power jack to PEEDI.
5. DC power is supplied to the EB9261 board via the 2.1mm socket (J15):



3 Software installation

See "Software Installation Guide":

<http://www.ronetix.at/download/doc/sig.pdf>

4 Building and debugging the application

After PEEDI and EB9261 are connected and powered, and all the required software is installed, you can compile the eCos example and load it for execution and debugging. This can be done with Eclipse (described in "Software Installation Guide") or using the command line interface following these steps:

If you are running Windows OS, double click on the icon of Cygwin on your desktop, this will open the Cygwin console, or if you are running Linux, open a console instance and type:

```
cd ../eb9261/software/main
```

to go to the example's directory, and next type:

```
make ecos
```

to build the eCos OS, if no changes to eCos are made this is required only once. After that type:

```
make
```

to compile and link the application and eCos OS. At this point you are ready to load, execute and debug the example. You may do this by starting the Insight graphical GDB interface like this:

```
arm-elf-insight debug/main
```

Now, click View->Console (or press Ctrl+N) to open the insight console and type:

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

where xxx.xxx.xxx.xxx is the IP of you PEEDI. This will tell the insight to connect to PEEDI.

Note:

You can get the PEEDI IP by pressing and then holding the green button on the front PEEDI panel and the IP will be shown on the front panel LED indicator. Or connect to PEEDI on the RS232 and IP is shown during boot-up.



*Purchased PEEDI is set to get its network settings from DHCP server. To change PEEDI network settings connect to PEEDI via the RS232, restart PEEDI pressing and holding both front panel buttons, then use **fconfig** RedBoot command. For more info refer to the PEEDI user manual.*

Now you can load the application like this:

```
(gdb) load
```

Next, set the CPSR register so that all interrupts are disabled:

```
(gdb) set $cpsr=0xD3
```

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.

After the example is up and running, you can easily add your own project specific functions, source files and modules.

Note:



If you need to restart the application been debugged, you must load it again to the target, otherwise build and use the ROMRAM. To build it, issue "make romram".

Download Performance

By default, GDB generally downloads program code and data in small packets that are not necessarily a multiple of four bytes in length. This causes program download times to be slower than necessary, especially with ARM targets. There are two GDB internal variables that affect this. To improve GDB download performance, you should set the download write size to a binary value 16128 and the memory write packet size to a larger value to allow for packet overhead (+100 bytes is plenty). For example, to download 16KB at a time:

```
(gdb) set remote memory-write-packet-size fixed
(gdb) set remote memory-write-packet-size 16384
(gdb) set download-write-size 16128
```

5 Starter Kit Package contents

- PEEDI
- EB9261 – CPU Module + Baseboard
- 2x Power adapter 5V/1A
- 35cm 20-wire target cable
- 35cm 14-wire target cable (optional)
- 35cm 10-wire target cable (optional)
- ARM20 JTAG cable adapter
- ARM14 JTAG cable adapter (optional)
- ARM10 JTAG cable adapter (optional)
- Patch cable CAT5
- Serial cable
- Software CD