

How to use a Timer

Many programs need simple timer support. If you have to watch a timeout within an event polling loop or something similar, a free running background timer is the solution. The following C source code is an example for the Linux-based PNP/1110. This code will also work with all other DIL/NetPCs.

- **1. Step:** Download the sample source code `timertst1.c` from www.dilnetpc.com (i.e. enter the URL www.dilnetpc.com/timertst1.c to your browser). The following listing shows this sample code for creating and using a timer.

```
// timertst1.c: Simple timer demo program. Use cross-gcc ...
// Vers. 1.00 - 21.Oct. 2002
// k.d.walter@t-online.de

#include <stdio.h>
#include <string.h>
#include <signal.h>
#include <sys/time.h>

// This is a timer handler.

void timerHandler (int signum)
{
    static int counter= 0;

    printf ("timerHandler: counter= %d\n", counter++);
    fflush (stdout);
}

// This is the one and only main function.

int main (void)
{
    struct sigaction sa;
    struct itimerval timer;

    // Install the timer handler...

    memset (&sa, 0, sizeof (sa));
    sa.sa_handler= &timerHandler;
    sigaction (SIGALRM, &sa, NULL);

    // Configure the timer to expire every 100 msec...

    timer.it_value.tv_sec= 0; // First timeout
    timer.it_value.tv_usec= 100000;
}
```

```
timer.it_interval.tv_sec= 0;           // Interval
timer.it_interval.tv_usec= 100000;

// Start timer...

setitimer (ITIMER_REAL, &timer, NULL);

// Do noting...

while (1)
    sleep (10);
}
```

- **2. Step:** Build a executable form the source code. Use the following listing for a makefile. With this makefile simply enter **make timertst1** for build a executable. Please note: The first character in the second and third line of the makefile is a Tab (Tabulator).

```
timertst1:
    /usr/local/arm/2.95.2/bin/arm-linux-gcc -o ./timertst1 ./timertst1.c
    rm -f $(PROJ) $(PROJ).o
```

- **3. Step:** Transfer the executable from your development system to the PNP/1110. You can use a FTP session for this file transfer.
- **4. Step:** Run the program on your PNP/1110. Just enter the following command within a Telnet session:

```
./timertst1
```