

Recording of physiological signals

The resulting logfiles can be found in the directory c:\MedCom\log

Open NT Startmenu:

Item "Run..."

Open: telnet mpcu

VxWorks login: meduser

Password: numaris4

After input of the correct password, the VxWorks shell is entered.

This login is not longer needed for VB software versions.

There are some useful inputs:

ESC and - simultaneously: scroll among the last inputs

h shows the last inputs (Copy and paste via TELNET toolbar).

Start/ Stop the signal logging

-> **fMenu**

```
+++++ Menu V1.2 +++++
+ / MPCU Applikations Menu
+++++
+
+ 1 - BGT-MMC Pruefung ...
+ 2 - PCI Karte/Treiber ...
+ 3 - Kommunikation zu den DSPs ...
+ 4 - PMU ...
+ 5 - Trace Utilities ...
+ 6 - VxWorks System Info ...
+
+++++ h=Help +++++
Select number [1-6]: 4
+++++ Menu V1.2 +++++
+ /4/ PMU
+++++
+
+ 1 - Kommandos zum Frontend ...
+ 2 - Debugausgaben steuern ...
+ 3 - Signal Logging ...
+
+++++ h=Help +++++
Select number [1-3]: 3
+++++ Menu V1.2 +++++
+ /4/3/ Signal Logging
+++++
+
+ 1 - start ECG
+ 2 - stop ECG
+ 3 - start RESP
+ 4 - stop RESP
+ 5 - start PULS
+ 6 - stop PULS
+ 7 - start EXT
+ 8 - stop EXT
+ 9 - start all signals
+ 10 - stop all signals
+
+++++ h=Help +++++
Select number [1-10]: 1
```

```
Enter log file name (without path and extension): test1101
+++++ Menu V1.2 +++++
+/4/3/ Signal Logging
+++++
+
+ 1 - start ECG
+ 2 - stop ECG
+ 3 - start RESP
+ 4 - stop RESP
+ 5 - start PULS
+ 6 - stop PULS
+ 7 - start EXT
+ 8 - stop EXT
+ 9 - start all signals
+ 10 - stop all signals
+
+++++ h=Help +++++
Select number [1-10]: 2 (After the session: don't forget to stop the logging, please !)
+++++ Menu V1.2 +++++
+/4/3/ Signal Logging
+++++
+
+ 1 - start ECG
+ 2 - stop ECG
+ 3 - start RESP
+ 4 - stop RESP
+ 5 - start PULS
+ 6 - stop PULS
+ 7 - start EXT
+ 8 - stop EXT
+ 9 - start all signals
+ 10 - stop all signals
+
+++++ h=Help +++++
Select number [1-10]: ex (leave the test menu)
value = 0 = 0x0
->
Leave the VxWorks shell (don't forget this after the logging session,
please) :

-> logout
```

Your connection has been terminated.

Some comments on ECG data files (subject to change)

The stored data is a string of numbers that looks like:

8 1 2 40 280 2292 2300 2306 followed by a tail of average values etc..

The **1st** NUMBER encodes the method

1. IPmuECGModePub:

```
enum PhysioMethod
{
    METHOD_NONE      = 0x01,
    METHOD_TRIGGERING = 0x02,
    METHOD_GATING    = 0x04,
    METHOD_RETROGATING = 0x08,
    METHOD_SOPE      = 0x10,
    METHOD_ALL       = 0x1E
};
```

The **2nd** NUMBER encodes the ArrhythmiaDetection

2. iPmuADPub

```
enum ArrhythmiaDetection
{
    AD_NONE      = 0x01,
    AD_TIMEBASED = 0x02,
    AD_PATTERNBASED = 0x04
};
```

The **3rd** NUMBER encodes the signal used

3. iPmuHighPrioTriggerSignal (source of beep)

```
enum PhysioSignal
{
    SIGNAL_NONE      = 0x01,
    SIGNAL_EKG       = 0x02,
    SIGNAL_PULSE     = 0x04,
    SIGNAL_EXT       = 0x08,
    SIGNAL_CARDIAC   = 0x0E, /* the sequence usually takes this */
    SIGNAL_RESPIRATION = 0x10,
    SIGNAL_ALL       = 0x1E,
};
```

The **4th** & **5th** NUMBER encode gate open and close times in tick-time unit.

current tick time is 2.5 ms (see example values above)

```
// 4. ulECGGateOnCountPub ( i.e. gate opens 100 ms after R wave)
// 5. ulECGGateOffCountPub (i.e. cate closes 700 ms after R wave)
```

All following numbers are signal values as function of sampling interval. The sample rate for the ECG/Cardiac and external signal is 400 Hz. The special value 5000 is used to mark a trigger on signal. The value 6000 is a trigger off mark.