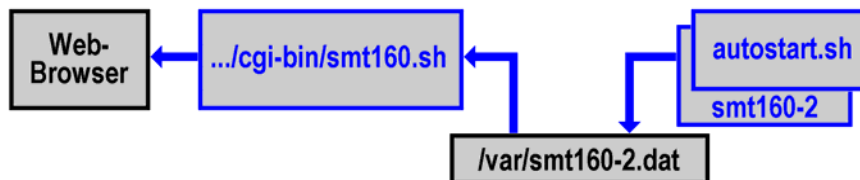


## How to access the SMT-160 Temperature Data with a Web Browser

The DIL/NetPC DNP/5280 Starter Kit CD-ROM Version 1.5 (or newer) contains some sample programs for the SMT-160 intelligent temperature sensor board. This CD-ROM comes as part of a DIL/NetPC DNP/5282 Starter Kit.

This document describes how to access the SMT-160 temperature sensor data with a standard Web browser. Please use this document in addition with *mHT5280-39.pdf: How to use the SMT-160 intelligent Temperature Sensor Board*.

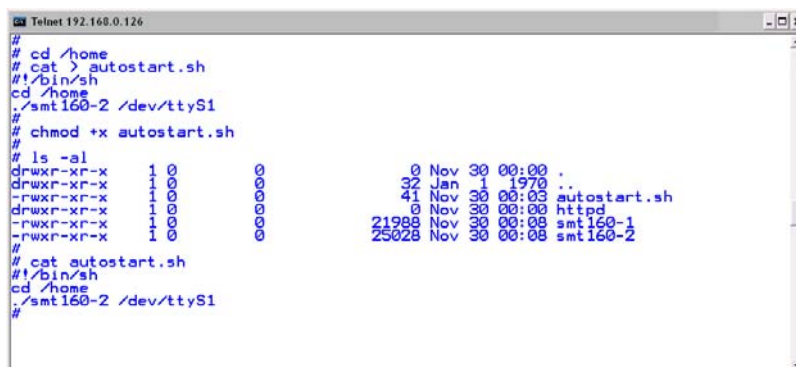
- 1. Step:** We need two Linux shell script files for the Web browser access. One shell script (**autostart.sh**) starts the program **smt160-2** at boot time. This program writes a new sensor data value to a RAM disk file with the name **smt160-2.dat**. The second shell script (**smt160.sh**) is the CGI program. This script delivers the sensor data value to the Web browser. The following picture shows the details.



- 2. Step:** Create a Linux shell script file with the name **autostart.sh** on your development system and transfer this file to the DNP/5282 directory **/home**. Use a simple text editor program for this job. It is also possible to create the shell script file direct with the help of a Telnet session:

```

cd /home
cat > autostart.sh
#!/bin/sh
cd /home
./smt160-2 /dev/ttyS1
CTRL-D (CTRL-D stops the Linux cat command)
chmod +x autostart.sh
  
```



```

Telnet 192.168.0.126
#
# cd /home
# cat > autostart.sh
#!/bin/sh
cd /home
./smt160-2 /dev/ttyS1
#
# chmod +x autostart.sh
#
# ls -al
drwxr-xr-x  1 0      0          0 Nov 30 00:00 .
drwxr-xr-x  1 0      0          0  32 Jan  1 1970 ..
-rwxr-xr-x  1 0      0          0  41 Nov 30 00:03 autostart.sh
drwxr-xr-x  1 0      0          0          0 Nov 30 00:00 httpd
-rwxr-xr-x  1 0      0          0 21988 Nov 30 00:08 smt160-1
-rwxr-xr-x  1 0      0          0 25028 Nov 30 00:08 smt160-2
#
# cat autostart.sh
#!/bin/sh
cd /home
./smt160-2 /dev/ttyS1
#
  
```

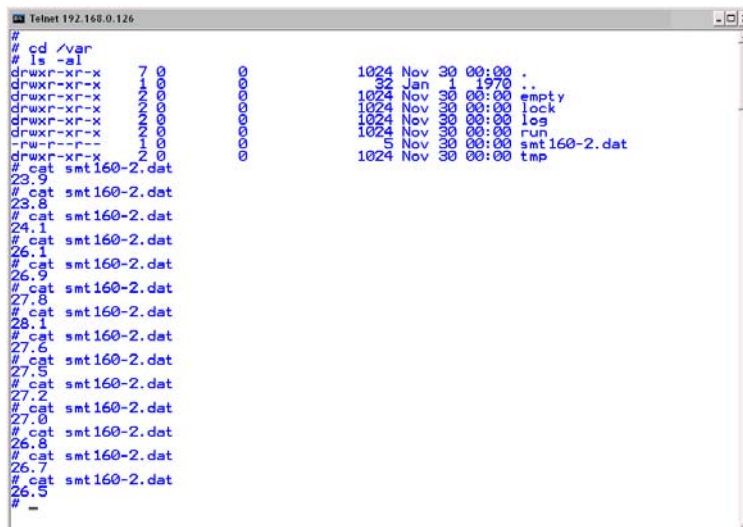
- 3. Step:** Transfer the executable file **smt160-2** from the DIL/NetPC DNP/5280 Starter Kit CD-ROM directory **/uClinux/Demos/Specials/SMT160/SMT160-2** to the DNP/5282 directory

**/home**. Please use TFTP for this task.

- **4. Step:** Create the CGI program as Linux shell script file. Use the name **smt160.sh** for this file. Create this file on your development system with the help of a simple text editor program and transfer this file to the DNP/5282 directory **/home/httpd/cgi-bin**. It is also possible to create the file direct within the directory **/home/httpd/cgi-bin** with the help of a Telnet session:

```
cd /home/httpd/cgi-bin
cat > smt160.sh
#!/bin/sh
# smt160.sh
# Show content of /var/smt160-2.dat
echo "Content-type: text/html"
echo
echo "<html>"
echo "<head>"
echo "<title>"
echo "Show content of /var/smt160-2.dat"
echo "</title>"
echo "</head>"
echo "<body>"
echo "<h1>"
cat /var/smt160-2.dat
echo "</h1>"
echo "</body>"
echo "</html>"
exit 0
CTRL-D (CTRL-D stops the Linux cat command)
chmod +x smt160.sh
```

- **5. Step:** Now reboot the DIL/NetPC DNP/5282 for running **autostart.sh** at boot time. This Linux shell script sample file from the 2. step writes every second with the help of executable file **smt160-2** a new sensor data value string into the file **/var/smt160-2.dat**.



```
Telnet 192.168.0.126
# cd /var
# ls -al
drwxr-xr-x 7 0 0 1024 Nov 30 00:00 .
drwxr-xr-x 32 Jan 1 1970 ..
drwxr-xr-x 1 0 0 1024 Nov 30 00:00 empty
drwxr-xr-x 2 0 0 1024 Nov 30 00:00 lock
drwxr-xr-x 2 0 0 1024 Nov 30 00:00 log
drwxr-xr-x 2 0 0 1024 Nov 30 00:00 run
-rw-r--r-- 1 0 0 5 Nov 30 00:00 smt160-2.dat
drwxr-xr-x 2 0 0 1024 Nov 30 00:00 tmp
# cat /var/smt160-2.dat
23.9
# cat smt160-2.dat
23.8
# cat smt160-2.dat
24.1
# cat smt160-2.dat
26.1
# cat smt160-2.dat
26.9
# cat smt160-2.dat
27.8
# cat smt160-2.dat
28.1
# cat smt160-2.dat
27.6
# cat smt160-2.dat
27.5
# cat smt160-2.dat
27.2
# cat smt160-2.dat
27.0
# cat smt160-2.dat
26.8
# cat smt160-2.dat
26.7
# cat smt160-2.dat
26.5
# -
```

- **6. Step:** Run the CGI shell script file. Start the Web browser of your development system and enter the URL `http://192.168.0.126/cgi-bin/smt160.sh`. This URL runs the CGI shell script and generates a Browser window with the current content of the file `/var/smt160-2.dat`.



**Please note:** If you edit shell script files for Linux systems on a Windows-based PC, it is necessary to convert these files with a DOS2UNIX tool before you transfer them to the DIL/NetPC DNP/5282. Linux shell script files are simple text files. Windows is using the good old MS-DOS format for text files. MS-DOS and Unix systems use different methods to identify end-of-line information in text files. MS-DOS, including Windows 9x/ME/NT/2000/XP, use a carriage return/linefeed pair (CR/LF), whilst Unix only uses the LF character.

**Please note:** The DIL/NetPCs DNP/5282, PNP/5280 and DNP/5280 are software compatible. Only the mechanical form factor and the pin out is different. The Linux operating system of these two systems is absolute identical.

That is all.