

MiniLogger V3.0 Quick Start

Mode Settings: To set initial parameters, the minilogger needs an RS232C terminal. A given communication software, e.g. Hyperterminal with 9600 8n1 running on PC can be used to connect the minilogger. The minilogger has a number of ASCII commands for settings. To get help, press ?.

```
MiniLOGGER V3.0 (? help)
>>?

HELP MENU
/ print analog reading
t TIME set
d DATE set
c Clock display
s set START/STOP recording time
i sampling Interval
= display setting parameters
r number of record
b terminal connection
n New record
a ALL read: sample real-time and data
x Read All: sample and data
u About MiniLOGGER V3.0
? help
>>
```

Setting current date and time: use command 't' for entering current time,

```
>>t
enter current time HH:MM:SS >07:54:00
```

You must type 075400 for 7:54:00. The current time will be saved into RTC chip. And with a +3V Lithium battery, the clock will run without the need of main supply.

For current date setting, type command 'd',

```
>>d
enter current date DD-MM-YR >18-06-04
```

You may check time settings with analog reading by command '/'.

```
>>/  
18-06-04 08:02:20 271 2946 9999 865  
>>
```

The display shows date, time and four channels analog reading. If the signal is bigger than $\pm 400.0\text{mV}$, it will show 9999.

Manual Mode: This mode provides start recording manually. It is designed for portable applications and the recording can begin anytime. To set the minilogger to manual mode, we must enter START/STOP recording time to 99:99. Type command 's' to enter START/STOP time.

```
>>s  
START 17:00 >99:99  
STOP 18:00 >99:99  
99:99 99:99
```

The onboard LCD screen will show 'M' to indicate the manual mode was set. To show start/stop time and interval settings, type command '='.

```
>>=  
START 99:99  
STOP 99:99  
SAMPLING INTERVAL(sec) = 60  
MANUAL  
>>
```

The interval between sampling can enter by command 'i'.

```
>>i  
interval 1-600 sec > 60  
  
>>
```

Note: minimum interval is one second and the maximum is 10 minutes.

When finished settings, you can turn off the minilogger, take it away to the place for experiment and power up it again. To start recording, move the jumper S2, to

START position. Recording will begin immoderately. To stop it, move the jumper to STOP position.

Auto Mode: The AUTO mode enables recording can be made for a given period of time daily. Suppose you need to record the insolation, the sun energy received daily. We can set start and stop time to 6:00 and 18:00. Let's set the start and stop time with command 's'.

```
>>s  
START 99:99 >06:00  
STOP 99:99 >18:00  
06:00 18:00
```

The mode display on LCD will change to 'A' indicating the AUTO mode was set. With this mode jumper S2 is not used. When current time matches start time, recording begins save data to memory.

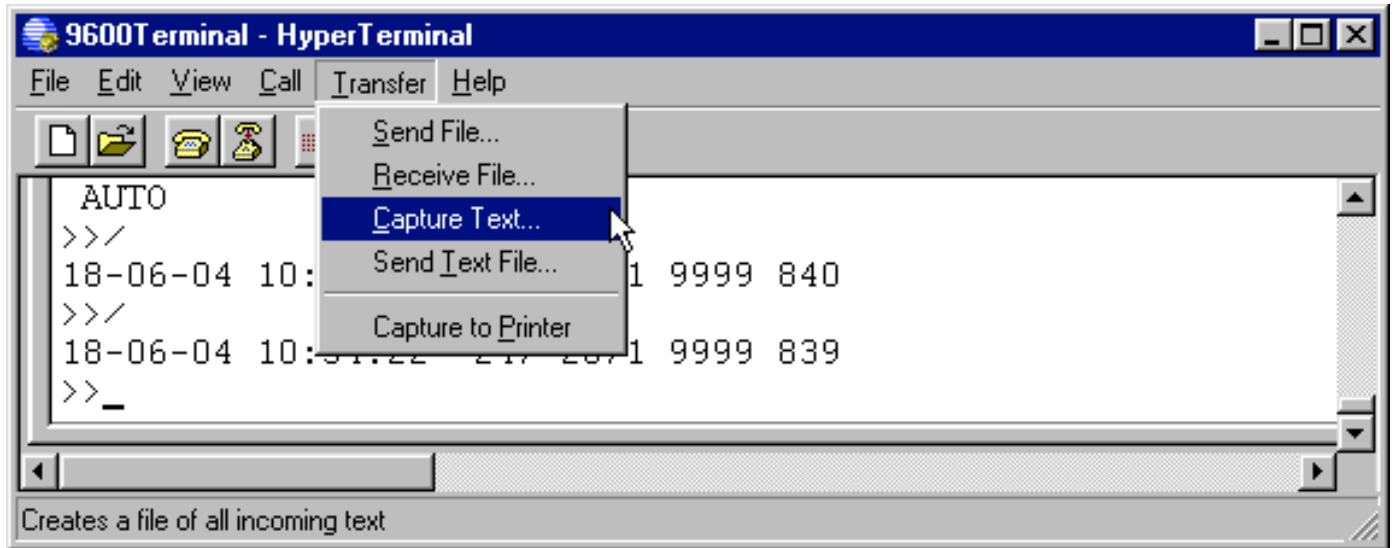
Again after finished settings, you can turn off the minilogger and place it to location for your experiment. When power up the minilogger will show the number of record on LCD screen.

Onboard keypad: The current firmware provides two keys, S5 and S6 for simple checking sensor wiring on-site. S5 is for swapping between analog reading and number of record displays. While in analog reading, you may select the analog channel by pressing S6. It will show from channel 1 to 4. This mode allows you to check the signal level, sensor wiring, wrong connection.

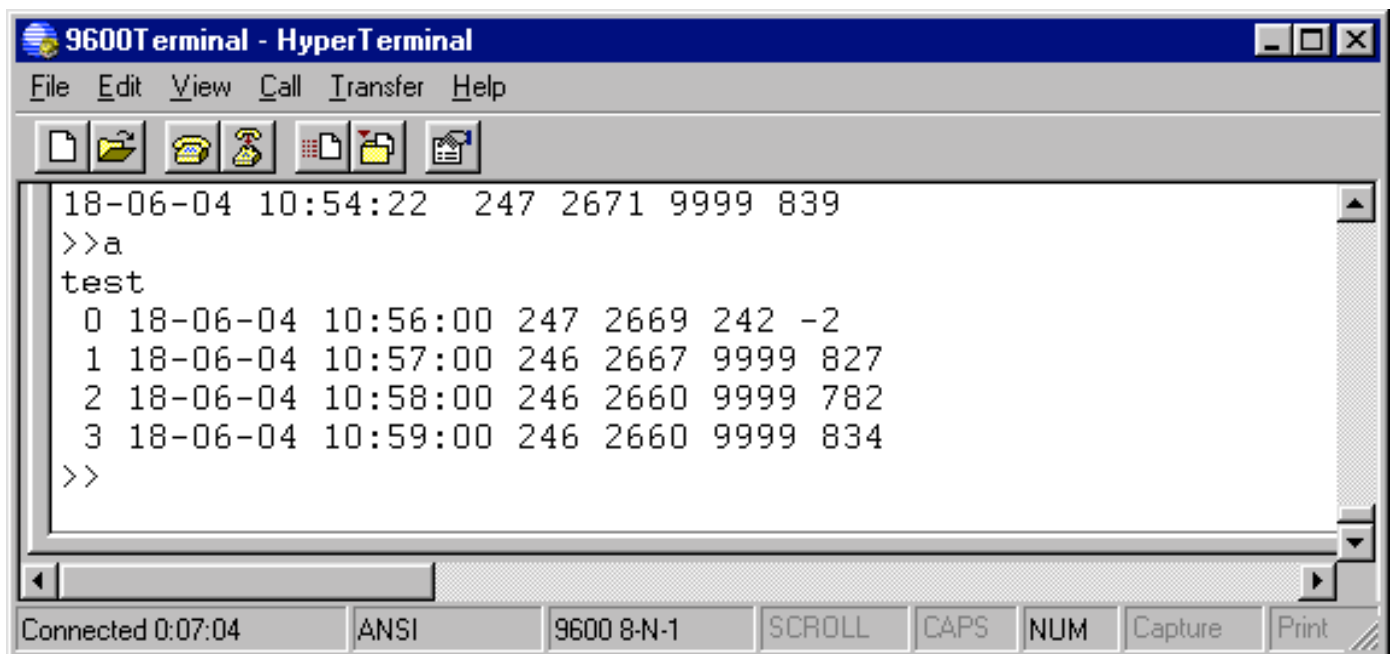
To get back normal running, you must press S5 to display the number of record.

LED indicator: The onboard LED indicates STANDBY and RUN. For STANDBY, the LED will blink fast. For RUN, the blink rate will be slower.

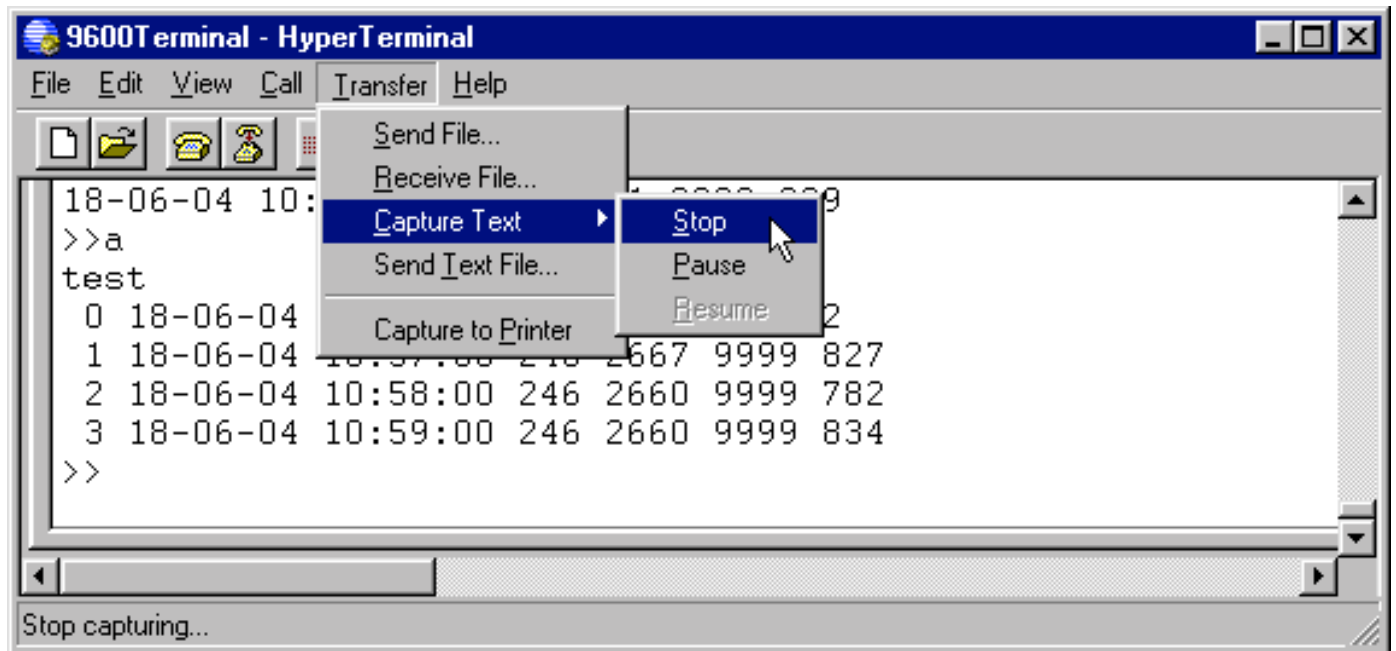
Data uploading: The onboard LCD shows the number of record. You may upload the record to PC by using RS232 cable and PC running terminal emulator. The example shows how to use the hyperterminal, the communication software on PC. To capture data uploaded from minilogger, you must enable capture text mode, see example below.



Enter new the name of capture file. Then type command 'a' to upload the record.



After the records were saved into text file, we can then stop capturing.



The text file can be imported into the Excel for data analysis and graphing.

```
0 17-06-47 21:20:10 263 2868 9999 856
1 17-06-47 21:21:10 264 2896 9999 864
2 17-06-47 21:22:10 264 2898 9999 864
3 17-06-47 21:23:10 265 2902 9999 864
4 17-06-47 21:24:10 265 2906 259 -1
5 17-06-47 21:25:10 266 2910 259 -2
6 17-06-47 21:26:10 266 2909 9999 866
7 17-06-47 21:27:10 265 2904 9999 870
8 17-06-47 21:28:10 264 2887 -6 -2
9 17-06-47 21:29:10 263 2878 9999 864
10 17-06-47 21:30:10 261 2850 9999 882
11 17-06-47 21:31:10 258 2806 9999 883
12 17-06-47 21:32:10 258 2780 9999 883
13 17-06-47 21:33:10 257 2762 9999 884
14 17-06-47 21:34:10 254 2737 9999 885
15 17-06-47 21:35:10 253 2726 9999 885
16 17-06-47 21:36:10 252 2718 9999 885
17 17-06-47 21:37:10 251 2699 9999 886
18 17-06-47 21:38:10 251 2691 9999 887
19 17-06-47 21:39:10 250 2684 9999 887
20 17-06-47 21:40:10 249 2679 9999 887
```

If date and time are not needed, you can use command 'x' to upload only sample number and four channels reading. See example below,

```
>>x
0 296 3237 -4 -1
1 296 3237 -3 -1
2 296 3237 -4 -1
3 296 3237 -4 -1
4 296 3237 -4 -1
5 295 3237 -4 -1
6 296 3237 -4 -1
7 296 3237 -4 -1
8 296 3237 -4 -1
9 296 3237 -4 -1
10 296 3237 -3 -1
11 296 3237 -4 -1
12 296 3237 -4 -1
13 296 3237 -4 -1
14 296 3237 -4 -1
>>
```

You may reprogram the new version of minilogger firmware by using FLIP loader.
The updated firmware will be available from website with URL shown below.

<http://chaokhun.kmitl.ac.th/~kswichit/logger3/logger3.html>