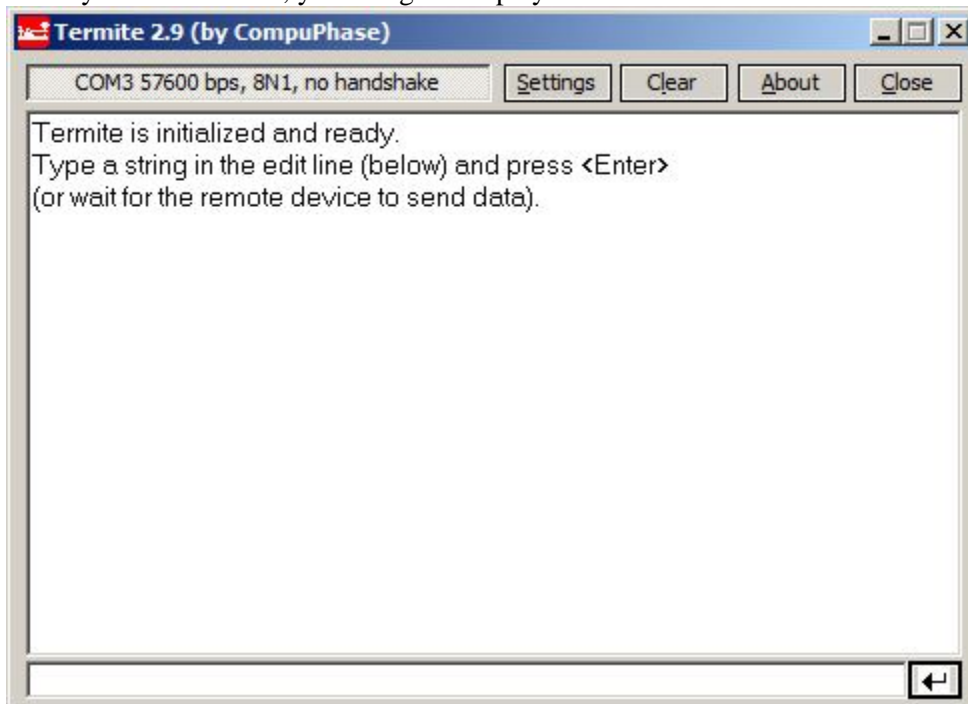**DUALEM INC.**
540 Churchill Avenue
Milton, ON
Canada L9T 3A2

There are many programs that enable serial-port communication with a DUALEM. The following notes describe Termite, a freeware program we have tried with several Windows systems. The notes were made April 5, 2013. Dualem is not responsible for subsequent changes, nor any consequence of receiving this information, nor using any program and/or instrumentation.

You can get the Termite program at http://www.compuphase.com/software_termite.htm. Download the version you want; for example, use the link Termite version 3.0 (program only) to download http://www.compuphase.com/software/termite30.zip, which is discussed here.

You can run Termite by double-clicking one the icon for the application in the termite30 zip folder, or by extracting the files and double-clicking on the icon for the extracted application (exe).
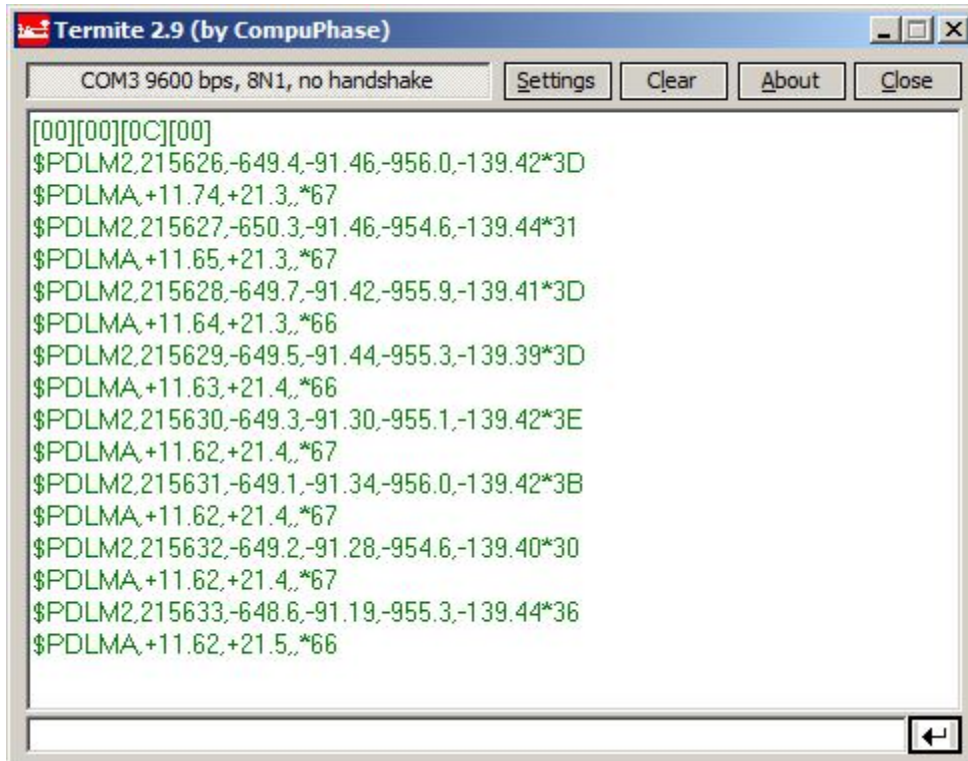
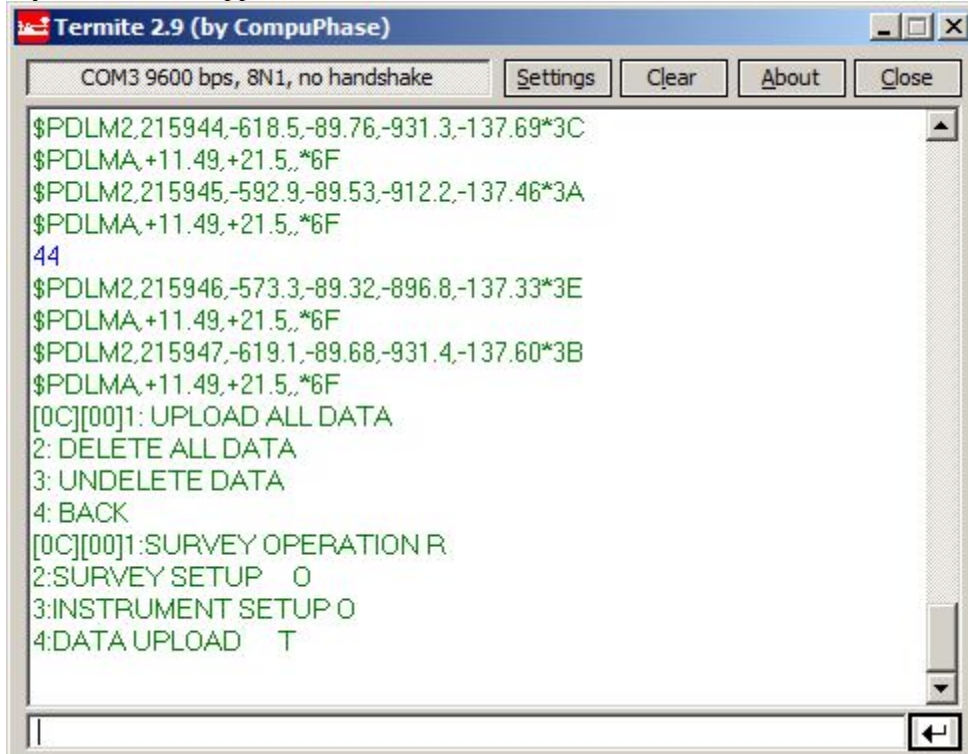When you start Termite, you will get a display that looks like:

The port parameters appear in the small window above the main Termite window. You should ensure that the port (e.g. COM3) is the one to which you will connect your DUALEM. Also, the port speed must match that of the DUALEM. DUALEMs with serial numbers above 85 and from 73 to 84 have the default speed of 38400 bps. Serial numbers 85 and below-73 have the default speed of 9600 bps.

You can change the port settings by clicking Settings, making any necessary change, and then clicking OK. Since the DUALEM used in this example is serial number 2, the Baud rate was set to 9600.

When you connect the DUALEM to the port and give it power, its text output shows in the main Termite window. If the DUALEM is set to automatically transmit full NMEA-format output upon startup, start-up information will show, followed by the $PDLMn and $PDLMA sentences after each MEASUREMENT PERIOD:

```
Termite 2.9 (by CompuPhase)                                    _ □ X
    COM3 9600 bps, 8N1, no handshake    Settings   Clear   About   Close
[00][00][0C][00]
$PDLM2,215626,-649.4,-91.46,-956.0,-139.42*3D
$PDLMA,+11.74,+21.3,,*67
$PDLM2,215627,-650.3,-91.46,-954.6,-139.44*31
$PDLMA,+11.65,+21.3,,*67
$PDLM2,215628,-649.7,-91.42,-955.9,-139.41*3D
$PDLMA,+11.64,+21.3,,*66
$PDLM2,215629,-649.5,-91.44,-955.3,-139.39*3D
$PDLMA,+11.63,+21.4,,*66
$PDLM2,215630,-649.3,-91.30,-955.1,-139.42*3E
$PDLMA,+11.62,+21.4,,*67
$PDLM2,215631,-649.1,-91.34,-956.0,-139.42*3B
$PDLMA,+11.62,+21.4,,*67
$PDLM2,215632,-649.2,-91.28,-954.6,-139.40*30
$PDLMA,+11.62,+21.4,,*67
$PDLM2,215633,-648.6,-91.19,-955.3,-139.44*36
$PDLMA,+11.62,+21.5,,*66

[                                                              ] ↵
```

You can terminate automatic output and go to the root menu of the DUALEM menu system by pressing key [4], so that 4 appears in the edit-line window (below the main Termite window), and pressing Enter.


```
Termite 2.9 (by CompuPhase)                                    _ □ X
    COM3 9600 bps, 8N1, no handshake    Settings   Clear   About   Close
$PDLM2,215944,-618.5,-89.76,-931.3,-137.69*3C              ▲
$PDLMA,+11.49,+21.5,,*6F
$PDLM2,215945,-592.9,-89.53,-912.2,-137.46*3A
$PDLMA,+11.49,+21.5,,*6F
44
$PDLM2,215946,-573.3,-89.32,-896.8,-137.33*3E
$PDLMA,+11.49,+21.5,,*6F
$PDLM2,215947,-619.1,-89.68,-931.4,-137.60*3B
$PDLMA,+11.49,+21.5,,*6F
[0C][00]1: UPLOAD ALL DATA
2: DELETE ALL DATA
3: UNDELETE DATA
4: BACK
[0C][00]1:SURVEY OPERATION R
2:SURVEY SETUP    O
3:INSTRUMENT SETUP O
4:DATA UPLOAD    T                                         ▼
[                                                              ] ↵
```

From the root menu, you can program the DUALEM as described in your manual. To resume full NMEA-format output, press key [%] (shift 5) so that % appears in the edit line, and press Enter.