

DTM USER MANUAL



www.spcloggers.com

CONTENTS PAGE

<u>INTRODUCTION</u>	<u>1</u>
<u>DESCRIPTION (HOW IT WORKS)</u>	<u>1</u>
<u>CONNECTIONS TO THE DTM</u>	<u>2</u>
<u>THE FRONT PANEL</u>	<u>4</u>
<u>FIRST TIME USE</u>	<u>5</u>
<u>CONNECTING & PROGRAMMING THE DTM</u>	<u>9</u>
<u>CONNECTING UP AT SITE</u>	<u>12</u>
<u>ACCESSING TRANSFERRED DATA</u>	<u>15</u>
<u>APPENDIX 1</u>	<u>19</u>
<u>APPENDIX 2</u>	<u>21</u>
<u>APPENDIX 3</u>	<u>23</u>
<u>GENERAL NOTES</u>	<u>27</u>
<u>TROUBLESHOOTING</u>	<u>28</u>

INTRODUCTION

The **SPC DTM** takes portable data loggers to a new level by linking them to the web. It is compatible with all types of SPC Loggers which have a USB port, and uses the GSM (cell phone) network to transfer data from the loggers to the web.

It is simple to connect and operate and it downloads an SPC instrument remotely, thus obviating the need for multiple site visits and enabling best use of the logger memory.

The **DTM** is fully automatic, and once set, functions unattended, provided that a mobile network signal is available.

Please take the time to read this user manual and familiarise yourself with the unit's operation. After a few basic initial setup routines are complete, it will provide reliable and trouble free operation.

DESCRIPTION (HOW IT WORKS)

The SPC **DTM** is a GPRS-based module that connects via USB to the 'SPC Mini' (USB Version) the 'SPC Pro' and the 'SPC Pulse' data loggers.

It comprises a GPRS modem (which accepts a standard SIM card) and a programmable logger interface, and it is setup using Elcomponent's standard PowerPackPro software (V3.0.1 up).

Its operation is simple, and is as follows:

- Using PowerPackPro, the **DTM** is programmed with the URL and log-on credentials of an FTP website. This is the 'holding area' on the web for data files transferred from the unit.
- It is also programmed with an upload schedule which simply identifies how often it is required to transfer data from its connected logger (e.g. every 24 hours) to the web.
- Once set, and connected to an SPC Logger, the **DTM** transfers data from the logger to the user defined FTP location via a mobile phone network.
- PowerPackPro software automatically downloads data from the FTP site and reconfigures it before storing it on the users PC as a standard SPC Logger file.

It's important to note that the **DTM** transfers data from the logger against the user-programmed schedule rather than 'on demand', and these data are then automatically imported onto the user's PC just as if the SPC Logger were connected directly to it.

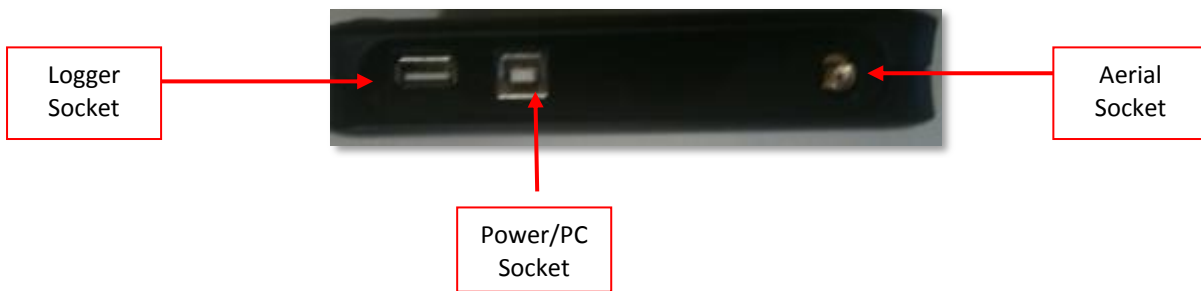
The unit is supplied complete with a plugtop power supply, 2 off A to B type USB cables and magnetic-mount remote aerial. It is available with a pre-installed SIM card, or as a bare unit for the user to install their own SIM.

What's in the box?

- 1x **DTM** Unit
- 2x USB A to B leads
- 1x Remote Magmount Aerial
- 1x Power Supply Unit
- 1x PowerPackPro Software on minidisk
- 1x Zip-up Case

Please visit www.spcloggers.com for the latest information and downloads for the SPC range.

CONNECTIONS TO THE DTM



The **DTM** can act as a USB master and slave.

Master Mode: Connected to logger

Slave Mode: Connected to PC

The configuration of the USB sockets and leads makes it impossible to connect to the wrong socket when linking to either a logger or a PC, provided the supplied leads are used.

 **Note:** Caution is necessary if other USB leads are used.

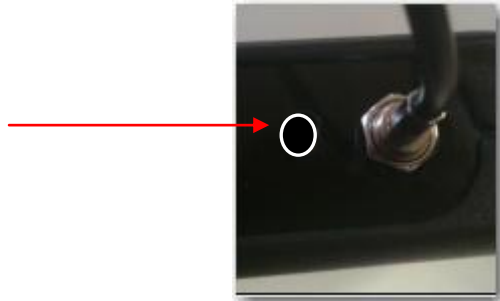
When connecting the power supply, or to a PC, the square socket marked "Power/PC" must be used. When connecting to a logger, the oblong socket marked 'Logger' must be used.

The slave socket doubles as the power supply input. The **DTM** should be connected to an external power supply at all times when in use. When connected to a PC, the PC itself provides sufficient power for the **DTM** to function.

The Aerial:

The aerial socket accepts a standard SMA type GPRS aerial. The unit is supplied with a remote aerial for flexibility of aerial siting.

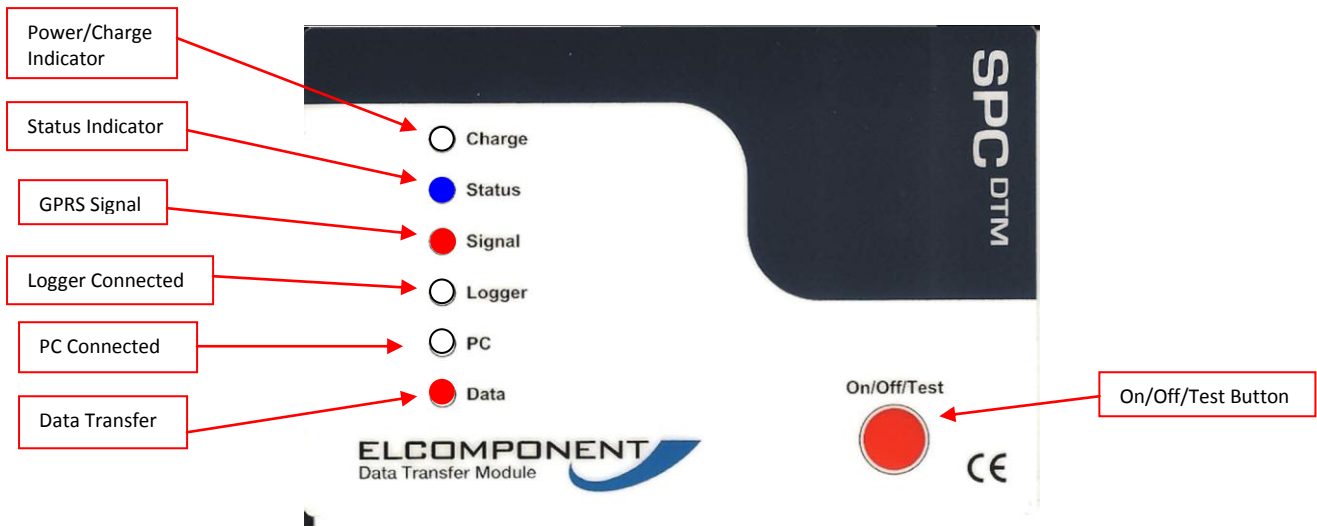
The Reset Switch:



The DTM is fitted with a hardware reset switch. This is located adjacent to the aerial socket and is recessed to avoid accidental operation. It requires a suitable tool for access. Operating the reset switch initiates a complete unit reboot.

Note: All settings are retained following a unit reboot. It is not necessary to reprogram the unit.

THE FRONT PANEL



On/Off/Test Button:

- Pressing the On/Off/Test button switches the unit on. This is confirmed by the middle four L.E.Ds flashing twice.
- Pressing the button a second time initiates 'test mode' depending on the unit status. This is confirmed by the status L.E.D flashing steadily.
- Pressing the button and holding for a minimum of 5 seconds switches the unit off. This is confirmed by the middle four L.E.Ds flashing once, when the button is released.

NOTE: The unit cannot be switched off unless the power supply is removed. Ensure the supply cable is disconnected before attempting to power off.

Power/Charge indicator:

This illuminates when the unit is charging (connected to a power supply). The intensity of the L.E.D is reduced when fully charged.

Status indicator:

This flashes steadily to indicate that a web connection test or data upload to the web is in progress. When permanently on, it indicates that the programmed FTP site has been successfully logged on and/or data have been successfully transmitted.

GPRS Signal:

This is off if no GPRS signal is present. It displays a continuous fast flashing during initialisation. It displays 'group flashing' when a signal is detected. A weak signal is indicated by a single short flash every few seconds, a strong signal by a group of five flashes. The signal strength therefore varies between level 1 (one flash) and level 5 (five flashes).

Logger connected:

This is off if no logger is detected by the **DTM**. The L.E.D will flash when a logger is connected to indicate detection is in progress and will remain on when successful connection is established.

The L.E.D. will flash when data are being transferred from the logger to the DTM.

PC Connected:

This indicator flashes to indicate connection to a PC for programming purposes.

Data Transfer:

This L.E.D flashes when data are being transmitted or received by GPRS. Activity will be noted during the test procedure, and at the scheduled upload times.

FIRST TIME USE

Before the **DTM** can be used, it requires a SIM card to be fitted. If your unit has a pre-installed card, no further action is required. However if no SIM is present, this must be rectified before proceeding further. Please refer to Appendix 2 for further details on SIM card installation.

It is also necessary to program your DTM with its FTP credentials and upload schedule and this is achieved using the PowerPackPro software package supplied. Therefore this must be installed onto your PC before proceeding further. See Appendix 1 for more details on FTP Sites.

The **DTM** ships complete with PowerPackPro PC software, which is a dedicated utility program providing communication setup and remote download capabilities, along with a full data presentation suite. Users will be familiar with the PowerPackPro software if they have used SPC Loggers before. However, it should be noted that the **DTM** is compatible with PowerPackPro V3.0.1 and later only.

Please ensure that the correct version is in use (available for download at www.spclloggers.com)

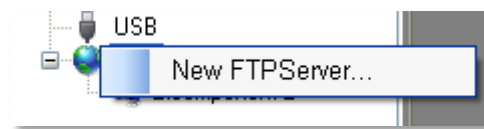
This manual is restricted to those elements of the software relevant to the **DTM**. For details of how to use elements relating to the SPC Loggers, please refer to the relevant SPC Logger manual.

To load PowerPackPro, install the CD and follow the onscreen instructions or download from www.spclloggers.com. It should be noted that the **DTM** is compatible with PowerPackPro V3.0.1 and later only. When the software is loaded, your FTP site must first be setup in PowerPackPro, so the software knows where survey files transferred your DTM are to be found. This is achieved as follows:

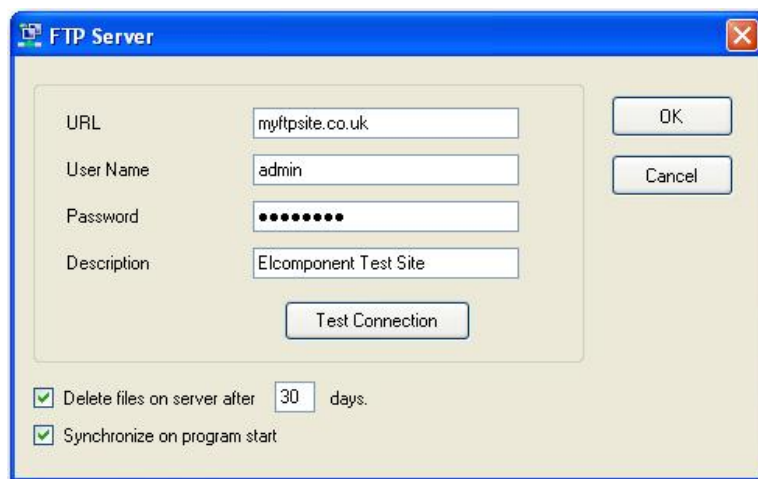
Open PowerPackPro.

SETUP FTP SITE

Right click on the FTP Logo on the top left-hand tree and Select 'New FTP Server'



This option opens the setup window below:



NOTE: A valid FTP location is required for the **DTM** to function correctly. See Appendix 1 for more details on FTP locations.

Enter the URL, user name and password details into the boxes provided. Enter a suitable description to appear on the desktop.

NOTE: Enter the URL like this:

myftpsite.co.uk

Do not include the prefix "ftp://" or "www."

<i>myftpsite.co.uk</i>	✓
<i>ftp://myftpsite.co.uk</i>	✗
<i>www.myftpsite.co.uk</i>	✗

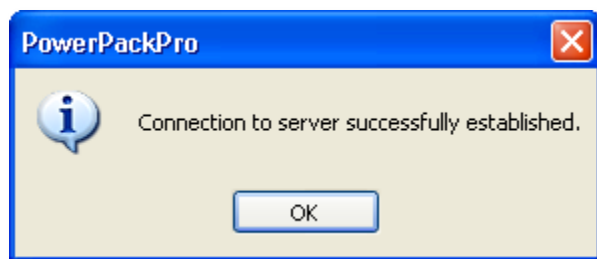
If your ftp location includes a subfolder (e.g. "mydata") enter it as part of the URL like this:

myftpsite.co.uk/mydata

Note that the folder name may be case sensitive.

Enter the username and password exactly as they are supplied to you. Note that either or both may be case sensitive.

Click 'Test Connection' to ensure that the site details are correct. A successful test will be confirmed as follows:



NOTE: The PC must have a valid web connection for the test button to operate. See Appendix 1 for more details on FTP sites.

NOTE: If a successful connection is not achieved, ensure that the PC has a valid web connection, and the FTP details have been entered correctly. The FTP site and log-on credentials can be checked via a web browser if any difficulty is experienced.

Check the box marked 'Synchronise on program start' if you want PowerPackPro to check your FTP site automatically for new files on startup. If the box is left unchecked, file synchronisation must be initiated manually.

Check the box to 'Delete files on server after' and enter the desired time period in days, if required. This will remove all survey files from the FTP site after the specified number of days. If this option is checked, data must be downloaded on a timely basis or they will be lost. If this is left unchecked, other steps must be taken to ensure that the available file capacity on the FTP site is not exceeded. Note that simply downloading data from the FTP site does not delete them from the site.

When satisfied that all details are correct click 'OK' to add the FTP site to the desktop tree.

Multiple FTP sites can be added if desired, and once present on the tree can be managed or deleted as follows:

Right click the FTP site to open the menu below



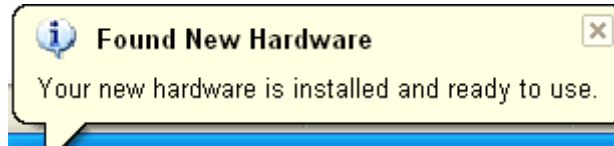
Select 'Edit Server Details' to reopen the FTP window shown on page 6
Select 'Synchronise' to synchronise the software with the FTP site. This will be carried out automatically on startup if the relevant box is checked
Select 'Download Files' to open the survey file window (see page 15).

DTM INITIALISATION PROCEDURE

First Programming:

 **NOTE:** Ensure PowerPackPro is loaded onto your PC.

- 1) Connect the **DTM** to a spare USB port on your PC using one of the supplied cables. This will normally wake the unit up. If it does not, firmly press the On/Off/Test button to do so. Windows should recognise the DTM and install the necessary drivers etc. This is confirmed by a dialogue 'balloon' at the bottom right of the screen.



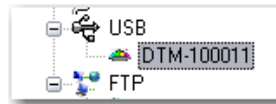
 **NOTE:** If the PC fails to recognise the **DTM**, or displays a different message, refer to Appendix 3 'Loading the SPC drivers' to rectify the situation.

CONNECTING AND PROGRAMMING THE *DTM*

- I) With PowerPackPro running, connect the *DTM* to a spare USB port on your PC and after a few seconds the software will link to the *DTM* and display the dialogue box:



- II) Press 'OK' to add the *DTM* to the tree on the upper left of the desktop.



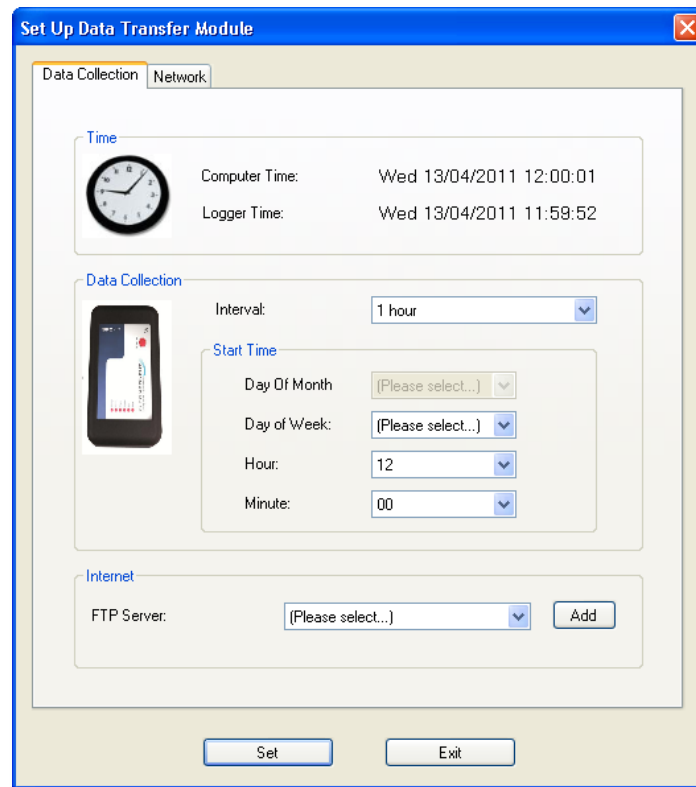
SETTING UP

The *DTM* must now be set by the user to the required FTP site and data transfer schedule. This enables the unit to upload logger data to the web, at the desired time intervals. These settings, once programmed, are retained indefinitely by the *DTM*, or until new settings are input by the user.

To set the unit up, right click the *DTM* on the system tree, and click 'setup *DTM*'.



This opens the setup window (data collection tab)



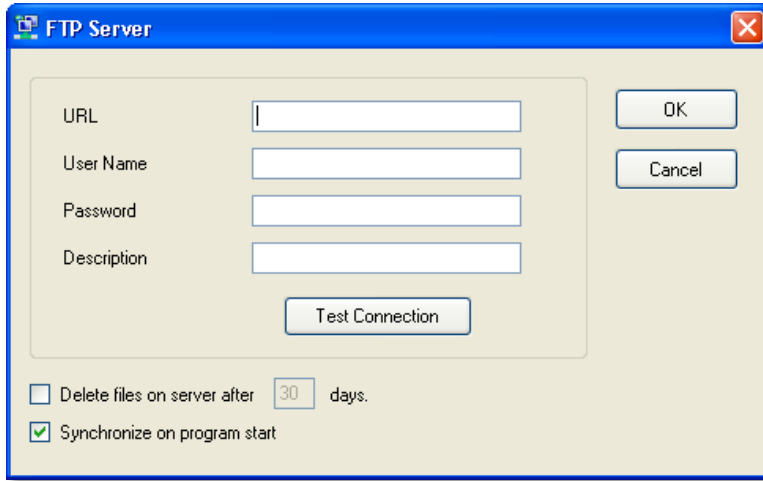
Time: The **DTM** on-board clock is synchronised to the PC Clock when the 'Set' button is pressed. Ensure the PC calendar clock is correct.

Data Collection Interval – The **DTM** can be set to upload at selected intervals from 1 hour to 1 month. Open the drop down box to select the desired interval.

Start Time – It is also necessary to set a start time for the upload process.

 **NOTE:** The available start time options will depend on the interval selected.

Internet – This element of the setup defines where data will be transferred to. The **DTM** requires a valid FTP URL and log-on credentials in order to operate correctly. If an FTP location has already been setup in PowerPackPro and is present on the tree, it can be selected from the drop down box in this section of the window. If multiple FTP sites have been setup, ensure that the **DTM** is programmed with the correct site. The **DTM** can only upload to ONE location. If no location has been set, click the 'Add' button to open the window below:



And refer to page 6 for instructions on adding FTP sites.

Click 'OK' to add the FTP location to the desktop and return to the **DTM** setup screen.


When all settings are correctly entered, click the 'Set' button to set the **DTM**.



The above screen confirms that the **DTM** is now set and ready for use. See below for details of connecting the device to an SPC logger.

NOTE: If the DTM is processing GPRS data (e.g. during modem initialisation) the software may request that the set button is pressed a second time before the above confirmation is displayed.

CONNECTING UP AT SITE


-  **NOTE:** Ensure that the aerial is correctly fitted
Ensure that the *DTM* has been programmed with FTP and transfer information. Refer to page 9 for instructions on programming the DTM

Once the DTM has been programmed with FTP and transfer information, it is ready to use. The section below provides step-by-step instructions for connecting the unit at site, and ensuring it is correctly set to do its job.

The DTM advises its status via the front panel L.E.D.s and the following checklist provides a full reference for the L.E.D. functions and indications. You may find it useful in establishing the status of the unit at any given point.

L.E.D CHECKLIST


- Charge
 - Off – no power
 - On – charging
 - On (reduced intensity) fully charged, power connected
- Status
 - Short flash every 10 seconds – standing by
 - Steady flash – attempting to connect to FTP or transmitting data to FTP
 - On – successful test connection completed.
- Signal
 - Rapid flash – initialising modem
 - Off – no signal
 - Group flash 1 - 5 – signal present
 - 1 flash = minimum
 - 5 flashes = max
- Logger
 - Off – no logger connected
 - Steady Flash – attempting to recognise logger or downloading from logger
 - On – logger recognised and connected
- PC
 - Off – PC not connected
 - Flash/on – PC connected
- Data
 - Flashes during data transfer RX/TX

 **NOTE:** The charge indicator may also flicker during data transfer as the additional load of the modem affects the battery status.

The **DTM** is simple to connect and install at site, assuming certain conditions are met.


These are:

- **DTM** must be programmed with FTP details (page 9) and Data Collection Interval (page 10)
- GPRS signal must be available (see below)
- Power supply must be available (see below)
- SPC logger is correctly installed and working

 **NOTE:** The DTM must be allowed to initiate fully before use. Following the procedure laid out below should provide trouble-free operation. However, if the unit becomes unresponsive, or the L.E.D. behaviour appears erratic, it may require a full reset. See page 3 for details.

Assuming these conditions have been met, the recommended procedure is as follows:

- I. Connect the aerial to the unit. Firm finger pressure is usually adequate to tighten the connector nut. If a tool is used, do not over tighten. It is recommended that a remote aerial is used to allow some flexibility in positioning for maximum available signal strength.
- II. Connect the **DTM** to a power supply using the plugtop unit supplied, and one of the supplied A to B USB cables. Note that the power supply connects to the 'Power/PC' (square) USB socket on the **DTM**. This will normally wake the unit up (Charge L.E.D illuminates). If it does not, firmly press the On/Off/Test button to do so. The middle 4 L.E.Ds will flash twice to confirm the action.
- III. The unit takes approximately 2 minutes to complete its initialisation routines. This is complete when the 'signal' L.E.D ceases to flash rapidly.
- IV. Ensure that a GPRS signal is available. A double flash of the 'Signal' L.E.D indicates the minimum usable signal; a group of 5 flashes indicates maximum signal strength.

 **NOTE:** It is recommended that a signal strength of at least 2 (2 flashes) is present to ensure reliable communication. Signal strength 3 (3 flashes) is preferred if possible.

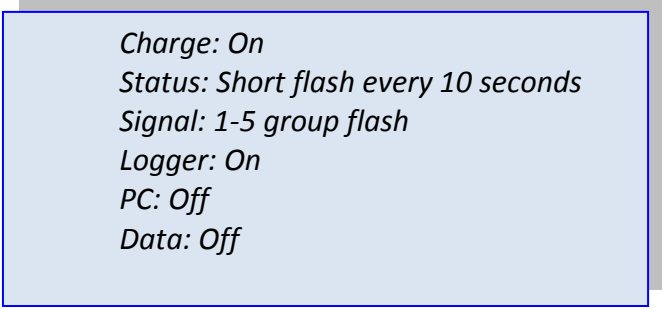
L.E.D status at this stage:

*Charge: On
Status: Short flash every 10 seconds
Signal: 1-5 group flash
Logger: Off
PC: Off
Data: Off*

- V. Connect the SPC logger (SPC Mini, SPC Pro or SPC Pulse models) to the DTM using the second of the supplied USB A to B cables. Note that the logger connects to the master (oblong) USB port of the **DTM**. If necessary, switch the logger on.

The 'Logger' L.E.D on the **DTM** will flash to indicate logger recognition is under way. When the 'Logger' L.E.D is permanently 'on' the connected SPC device has been recognised.

L.E.D. status at this stage:



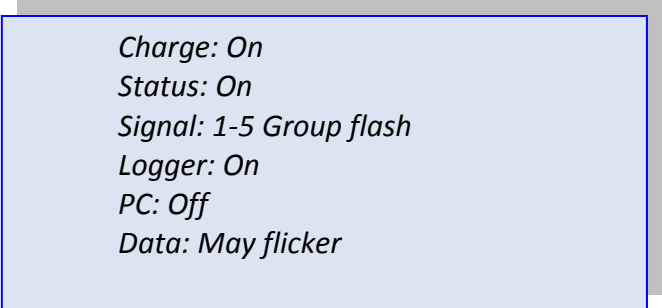
Charge: On
Status: Short flash every 10 seconds
Signal: 1-5 group flash
Logger: On
PC: Off
Data: Off

- VI. Press the On/Off/Test button firmly to initiate the FTP connection test. The 'Status' L.E.D will flash steadily whilst the test is under way. It will be noted that the 'Data' L.E.D will flicker during this process. When connection to the programmed FTP site is established the 'Status' L.E.D will remain on. A successful test uploads a status file to the programmed FTP site.

 **NOTE:** Do not initiate an FTP test if the data L.E.D. is flickering.

 **NOTE:** Test duration may be up to 2 minutes

Final L.E.D status:



Charge: On
Status: On
Signal: 1-5 Group flash
Logger: On
PC: Off
Data: May flicker

At this point the **DTM** is fully set. Ensure that the connected SPC Logger is set to log, and you've finished. The hardware can now be left to do its job. The **DTM** will transfer data from the logger to the programmed FTP site as per the programmed schedule.

Make sure that the SPC logger is correctly set with its 'Logging' L.E.D flashing, and check the *DTM* L.E.D status against the 'Final L.E.D. Status' above, prior to leaving site.

NOTE: When using an SPC Logger in conjunction with a DTM the logger storage interval should be selected to keep file sizes to a minimum, consistent with the level of accuracy required. Large files will use both airtime and FTP allocation more quickly.

If the *DTM* L.E.D status is not as detailed above, the unit may not transfer data as anticipated, and it is **essential** that any anomaly is corrected. Please refer to the Troubleshooting section of this manual for more details.

ACCESSING TRANSFERRED DATA

Downloading files from the Web (FTP server)

The *DTM* transfers data from an SPC Logger (SPC Mini USB, SPC Pro and SPC Pulse) to a programmed FTP location. PowerPackPro automatically retrieves files from this location and imports them as standard logger files. The import procedure is identical to that utilised for the manual download of an SPC Logger when it is connected directly to the PC.

If a *DTM* has already been programmed from the user's PC with FTP site details (see page 9) the site will already be visible on the desktop 'tree', as the *DTM* cannot be programmed without the FTP site being added to the desktop tree.

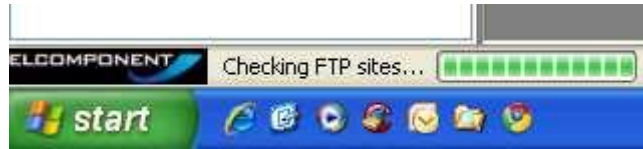


If the FTP site has not been setup, this can be achieved simply by right clicking the 'FTP' location on the tree to open the 'New FTP Server' option. See page 6 for additional details.

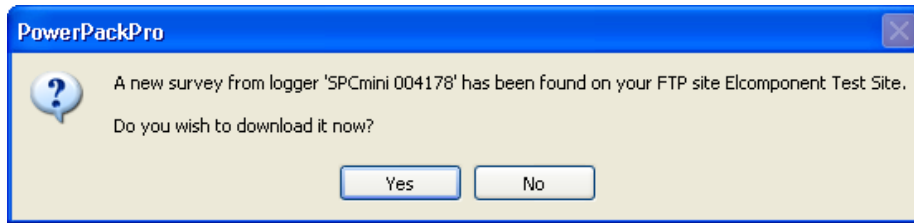


Additional sites may be programmed as required.

If setup for auto synchronisation, all FTP sites present on the desktop tree will be automatically checked for new survey files whenever the program is opened. This is indicated by a status message at the LH foot of the screen.



If new file(s) from a *new* survey are present the program will then prompt the user to download them as below:



Click 'Yes' to download the file.

The download process is then identical to a direct logger download (refer to the relevant SPC Logger User Manual for details) and once the process is complete a file is created in the PowerPackPro survey folder of the PC in the normal way.

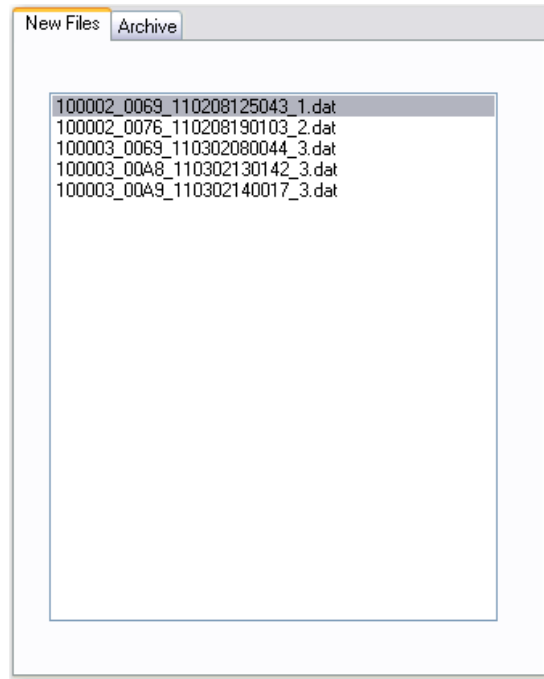
NOTE: Selecting 'No' at this point means that the file must be downloaded manually at some future point (see below). PowerPackPro will not prompt for automatic download a second time.

If new file(s) from an *existing* survey are present, the program will prompt the user to download them with the message:

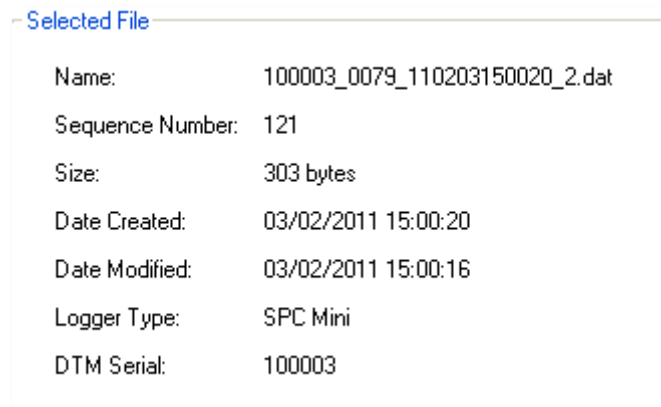


In this case the process is different to that detailed above. The DTM uploads all the data present on its associated logger against the user-defined schedule. For example, if it is programmed to upload every day at midnight, and the survey is started at 12.00 hrs midday, the first file uploaded will comprise 12 hours of data. The second file will comprise 36 hours, the third 60 hours and so on. PowerPackPro checks the file contents of all new files and will recognise a file which contains new data for a survey that has already been downloaded. If 'Yes' is selected by the user, the new data will be added to the existing survey, and the survey graph will be opened automatically. The duration of the survey will therefore increment in line with the upload schedule programmed into the DTM.

The list of files present on the FTP site may also be reviewed at any time by right clicking the FTP site and selecting 'Download Files' to open the following window:




Highlighting a file in the upper window will populate the lower 'Selected File' window with the file details showing the parent logger type, **DTM** serial #, plus file size and dates.



Click the 'Download' button to download the file manually.

NOTE: If files are not downloaded at the initial prompt (see above) they will remain visible in the 'New Files' folder for manual download. The automatic prompt will not reappear until further files appear on the FTP site. Files will remain in the 'New Files' folder until downloaded or deleted automatically. See page 7 'Setup FTP' for automatic deletion options

 **Note:** Once downloaded, files are listed under the 'Archive' tab of the download window. Selected files may be deleted from this location as required. If a downloaded file is accidentally deleted from the desktop tree, it may be downloaded again from the archive area if it has not been previously deleted

Note that the file window in PowerPackPro does not necessarily reflect the files present on the FTP site. In addition to the file management option detailed on page 7, it is recommended that FTP sites are managed directly via a web browser or third party FTP client software to ensure that survey files are removed on a timely basis.

APPENDIX 1

FTP SITE

FTP (File Transfer Protocol) is used to transfer data from an SPC Logger via the **DTM** to the web. The data storage area on the web is the FTP site and the software used to access it is the FTP client – in this instance, PowerPackPro.

Before the **DTM** can be used, it must be programmed with the relevant FTP site details, and these must also be entered into the FTP client software. The details are much the same as any other website, comprising a URL (Uniform Resource Locator) plus a username and password. The URL may be expressed as a site name – e.g. FTP.elcomponent.co.uk – or as an 'IP address' e.g. 169.254.111.100. *In either case the site may be specified as a 'sub folder' of a larger site, e.g. "mydata". This ensures that the user is directed to the correct part of the site.*

SETTING UP AN FTP SITE

There are a number of ways to setup an FTP site location, depending on the user's requirements and resources. These include:

- Elcomponent site rental
- Third party provider
- In-house resources

Elcomponent offers all customers a secure FTP area with 100MB of file space for an annual subscription. Please visit www.spcloggers.com for more details.

If your FTP site is provided via a third party, or via your own organisation's resources, it is recommended that a minimum of 50MB of data storage is available. Effective file management is essential where filespace is restricted, especially if the DTM is uploading from an SPC Pro. To ensure there is no risk of inadvertent data loss, the importing of files from the FTP server to the user's PC does not delete them from the server, and new files uploaded to the server do not overwrite existing files. The size of the data file uploaded from the DTM depends on the logger type, and the amount of logger memory used, but can be up to 4MB (SPC Pro full memory). It is recommended that the automatic file management option within PowerPackPro is used (see page 7) and/or files are manually managed from within the FTP site itself.

The following information will be required for setting up an FTP site in the **DTM** and PowerPackPro:

- Site URL/Sub Folder
- Username
- Password

PowerPackPro includes a test facility to ensure that FTP details are entered correctly. It is essential that the test button reports a successful connection! If it does not, the following items should be checked:

- Web Connection. The PC must have a valid web connection.
- Details – the URL, subfolder, username and password must be entered exactly.

If any difficulty is experienced connecting to an FTP site from PowerPackPro, it is likely that either the credentials have been entered wrongly, or the URL itself is incorrect. The URL must include the folder name as shown on page 6 if this is required. The validity of any FTP details can easily be checked by entering the URL directly into a browser.

Simply enter the FTP URL into the address bar of your browser using the following syntax:

ftp://myftpsite.co.uk/mydata

Note that this is a different format to that required by PowerPackPro. If the details are valid the browser will open a new window similar to this:



Enter your user name and password to enter the site.

APPENDIX 2

SIM Card

The **DTM** is compatible with any standard SIM card providing data transfer GPRS services.

It is available from Elcomponent with a prepaid SIM card preinstalled and tested. If it is to be used with a third party SIM card, the following items should be noted:

- SIM must be suitable for GPRS data transfer duties
- Airtime package must provide adequate capacity for the intended duty. The requirements for SPC Logger data transfer is as follows:
 - **SPCPro** full memory transfer: 4 MB
 - **SPC Pulse** full memory transfer: 1 MB
 - **SPC Mini** full memory transfer: 256 KB
- FTP connectivity should be tested prior to field use of the **DTM**.

Installing the SIM Card

- Before installing the SIM card, ensure that the **DTM** is disconnected from any power supply, PC or SPC Logger.
- Remove the aerial (if connected)
- Remove the four rubber screw covers on the bone of the unit with a suitable pointed tool.
- Remove the four screws and carefully open the case taking care not to lose the switch spacer fitted to the push button switch.
- The SIM card holder is located towards the bottom left of the printed circuit board and is opened by twisting the circular locking tab to the open position as shown:




- The SIM card is inserted into the hinged upper part of the holder as shown above, with the contact face downward

Note: The card will only fit one way! Ensure the angled corner is correctly located.

- Secure the card holder locking the tab units into the closed position.

- Re-assemble the case, and replace the four fixing screws/ covers.

 **Note:** Take care to ensure that the switch spacer is correctly fitted with the narrow end upwards. Failure to fit this correctly will prevent the *DTM* from operating correctly.

APPENDIX 3

LOADING THE SPC DRIVERS

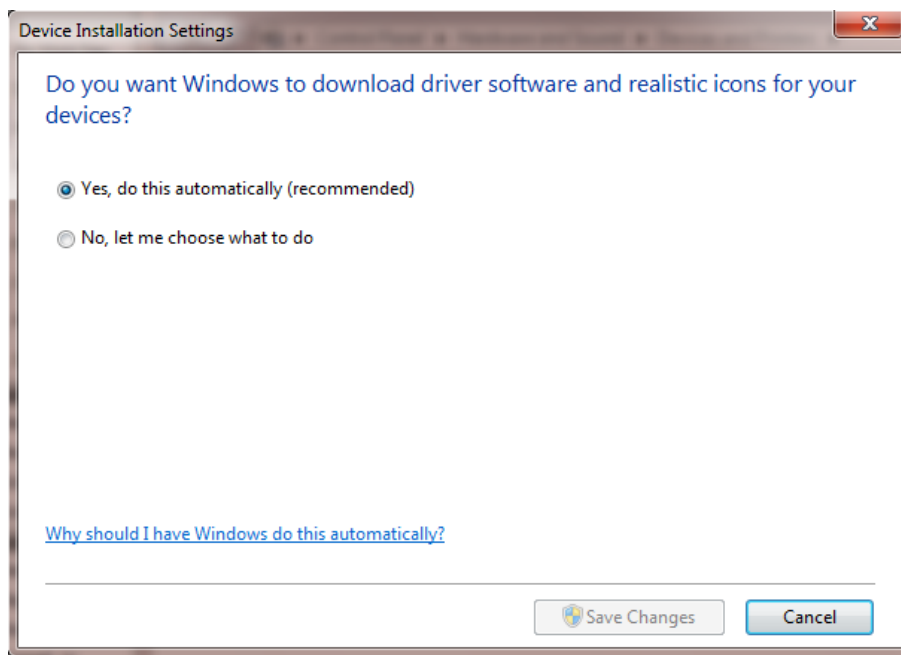
All SPC devices link to the PC via a USB connection. This provides fast reliable communications, and requires no additional configuration by the user. However, in most cases the PC must load the necessary driver files before it will recognise the SPC connected to it. Almost all communication problems can be traced to missing or incorrect drivers.

Normally the load process is automatic, but depending on PC settings, web connection and Windows platform, there may be occasions when drivers do not load as they should. In this situation some manual intervention may be necessary. In the event that the PC does not recognise an SPC device, please proceed as detailed below.

Windows 7:

Windows 7 is designed to obtain any driver files that it needs from the web via the 'windows update' function. If the PC has a web connection, and this behaviour has not been disabled, driver file installation is automatic and seamless.

To check if automatic driver loading is enabled, click the start button and select 'devices and printers'. One of the available devices is the PC itself. Right click on the PC icon and select 'Device Installation Settings'. Ensure the 'automatic' option is selected and reconnect your SPC device to a spare USB port. If the PC is connected to the web, the drivers will now load.



If no web connection is available the drivers can be loaded manually as follows:

Ensure that your SPC Device is connected to the PC

Ensure the CD minidisk supplied with your SPC device is installed in the CD drive on your PC.

Click the start button and select Control Panel. Click 'Device Manager'. (You may need to select 'large icons' from the 'viewing' menu at the top right of the page).

From the Device Manager list, select 'Other Devices'. Note: There will be a yellow warning triangle showing, which may be identified as 'SPC xxx'. Click on the yellow triangle, and click 'Update Driver'

Select the option which allows the driver to be installed from a location on the PC (not the automatic search).

Browse to the CD location [DRIVE]:\V.*.**.**\SPC---Drivers\ and click 'next'.

Click install, and exit when complete. Note: It may be necessary to load a second driver for the COM port. If the Device Manager list shows a second yellow triangle, click on this and repeat the above procedure

Windows Vista:

Windows Vista is designed to obtain any driver files that it needs from the web via the 'windows update' function. If the PC has a web connection, and this behaviour has not been disabled, driver file installation is automatic and seamless.

To check if automatic drivers loading is enabled click the start button and select 'control panel' and click the 'system' icon (you may need to select 'classic view' from the sidebar)

Select 'advanced system settings' from the sidebar and click the hardware tab and select 'Windows Update Driver Settings' to display the following screen



Ensure that 'Check for drivers automatically' is selected and reconnect your SPC device to a spare USB port. If the PC is connected to the web, the drivers will now load.

If no web connection is available the drivers can be loaded manually as follows:

Ensure that your SPC Device is connected to the PC

Ensure the CD Minidisk supplied with your SPC device is installed in the CD drive of your PC

Click the start button and select control panel and click the device manager icon (you may need to select classic view from the side bar)

From the Device Manager list, select 'Other Devices'. Note: There will be a yellow warning triangle showing, which may be identified as 'SPC Pro'. Click on the yellow triangle, and click 'Update Driver'

Select the option which allows the driver to be installed from a location on the PC (not the automatic search).

Browse to the CD location [DRIVE]:\V..**.**\SPC----Drivers\ and click 'next'.*

Click install, and exit when complete. Note: It may be necessary to load a second driver for the COM port. If the Device Manager list shows a second yellow triangle, click on this and repeat the above procedure

Windows XP:

The later versions of Windows XP Pro (Service Packs 2 & 3) are designed to obtain any driver files that are needed from the web via the 'windows update' function. If the PC has a web connection, and this behaviour has not been disabled, driver file installation is automatic and seamless.

To check if automatic drivers loading is enabled click the start button and select 'control panel' and click the 'system' icon. Select the hardware tab and click the 'Windows Update' button to display the following screen



Select either of the first two options to enable Windows Update reconnect your SPC device to a spare USB port. If the PC is connected to the web, the drivers will now load.

If the above option is not present, proceed as follows:

Ensure that your SPC Device is connected to the PC

Ensure the CD Minidisk supplied with your SPC device is installed in the CD drive of your PC

Open "Control Panel" from the Windows 'Start' button.

In XP, select 'System' and click the 'Hardware' tab, and then 'Device Manager'.

From the Device Manager list, select 'Other Devices'. Note: There will be a yellow warning triangle showing, which may be identified as 'SPC Pro'. Click on the yellow triangle, and click 'Update Driver'

Select the option which allows the driver to be installed from a location on the PC (not the automatic search).

*Browse to the CD location [DRIVE]:\V.2.**.**\SPC---Drivers\ and click 'next'.*


Click install, and exit when complete. Note: It may be necessary to load a second driver for the COM port. If the Device Manager list shows a second yellow triangle, click on this and repeat the above procedure.

General Notes

Signal Strength

The **DTM** is dependant on a reasonable GPRS signal being present at the time of any scheduled activity. We recommend that signal strength 3 or higher as desirable to ensure reliable communication to the FTP host. Signal strength 2 is the absolute minimum. Please be aware that signal strength may vary due to external influences and may not be maintained at the level observed during setup.

The supplied aerial has a magnetic base for ease of mounting temporarily at the most advantageous location for maximum signal.

 **Note:** The aerial must not be located directly adjacent to the **DTM** as the RF field may interfere with the unit's operation.







 **Note:** The use of non-approved aerials is not recommended. For high gain or directional aerials please contact Elcomponent.

Reset Button

Due to the fact that the GPRS modem in the **DTM** is dependent on external factors for its operation (signal strength, airtime availability etc, it is possible for the unit to become unresponsive during initialisation. If the unit is unresponsive for a period two minutes or more, the **DTM** should be reset (see page 3). This action does not affect any of the unit's settings, but merely forces a processor reboot. Always ensure that the modem is fully initialised (signal L.E.D. indicating signal strength) before connecting a logger, or initiating a test connection.

Connections

Please note that the **DTM** does not support simultaneous 'master' and 'slave' operation. This means that when the unit is connected to a PC, it must not be connected to a logger, and vice versa.

- When connected to the PC, it requires no other connection
- When connected to a logger it **must** be connected to a power supply.
- The **DTM** requires an A to B type USB cable (A  to B ) for all connections. Do not use A  to A  or B  to B  cables as this will result in incorrect hook ups and possible damage to the unit.

Troubleshooting the DTM

Problem	Solution
Unit does not respond, No L.E.Ds lit	No power supply. Ensure power supply is plugged in and connected
Unit will not switch off	Power supply connected. Disconnect external PSU before attempting to switch the unit off
'Signal' L.E.D fast flashing	GPRS modem initialising. This may take up to 2 minutes
'Signal' L.E.D does not flash	No GPRS signal - reposition aerial
Unit does not recognise SPC Logger (logger L.E.D continues to flash after logger is connected)	No power supply connected. The DTM must have an external power supply present before a logger can be connected. SPC Logger is logging – unit must be in standby mode
Unit does not connect to FTP site (status led continues to flash after 'test' is initiated)	Incorrect FTP details programmed - check and rectify No GPRS signal, or insufficient signal - minimum signal strength '2' required SIM Card/Airtime not correct
Unit does not respond correctly to user input (test button response, L.E.D. behaviour etc)	Unit may need resetting. Disconnect the external power supply and operate the Reset button (see page 3). Reconnect the power supply and restart the DTM