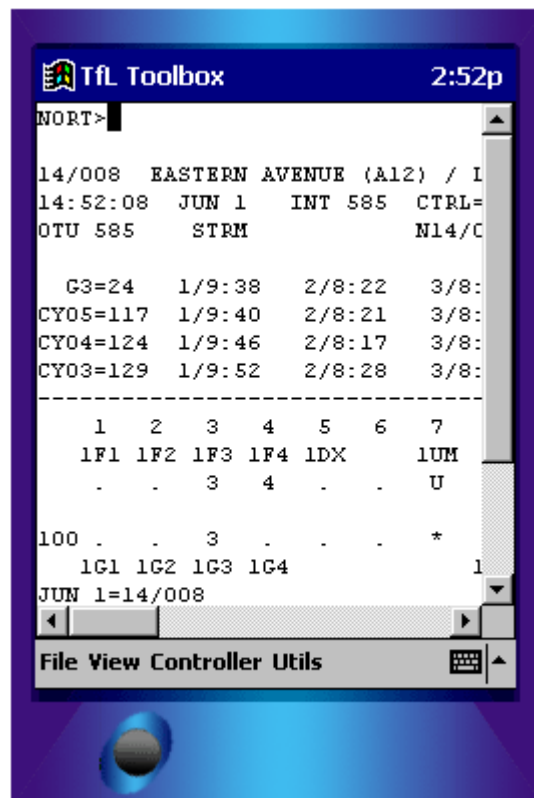


TfL Toolbox

Version 1.70



Quick user guide

Intro

TfL Toolbox is a Pocket PC program for VT100 based controller communication. As much functionality as possible has been bundled into one program in an attempt to make a one for all application.

I welcome feedback on the program and I will try to add any facilities that have been missed in the current version. Please see the About Box for feedback details.

Important Information

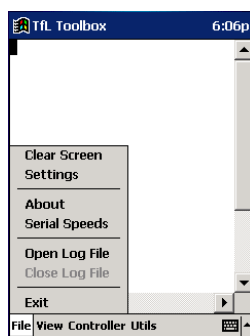
With XDA Pocket PCs, as per a comment in 'Known Problems', please untick automatic infra red receive by

Start -> Settings -> Connections -> Beam and untick the 'Receive all incoming beams and select discoverable mode' tick box.

Menu Bar

The programs operation is driven by the menu bar at the bottom of the screen and each operation will be briefly explained.

File



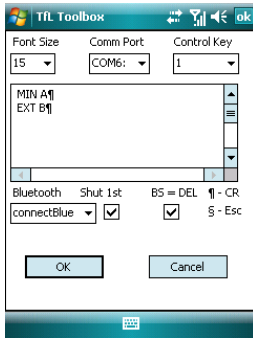
Open / Close a log file: This opens a capture file where all communication is logged in a text file. By default this text file is put in folder 'TfL Toolbox' and is given a name set to the current time & date. These defaults can be changed if needed.

Serial Speeds: Displays a form that shows the serial settings set against each choice on the Controller menu. It is not possible to edit any serial settings and this form is for information only.

About: Displays the program version information and feedback details.

Exit: Exits the program, on Pocket PC devices programs normally stay in memory and simply minimise. The X on the top right corner does the normal minimise action.

Settings:



Font Size: Sets the text size used

Comm Port: Selects which serial communications port to use. The initial setting is Com1: which is the standard inbuilt serial port on a Pocket PC.

Control Key: There are 10 user definable control keys that are accessed by Control 1 to Control 0. To store commands choose which control key and enter the command into the large text box. Each line in the text box is sent with a 1 second gap between lines and a carriage return is not sent automatically. That is why you must end each line with a ¶ This special character is found on the keyboard by clicking àü, which is next to the left control key. The reason for not automatically attaching a carriage return is sometimes it is not needed i.e. + to read the next item or DEC special control keys

If just a space and ` are entered on a line, then nothing is sent but the program still pauses for a second on that line. This dummy entry can be used when a longer delay than 1 second is needed to obtain a response. As many dummy lines can be entered as seconds pause required.

If just a space ` and then some text i.e. `TIMETABLE is entered then the text following the ` is just echoed to the screen without actually being sent to the controller. These labels can be useful when tied to opening a log file to put headers in the resulting text file result.

If ` >> *filename* is entered on a line, the program will open text file *filename* and sequentially go down that file.

When reading in a file, as before each line is sent every second, ¶ is needed to send carriage returns and just a space and ` causes one seconds delay.

Any file line that is blank or starts with ; is ignored. Semi-colons are normally used to mark comments in script files.

Short command scripts are simply entered in the text box, however larger scripts need to be supplied as text files and either ` >> *filename* used to point to the particular text file or sent direct via the Utils menu..

Example: ` >> *T200Dump.txt* It is recommended that anything larger than a handful of commands is entered as a text file.

Script Text Files can also be sent directly by using the Send Script option found under the Utils menu.

In the settings box shown when Control and 1 is pressed the program will send MIN A, wait a second and then send EXT B.

If large text file command sequences are stored, these can be useful when tied to opening a log file for producing standard reports.

By default the program enters `PEEK STM, `MICROSENSE STM AND `SIEMENS STM under control keys 8, 9 & 0. They can be overwritten if needed, however these 3 special commands mean to send the Time Setting commands automatically to the controller. These commands must be entered directly in the text boxes and not in a text file. Each manufacturer uses their own commands, that is why 3 STM (set time) methods are necessary. These commands will set the controller's time and date to the Pocket PCs internal clock. These built in command sequences are useful for setting up CLF groups on the street.

Bluetooth: This drop down box is for selecting the Bluetooth Serial Adapter if one is being used to replace a direct serial connection. The options available are None, connectBlue or BlueCOM. None is for a wired serial lead, the other options make the program send the necessary commands for the Bluetooth Adapter to track serial port speed changes.

For the connectBlue range of Bluetooth Serial Adapters see <http://www.connectblue.com> or UK distributor <http://www.nohau.co.uk/>

For the BlueCOM devices see <http://www.merlinbluetooth.co.uk>

Please note the program has only been tested with the connectBlue modules, so please provide feedback if you do attempt to use the BlueCOM devices.

Only chose a setting other than None if using one of those Bluetooth adapters via a virtual serial port.

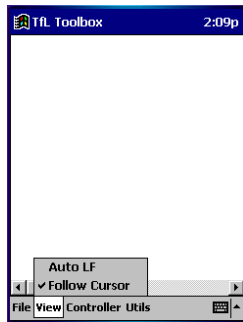
Bluetooth Shut 1st: When the serial speed of the Bluetooth Serial Plug is changed, it may be necessary to unplug and reconnect the Serial Plug. If this option is ticked the Virtual Serial Port is shut before a message box requesting the necessary action is displayed, otherwise the port is shut afterwards.

By shutting after the unplugging it means that power is pulled to the Bluetooth Serial Adapter while the link is still active. Although pulling an active link seems bad practise it was found that the XDAII preferred that method and re-opening of the Bluetooth link was more reliable.

This check box has no function unless a Bluetooth adapter is chosen. It is recommended that with new hardware, Bluetooth Serial unplugging and replacement is tried with the 'Shut First' Check box first ticked and then unticked. Settle on the most reliable method found.

BS=DEL: There are different ASCII codes for Backspace ◀ (8) and Delete (127). However their action can be quite different with Backspace moving the cursor to the start of the current line. If the normal Backspace action of one position left is wanted then leave this box as default ticked.

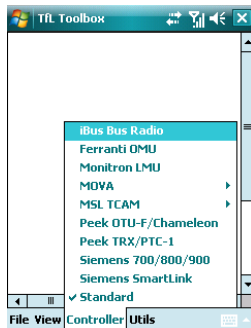
View



Follow Cursor: Since it is not possible to display a whole VT100 screen on a Pocket PC screen, the view is a window with scroll bars. By default follow cursor is ticked and this causes the display window to keep the cursor in view. This can cause problems when using updating screens, such as the Siemens MOVA test screens or the ST800/900 wide screen mode. To stop the screen moving about automatically click off follow cursor, the window then is only under control of the scroll bars. Clicking follow cursor back on will cause the screen to jump back to the cursor position.

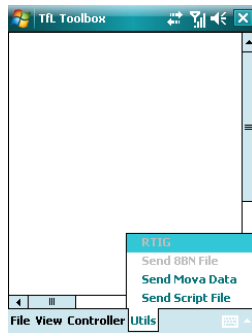
Auto LF: This will cause a Line Feed to be added to every received carriage return, so that the screen automatically scrolls up, as opposed to just over-written. This option when ticked can make results like IOPs easier to read as previous states scroll up instead of being over-written on the same line.

Controller



This simply is where the current connection type is chosen.

Utils



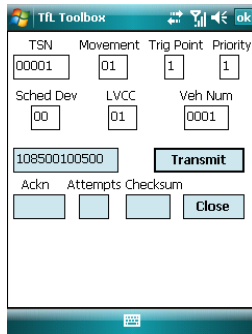
The Utilities Menu is a dynamic menu that enables some items depending on the option chosen under the controller menu.

Send Script File: This is an alternative to using the `>>` method of sending a script file using a control key. The same rules apply to the script file but this option gives a direct route to choosing the script file to send.

If any kind of Mova unit or Standard is chosen then **Send Mova Data** is enabled. This option is for sending a Mova data set to a Mova unit. The reason for also including standard is because Microsense MTC has in built MOVA. The MOVA datasets in PT or MDS format are to be manually copied into the 'TfL Toolbox MOVA' found under 'My Documents'. Since Pocket PCs hide the file extension it can be better to rename the file like *filename.MDS.MDS* to give it a double extension. This means the file will show up on the PDA as *filename.MDS*.

If a Siemens T700/T800/T900 controller is chosen then **'Send 8bn File'** is enabled. This is for uploading a controller configuration into a ST700/ST800/ST900. Normally this option is used to send an 8bn file to a ST700 to set it up as a Pelican, Nearside or Blackout controller as necessary. These 3 8bn files are preloaded into the 'TfL Toolbox' directory on installation. Any additional 8bn files can be copied manually into the 'TfL Toolbox' folder found under 'My Documents'.

If iBus Bus Radio Controller option is chosen then the RTIG Test is enabled. This brings up another screen :-



The screenshot shows a software window titled "TFL Toolbox" with a standard Android-style title bar. The window contains a form for configuring a test message. The fields are arranged as follows:

TSN	Movement	Trig Point	Priority
00001	01	1	1

Sched Dev	LVCC	Veh Num
00	01	0001

Below these tables, there is a large text input field containing the hexadecimal value "108500100500". To the right of this field is a "Transmit" button. At the bottom of the dialog, there are three checkboxes labeled "Ackn", "Attempts", and "Checksum", all of which are currently unchecked. To the right of these checkboxes is a "Close" button.

This is a test dialog box used with an RTIG Bus Priority system.

This can send dummy test messages for maintenance purposes when used together with an external Bus Transceiver.

Paul Van Gelder has one made up and working for demonstration if necessary and also has the construction details for any further units.

Version Numbers

To confirm your running version number check on the About Screen under the File Menu.

1.0	22 nd February 2003	Initial Release
1.1	7 th March 2003	Additional Controller Type 'MSL TCAM'
1.11	23 rd March 2003	Additional Controller Type 'Bus Beacon Tester' and RS-485 Test (used to be Bus Processor) moved to Utils Menu.
1.12	3 rd April 2003	Additional Controller Types 'Siemens MOVA', 'Monitron MOVA', 'Monitron LMU' and 'Bus Beacon Eavesdrop'. Put all 3 MOVA options Ferranti, Monitron and Siemens under a single pop up MOVA option and the two bus beacon options under a single Bus Beacon pop up. Added ability to Send MOVA Data under the Utils Menu.
1.13	14 th October 2003	Addition of Auto LF to View Menu and the ability to direct input to a text file using the stored control key commands.
1.20	23 rd May 2004	Addition of Comm Port selection and Bluetooth check box to the settings screen. Both these additions allow use with a remote connectBlue Bluetooth Serial Port. First recompile for PPC2003.
1.30	29 th November 2005	Addition of various MOVA controller types and the ability to send a MOVA version 5 MDS file.
1.31	7 th January 2006	Addition of Bluetooth Shut First option to the Settings screen
1.40	12 th April 2006	Serial Data configuration adjusted, 7 bit even parity is now emulated onto 8 bit no parity words. This makes Bluetooth power cycling optional, although auto baud on certain controllers would still make reconnection a requirement.
1.50	12 th June 2006	Addition of Peek OTU-F/Chameleon controller type. Added ability to Send Script File direct from the Utils menu. Added the ability to use the BlueCOM Bluetooth adapter (untested)
1.51	25 th May 2007	Bug Fix on resizing main window and calculating number of visible text lines.
1.60	16 th November 2007	Change to 'Send MOVA Data' routine to also handle MOVA M6.0 MDS files. Inclusion of ST900 Controller on original ST800 menu option.
1.61	21 st January 2008	Compatibility Issue fixed where Control Keys, such as Control 0 to set Siemens Clocks, did not work on Windows Mobile 2006. Added Siemens SmartLink to controller menu. Change menu item 'Peek TRX' to read 'Peek TRX/PTC-1'
1.70	8 th September 2008	Addition of BS=DEL Settings option. Addition of File Exists - Append/Replace/Cancel. Bus Beacon Test replaced with RTIG Test.

Known Problems

'Unable to open Serial Port' can be caused by the infra red beam settings being set to Receive all incoming beams. To clear this problem click Start -> Settings -> Connections -> Beam and untick the 'Receive all incoming beams and select discoverable mode' tick box.

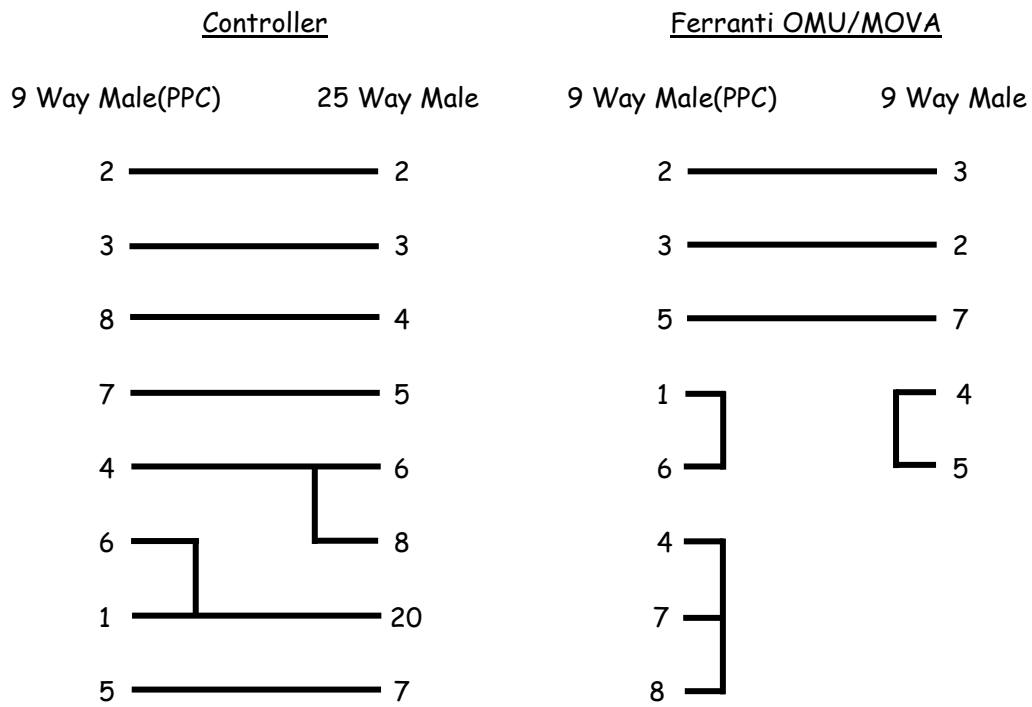
If End Task is used to force a program exit while a dialog box is still displayed, the program does not have the chance to release the serial port. This will lock the serial port and cause 'Unable to Open Serial Port' errors on re-entry to the program. To release the serial port do a warm reset on the Pocket PC.

Using the Standard Controller settings (1200 baud, 7 bits & even parity) on the XDA, transmit characters are lost if typed too quickly from the keyboard. At all other faster baud rates the problem is not seen. Since this problem only occurs on the XDA and not with an XDAII or iPAQ I can only assume this is a problem with the XDA serial port. The only cure is to type slower.

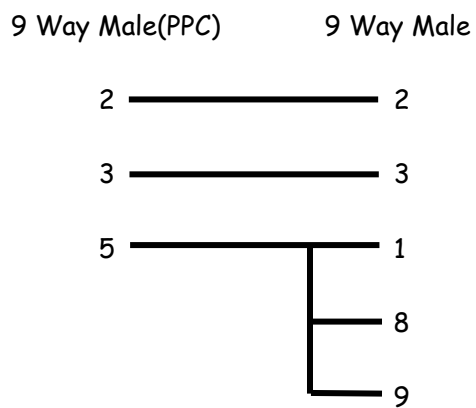
Using an XDAII, communication with a Siemens Gemini MOVA unit is only possible at 1200 baud when using the built in (com1:) serial port. When using a Bluetooth serial plug communication is fine. This problem was not seen on the original XDA.

Cable Adapters

These are adapters that are added to the standard Pocket PC serial lead.



Monitron LMU

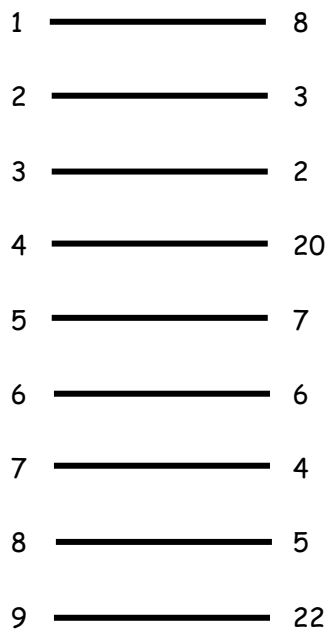


This adapter is added to a Pocket PC serial card. These have been found on iPAQs which were supplied for Livewire. Commonly they are set to COM6.

Controller

9 Way Female(PPC)

25 Way Male



connectBlue Bluetooth Serial Plug

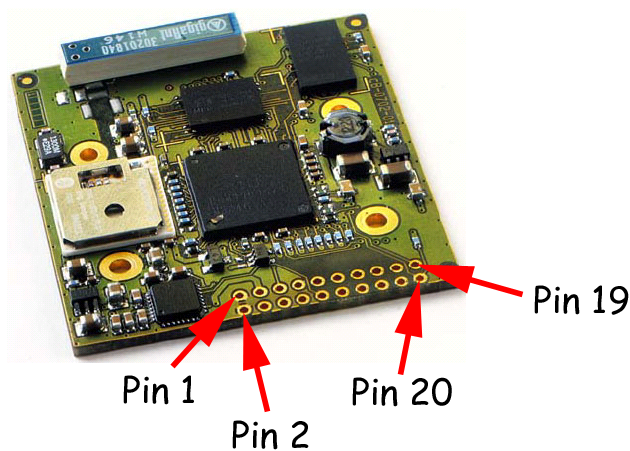
On Bluetooth enabled PDAs it is possible to use a Bluetooth Serial Plug, this eliminates the direct serial cable plugged into Comm1.

This method of connection is useful for 2 reasons:

- 1) Not having to plug a cable in the PDA eliminates wear and tear on the unit. In practise it has been found that the Comm1 connection on PDAs is not very robust and failures have occurred due to heavy use.
- 2) Using a wireless link it is possible to wander round a site checking pushbuttons on IOPs as they are pressed at each pole.

The Bluetooth Serial Port Adapter is configured as a Serial Port Profile (SPP) device. It is paired to the PDA and configured to be accessed via a virtual comm port.

The connections between the connectBlue module and a 25 way Male D Type are shown below:



Bluetooth Module

25 Way Male

1 + 2	—————	7	(0v)
3 + 4	—————	9 + 10	(5v) Also connected to Anode of the Led
5	—————	5	
6	—————	2	
7	—————	4	
8	—————	3	
9	—————	20	
10	—————	6	
14 Blue Led	Bluetooth	(Cathode via Resistor) Active Low	
		390R if a Blue led	
		820R if a Red led	

A separate pdf document is available detailing the building of this adapter.