

Context Sensitive Editors for Teradyne Test Programs

Simplified reading and editing of TestStation program files

Application Overview

Teradyne's 228X and TestStation in-circuit testers use a powerful test language to control the test instruments and execute program flow control. Generally, programmers do not need to become test language experts because the high-level test programming language is generated automatically by Teradyne's comprehensive automatic test generation (ATG) software. The ATG software algorithms ensure that the board test program tests the board safely, efficiently, and with optimum throughput and fault coverage.

There are often times, however, when the user may want to modify the test program to customize tests, add operator instructions, interface to external data collection software, or add or remove tests. To do this, Teradyne supplies a plain text editor with the TestStation software called the Programmer's File Editor (PFE). PFE is a general purpose, easy-to-use, Windows-based text editor that you can use to edit the test program text files that are generated by the test generation software.

Programmers that intend to do a lot of editing of Teradyne test programs may prefer to use a more powerful text editor that has additional capabilities that are not supported by the basic PFE editor. Two such powerful text editors are TextPad (www.textpad.com) and UltraEdit (www.ultraedit.com).

Here is a list of some of the advanced text editing capabilities that are available with these powerful text editors:

- The ability to edit huge files, up to the limit of the memory in your PC.
- Customizable color syntax highlighting. This allows the editor to highlight legal Teradyne test language commands and syntax. It also allows the programmer to quickly recognize command spelling and syntax errors.
- The ability to highlight program comments in a user defined color. UltraEdit recognizes and can highlight nested comments.
- The user interface menus and commands support different languages (English, French, German, Spanish, etc).
- The ability to have unlimited undo/redo capability.
- Block (column) selection mode and editing which makes it easy to edit data in columns.
- The ability to visibly display tabs and spaces.

- The ability to record keystroke macros to simplify repetitive editing.
- Text can be automatically aligned and indented, relative to the previous line, to aid block indentation.
- A powerful search/replace engine using regular expressions.
- Print previewing, and printing with customizable headers/footers and page breaks.
- Built in file comparison utility, and up to 32 user-defined tools with parameter macros.

Hardware Requirements

The advanced editors described in this document can be installed on Windows based PCs.

Software Requirements

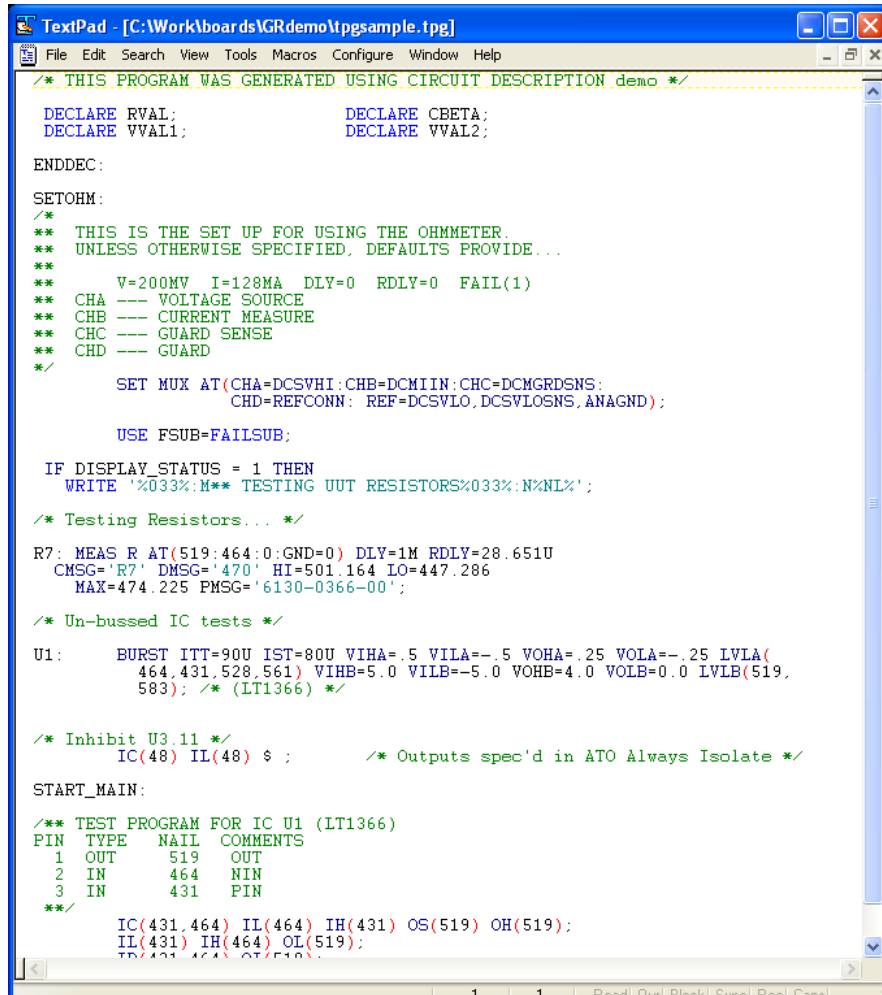
Fully functional, free, evaluation version of TextPad and UltraEdit can be downloaded from the web sites listed above. Follow the instructions to download and install the software.

Once the application is installed, you can define a syntax file that describes the syntax and commands for displaying Teradyne test program files. The syntax file for Textpad is called ***tpg.syn*** and for UltraEdit it is called ***tpl.uew***. On PC's that have Teradyne's Navigate software installed, these files can be found in Teradyne's application directory: ***drive:\Teradyne\GRNavigate\228x\apps***.

For the UltraEdit application the ***tpl.uew*** syntax file must be placed in the ***%appdata%\VDMComp\UltraEdit\wordfiles*** folder.

Application Examples

Below is a sample screen shot of a test program being edited by the TextPad editor and a special Teradyne test program language syntax file. Notice that comments are highlighted in green and valid test program commands are highlighted in blue. With this context sensitive highlighting it is easy for the programmer to identify syntax errors like open ended comments and invalid commands.



```
TextPad - [C:\Workboards\GRdemo\tpgsample.tpg]
File Edit Search View Tools Macros Configure Window Help
/* THIS PROGRAM WAS GENERATED USING CIRCUIT DESCRIPTION demo */
DECLARE RVAL;          DECLARE CBETA;
DECLARE VVAL1;         DECLARE VVAL2;

ENDDEC;
SETOHM;
/*
** THIS IS THE SET UP FOR USING THE OHMMETER.
** UNLESS OTHERWISE SPECIFIED, DEFAULTS PROVIDE...
**
** V=200MV I=128MA DLY=0 RDLY=0 FAIL(1)
** CHA --- VOLTAGE SOURCE
** CHB --- CURRENT MEASURE
** CHC --- GUARD SENSE
** CHD --- GUARD
*/
SET MUX AT(CH A=DCSVHI:CH B=DCMIIN:CH C=DCMGRDSNS:
           CH D=REFCONN: REF=DCSVLO,DCSVLOSNS,ANAGND);

USE FSUB=FAILSUB;

IF DISPLAY_STATUS = 1 THEN
  WRITE '%033%M** TESTING UUT RESISTORS%033%N%NL%';
/* Testing Resistors... */
R7: MEAS R AT(519:464:0:GND=0) DLY=1M RDLY=28.651U
    CMSG='R7' DMSG='470' HI=501.164 LO=447.286
    MAX=474.225 PMSG='6130-0366-00';
/* Un-bussed IC tests */
U1: BURST ITT=90U IST=80U VIHA=.5 VILA=-.5 VOHA=.25 VOLA=-.25 LVLA(
     464,431,528,561) VIH B=5.0 VIL B=-5.0 VOHB=4.0 VOLB=0.0 LVL B(519,
     583); /* (LT1366) */
/* Inhibit U3.11 */
IC(48) IL(48) $ ; /* Outputs spec'd in ATO Always Isolate */
START_MAIN:
/** TEST PROGRAM FOR IC U1 (LT1366)
PIN TYPE  NAII COMMENTS
1  OUT   519  OUT
2  IN    464  NIN
3  IN    431  PIN
**/
IC(431,464) IL(464) IH(431) OS(519) OH(519);
IL(431) IH(464) OL(519);
ID(431,464) OT(519);
```

Additional Information

You will also find an application note titled *EditTPGwithTextpad.doc* in the drive:\Teradyne\GRNavigate\228x\apps folder that provides further details on how to install and setup the Textpad application on your PC.