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CONVENTIONS USED IN THIS DOCUMENT

This document uses the following conventions:

- Microsoft® Windows XP and Vista will be simply referred to as Windows in this manual
- The general term “CT Tester” used in this manual refers to any of the EZCT compatible Vanguard Current-Transformer Testers (EZCT and EZCT-10)
- Menu names are referred to as **Menu Name**
- Menu items are referred to as *Menu Item*
- Dialog boxes and their elements (buttons, options, etc.) are referred to as “Dialog Box Element”
- PC keyboard keys are referred to as **[Key]**. Key combinations are shown as **[Key]+[Key]**.
- File locations, directories, and filenames are shown as “C:\folder\filename”
- A key or switch on the CT Tester is indicated as **[KEY]**
- CT Tester menu options are referenced as (*MENU OPTION*)
- A CT Tester’s LCD screen output is shown as:

```
1. OPTI0N 1
2. OPTI0N 2
3. OPTI0N 3
4. OPTI0N 4
```

- Warning messages are indicated as:



Warning message

WARNING

- Important notes are indicated as:



Note details

NOTE

1.0 INTRODUCTION

The EZCT software is a Windows-based PC software application for use with Vanguard's EZCT and EZCT-10 current-transformer tester. This software allows users to perform the following tasks:

- Test a current-transformer directly from a PC.
- Create test plans for current-transformers.
 - The test plan can be created on the PC and then transferred to the CT Tester.
 - A test plan can be used to quickly test a current-transformer and obtain test results.
 - A test plan can be retrieved from the CT Tester and saved on the PC hard drive.
- Export test records in Microsoft® Excel® format.
- Retrieve test records stored in the CT Tester.

1.1 System Requirements

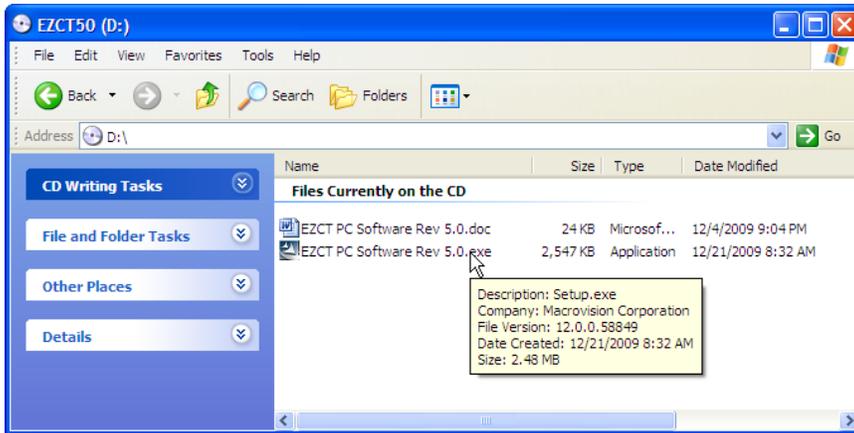
The EZCT software has the following minimum system requirements:

- PC running Microsoft® Windows® XP or Windows® Vista
- 2 Megabytes of hard drive space
- CD-ROM or DVD-ROM drive
- RS-232C (serial) port or USB port

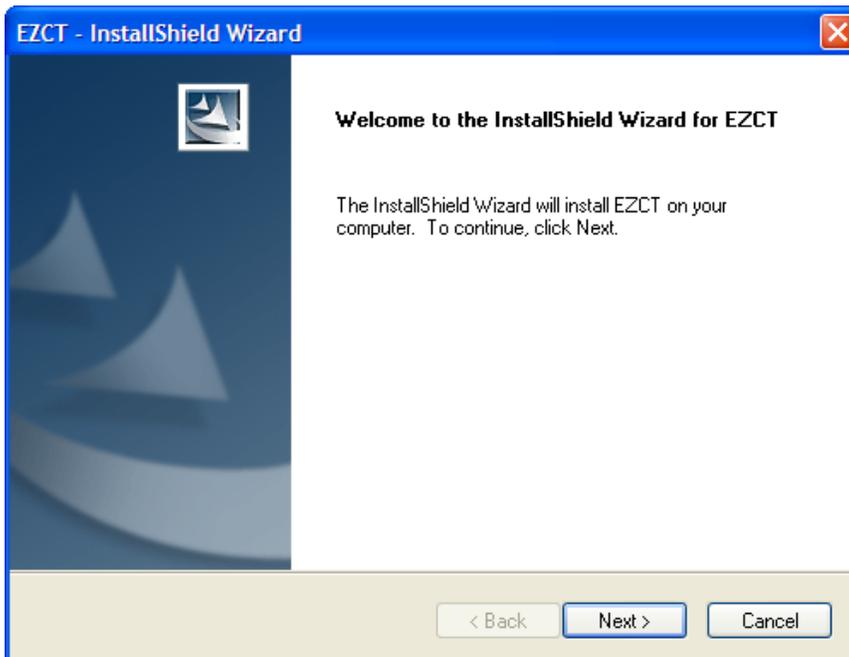
2.0 SOFTWARE INSTALLATION

Follow the steps below to install the EZCT software on your PC.

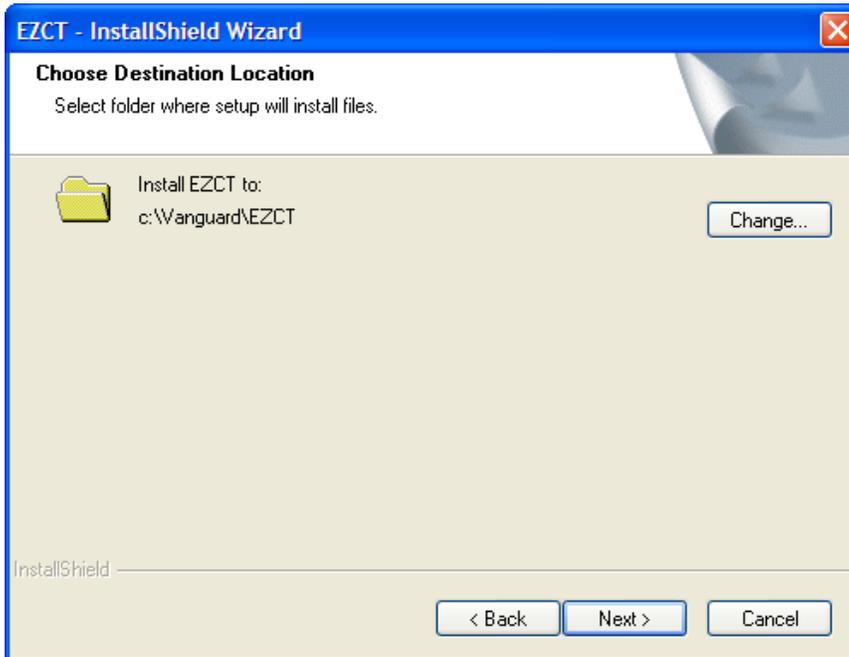
1. Insert the installation CD in the PC's CD or DVD drive.
2. From the Windows Desktop, click on the "Start" button to bring up the **Start Menu**.
3. From the **Start Menu**, click on *My Computer* to open the My Computer window.
4. Double click (or single click in some Windows configurations) on your CD/DVD Drive icon to navigate the installation CD. The contents of the CD will be listed as shown below:



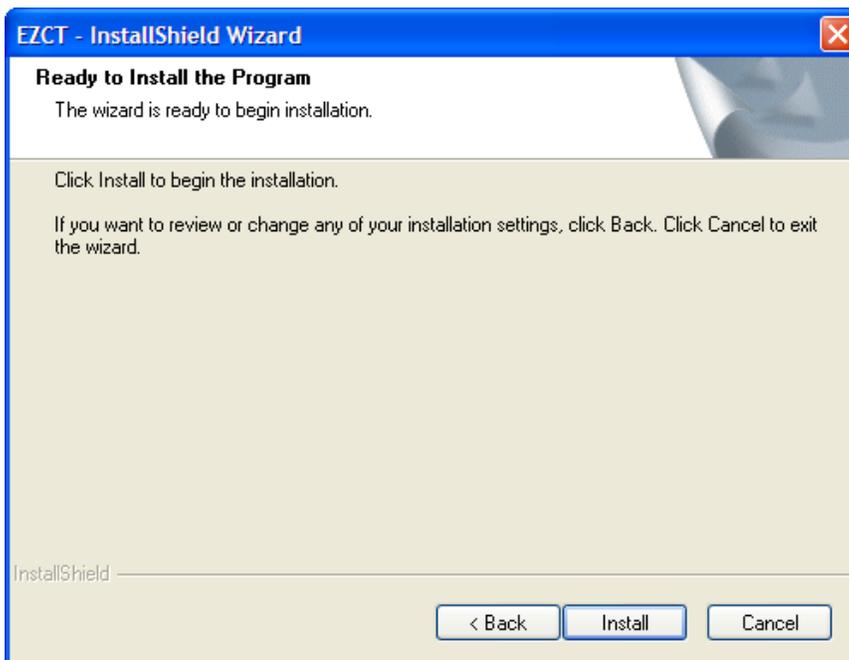
5. Double click (or single click in some Windows configurations) on the "EZCT PC Software Rev 5.x.exe" file to start the installation process. The EZCT InstallShield Wizard will appear as shown below:



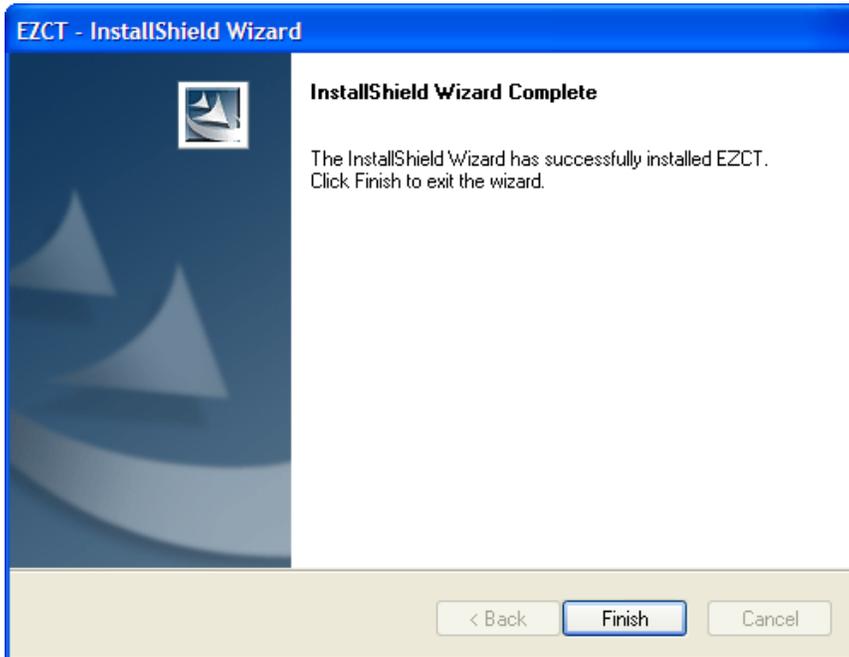
- Click on the “Next” button to continue. The following screen will be displayed showing the location on your hard drive where the software will be installed (C:\Vanguard\EZCT):



- You may choose a different installation location by clicking on the “Change...” button and then browsing to the location on your hard drive where you would like to install the software. If you would like to install the software in the default location, click on the “Next” button to continue. The following screen will be displayed:



8. Click on the “Install” button. The InstallShield Wizard will copy files to your hard drive. The following screen will be displayed once the software has been successfully installed:



9. Click on the “Finish” button to close the InstallShield Wizard and complete the installation process.

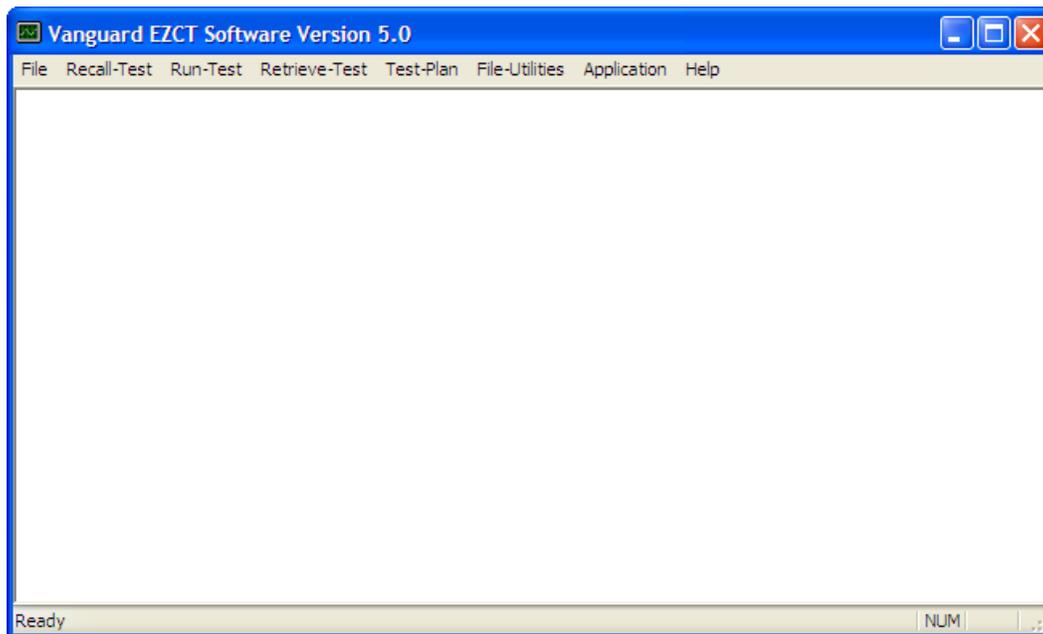
3.0 STARTING AND CONFIGURING THE EZCT SOFTWARE

During the installation process, a Vanguard program group will be created under the *All Programs* submenu in the Windows **Start** menu. To launch the EZCT software:

**NOTE**

You can create a shortcut on your desktop to speed up the application launching process. Please see the Microsoft Windows Help and Support Center (can be accessed by pressing the F1 key when viewing the Windows desktop) for information on how to create shortcuts.

1. Click on the Windows “Start” menu button to open the **Start Menu**.
2. Click on the *All Programs* menu item.
3. Click on the *Vanguard* menu item.
4. Click on the *EZCT* menu item. The EZCT main application window will appear as shown below:

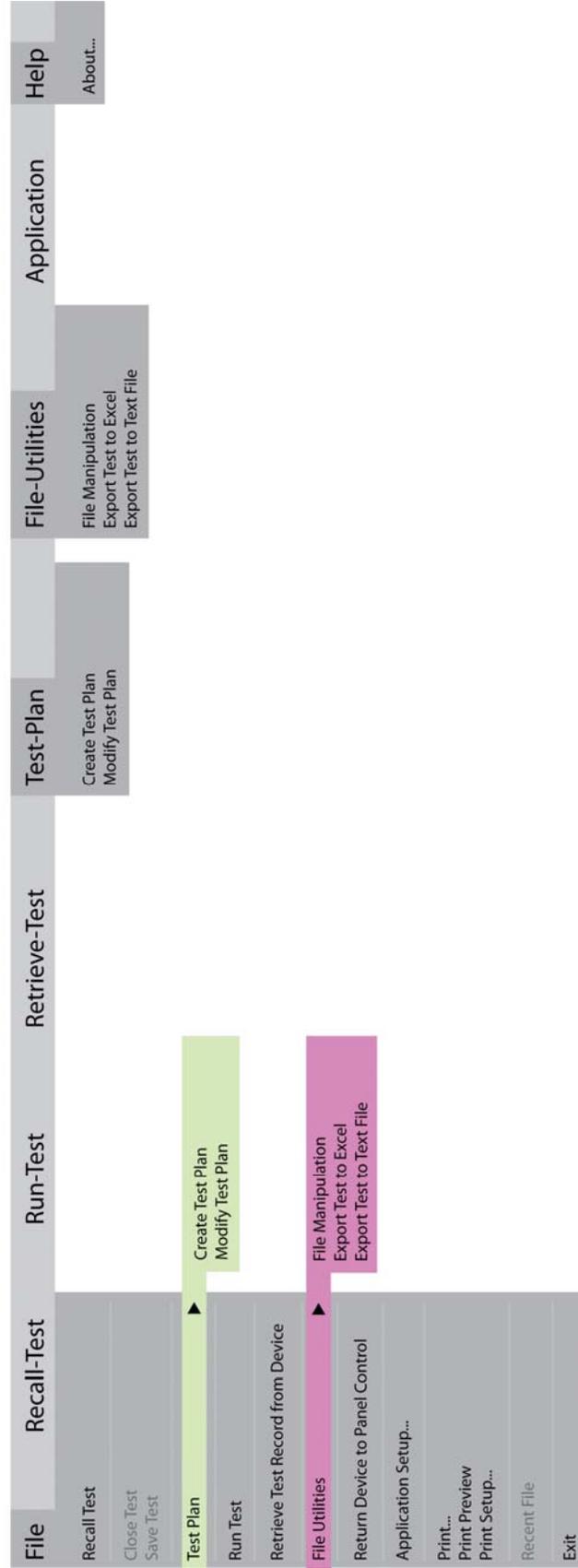


3.1 Main Menu Item Descriptions

The EZCT Main Menu bar features the following menus:

- **File:**
 - Recall test records from the hard drive
 - Retrieve test records from a CT Tester
 - Configure system parameters and options
 - Use various file utilities
 - Run tests
 - Print test records
 - Exit the program
- **Recall-Test:** Recall test records from the PC hard drive for viewing
- **Run-Test:** Run a test plan
- **Retrieve-Test:** Retrieve test records from a CT Tester
- **Test-Plan:** Create and modify test plans
- **File-Utilities:** Access the test records directory and export test records
- **Application:** Configure application setup parameters
- **Help:** View basic version information about the software and the connected CT Tester

EZCT Software Main Menu Structure



3.2 Enabling the CT Tester's Computer Interface

If a CT Tester is connected to the computer running the EZCT software, the CT Tester must first be placed in Computer Control Mode. Once in Computer Control Mode, the EZCT software can be used to transfer test records and test plans and also to run tests.

To enable the Computer Control Mode:

1. Connect the CT Tester to the PC via either the RS-232C port or USB port and turn on the power.
2. Once the CT Tester has gone through its start-up cycle, the main menu will be displayed as shown:

```
1. RUN TEST      01/14/10
2. SETUP        07:48:59
3. DIAGNOSTIC
```

Press the **[2]** key (*SETUP*).

3. The following screen will be displayed:

```
1. RECORD ID
2. PRINT RECORD
3. RESTORE RECORD
4. NEXT PAGE
```

Press the **[4]** key (*NEXT PAGE*).

4. The following screen will be displayed:

```
1. COMPUTER CONTROL
2. SET TIME
3. KNEE POINT MARKER
4. NEXT PAGE
```

Press the **[1]** key (*COMPUTER CONTROL*).

5. The following screen will be displayed:

```
**** !DANGER! ****
REMOELY CONTROLLED.
HIGH VOLTAGE MAY BE
PRESENT!
```

The CT Tester is now in Computer Control Mode and is ready to communicate with the EZCT software. You must now configure the EZCT software's settings. Please see section 3.3 below.

3.3 Application Setup

Before using the program, the application setup parameters should be reviewed and changed as required. To change the setup parameters:

1. Make sure the EZCT software is running on the PC.
2. Click on the **Application** menu (Alternatively you can click on the **File** menu and select *Application Setup...*). The following window will be displayed:

Application Setup

Default Print Orientation

Landscape
 Portrait

Communications

Use USB port
COM Port: COM1

Localization

Frequency: 60 Hz
Date Format: (US) MM/DD/YY

Summary Page Display

Select tap and then press up or down to change order.

Order	Tap
1	X1-X2
2	X1-X3
3	X1-X4
4	X1-X5
5	X2-X3
6	X2-X4
7	X2-X5
8	X3-X4
9	X3-X5
10	X4-X5

Test Record Path
c:\Wanguard\EZCT

Test Plan Path
c:\Wanguard\EZCT

OK Cancel

a. Default Print Orientation

Select the default print orientation for printing test results by clicking on either the “Landscape” (horizontal) or “Portrait” (vertical) radio button. The landscape orientation is recommended for printing test records.

b. Communications

If the EZCT is connected to the PC via the USB port, check the “Use USB port” checkbox. You can ignore the “COM Port:” drop down list.

If the EZCT is connected to the PC via the RS-232C (serial) port, un-check the “Use USB port” and select the correct COM: port from the “COM Port:” drop-down list.

c. Localization

Select the correct frequency from the “Frequency:” drop-down list (60 Hz or 50 Hz).

**NOTE**

The frequency selection is for test record reference only. The CT's are tested at the supplied line voltage and frequency.

Select the preferred date format from the “Date Format:” drop-down list.

d. Summary Page Display

In this section you can configure the order the tap information is displayed on the summary page of a test record (see section 4.7). To change the order of a tap, click on the tap and then click on either the up arrow or the down arrow to the right of the list. The selected tap will be moved up or down on the list respectively. The tap order information is stored with each test record.

e. Test Record Path

The default location where test records are stored on the PC hard drive is listed in the “Test Record Path” section. You can change the default test record storage location by clicking on the “Browse” button and then selecting a different folder.

f. Test Plan Path

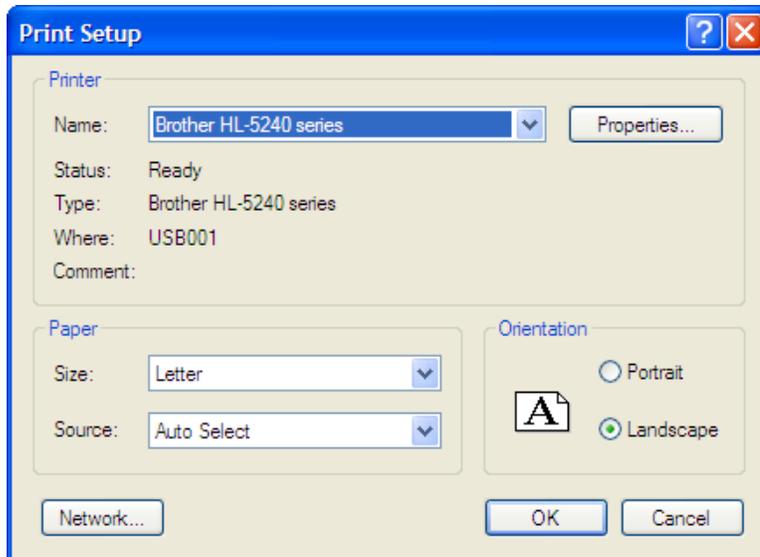
The default location where test plans are stored on the PC hard drive is listed in the “Test Plan Path” section. You can change the default test plan storage location by clicking on the “Browse” button and then selecting a different folder.

3. Click on the “OK” button to apply all changes to the application settings. The settings will be permanently stored for the current and any future sessions.

3.4 Printer Setup

To setup the printer:

1. Click on the **File** menu and select *Print Setup...* The following window will be displayed:



2. Select the printer you would like to use from the “Name” drop-down list.
3. Select the appropriate options for the printer.



NOTE

“Landscape” should be selected for the “Orientation” to make sure that the data table is not cut off on the printout. Also, please be sure to select “Landscape” as the default print orientation under Application Setup (See section 3.3)

4. Click on the “OK” button.

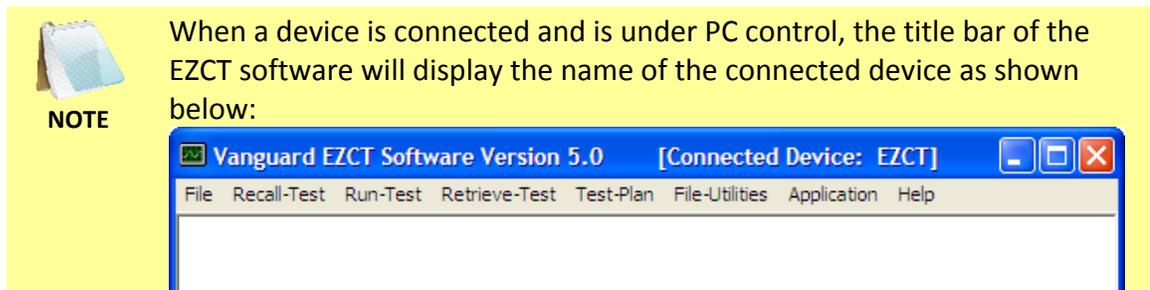
4.0 WORKING WITH TEST RECORDS

The EZCT software can be used to retrieve test records from a CT Tester or from the PC hard drive. Once a test record is retrieved, you can change the record header information, print the test results, change the nameplate ratio values, change the knee point marker, change the frequency, add or modify test notes, and save the record to the hard drive.

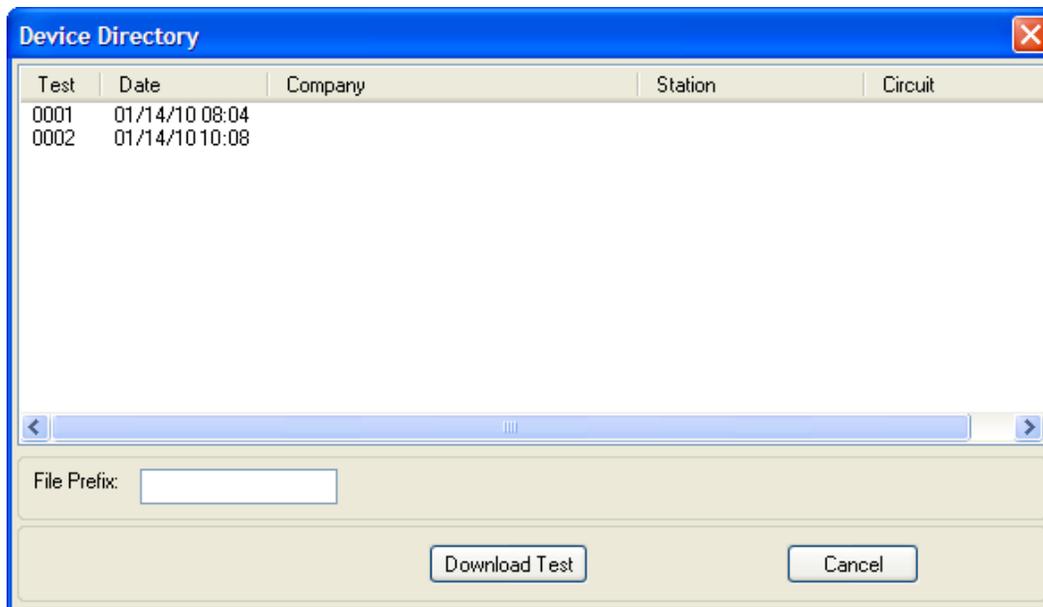
4.1 Retrieving Test Records From a CT Tester

To retrieve a test record from a CT Tester:

1. Make sure the EZCT software is running. Connect the CT Tester to the PC via either the RS-232C port or the USB port.



2. Click on the **Retrieve-Test** menu (alternatively you can click on the **File** menu and then select *Retrieve Test Record From Device...*). A window will appear listing a directory of all the test records stored in the CT Tester's memory as shown below:



3. You can select a test record to be retrieved by clicking on the test record number. The selected record will be highlighted. You may select multiple records by holding down the **[CTRL]** key and clicking on the record numbers. All selected records will be highlighted. You may de-select a selected record by holding down the **[CTRL]** key and clicking on the selected record number a second time.

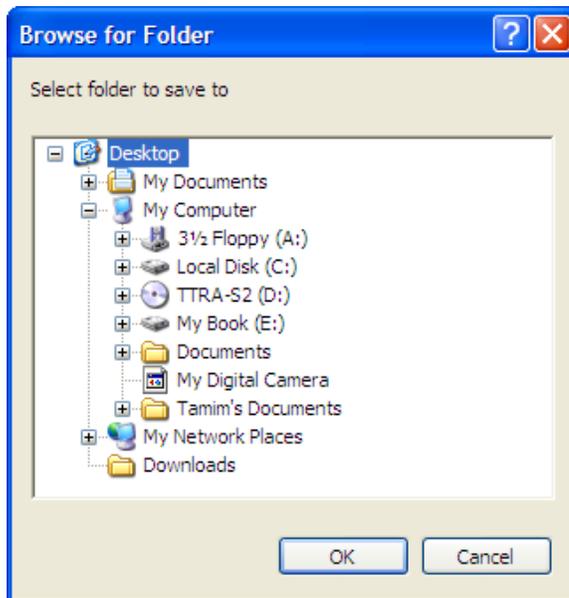
4. The “File Prefix” input field allows you to enter a word that will be used as part of the filename for the stored record on the PC hard drive. When a test record is retrieved from a CT Tester and stored on the hard drive, the filename is in the following format:

prefix-date-001.tst-ezct

Text from “File Prefix” Field Test Date Test Record Number File Extension

So if you would like the filename to be “*sample-date-001.tst-ezct*”, enter the word *sample* in the “File Prefix” input field.

5. Click on the “Download Test” button. The following window will be displayed:

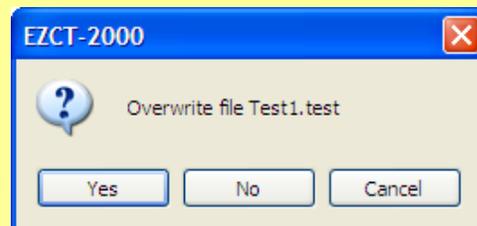


6. Browse to the folder where you would like the test record(s) to be saved and then click on the “OK” button. The selected test record(s) will be retrieved from the CT Tester and saved in the selected folder. The last test record that was retrieved will be displayed in the EZCT software.



NOTE

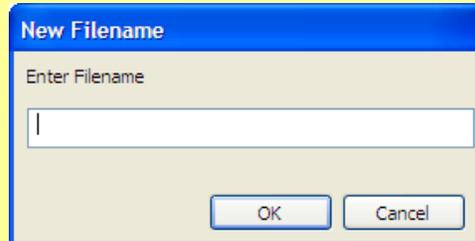
If a test record file with the same name already exists at the storage location, the following window will be displayed:



To cancel the retrieval process, click on the “Cancel” button.

To overwrite the existing file, click on the “Yes” button.

If you do not want to overwrite the existing file with the retrieved test record, click on the “No” button. The following window will be displayed:



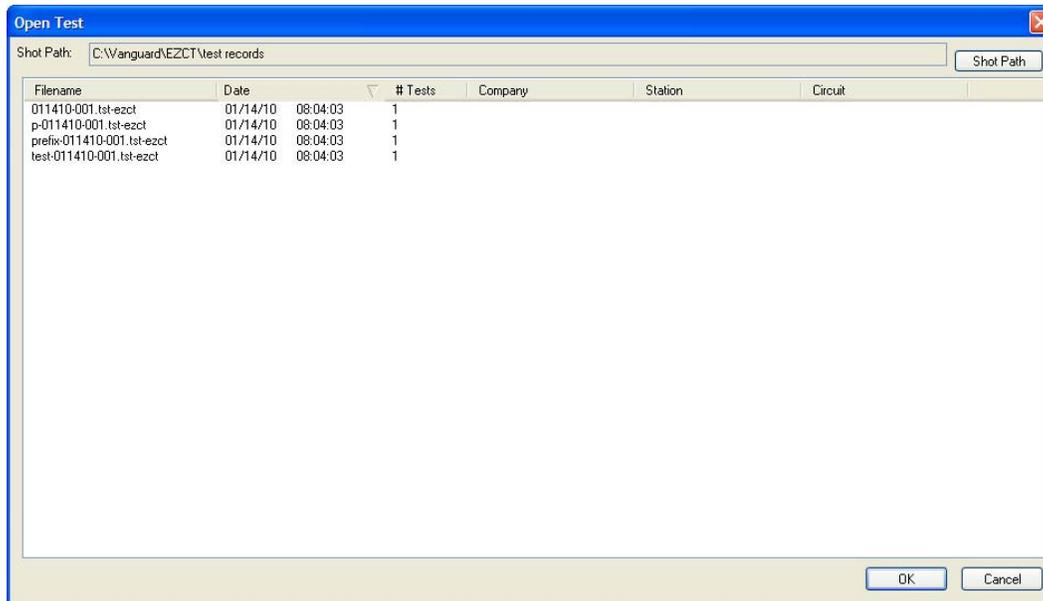
The image shows a standard Windows-style dialog box titled "New Filename". The dialog has a blue title bar. Below the title bar, the text "Enter Filename" is displayed above a white text input field with a vertical cursor. At the bottom of the dialog, there are two buttons: "OK" and "Cancel".

Enter a new file name for the retrieved test record and then click on the “OK” button. The test record will be retrieved from the CT Tester and saved with the new file name at the selected location.

4.2 Recalling a Test Record From the PC Hard Drive

Test records stored on the PC hard drive can be recalled using the steps below:

1. Click on the **Recall-Test** menu (or click on the **File** menu and select *Recall Test*). The following window will be displayed:



- The “Shot Path:” section at the top of the window displays the name of the directory where the test records are being retrieved from. If you wish to retrieve records from a different directory, click on the “Shot Path” button and browse to the folder containing the test records.
 - You can click on a column heading to sort the test records based on the column heading name (filename, date, number of tests, company, station, or circuit). An arrow next to the heading name will indicate whether the list is sorted in ascending or descending order. Click on the heading again to reverse the sort order.
2. Click on the filename you would like to retrieve and click on the “OK” button. The test record will be loaded and the tabulated test results will be displayed (please see section 4.7 for details).

4.3 Saving a Test Record

4.3.1. Saving a Test Record With Its Original Filename

1. If changes have been made to the current test record and you would like to save it with its original filename, click on the **Save** menu and select *Overwrite*.



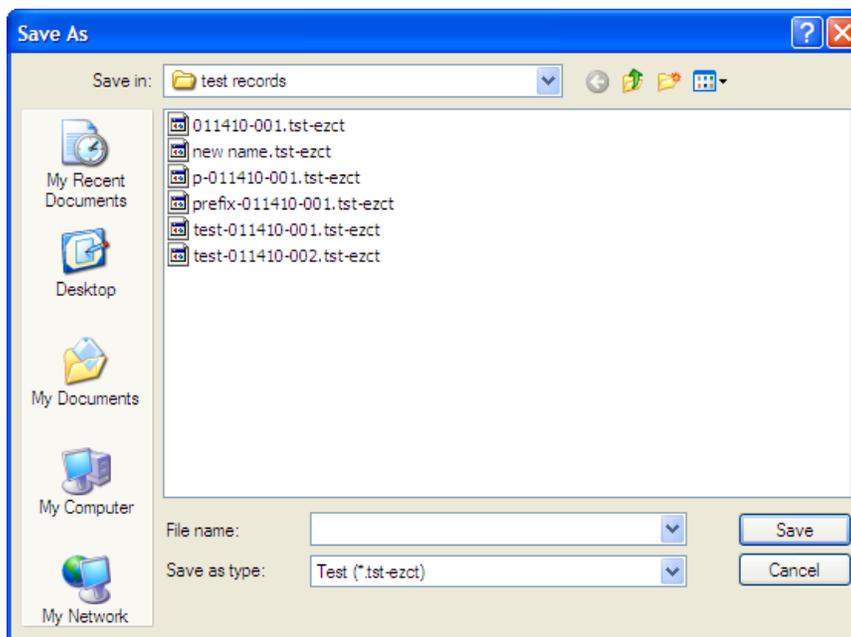
Alternatively, you can select the *Save Test* option from the **File** menu.

NOTE

2. The test record will be saved with its original filename.

4.3.2. Saving a Test Record With a Different Filename

1. To save an open test record with a different filename, click on the **Save** menu and select *Save As*. The following window will be displayed:

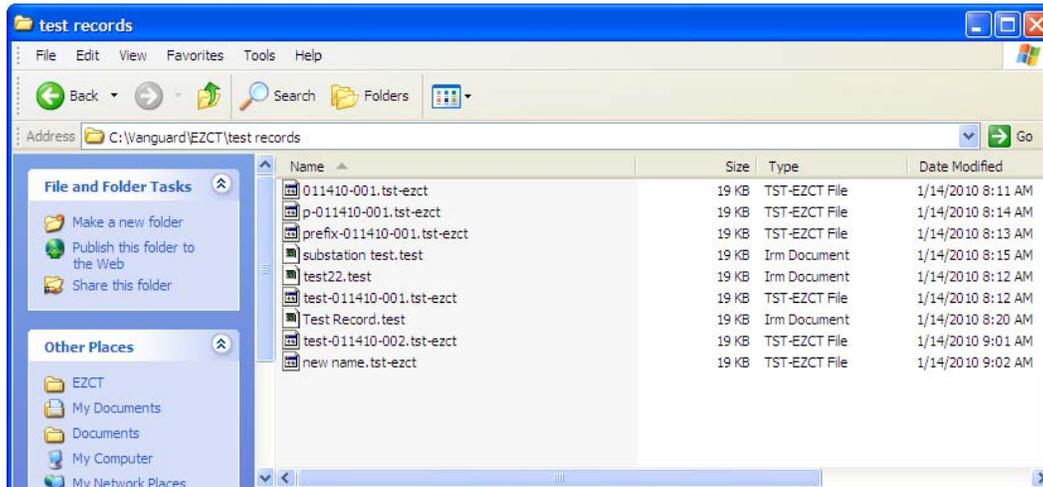


2. Browse to the folder where you would like to save the test record.
3. Enter the filename in the “File name:” input field.
4. Click on the “Save” button. The test record will be saved with the new filename.

4.4 Opening the Test Records Folder

To quickly access the default test record storage folder:

1. Click on the **File-Utilities** menu and then select *File Manipulation* (Alternatively you can click on the **File** menu, click on *File Utilities*, and then select *File Manipulation*). The default test record storage folder will be opened in Windows Explorer as shown below:

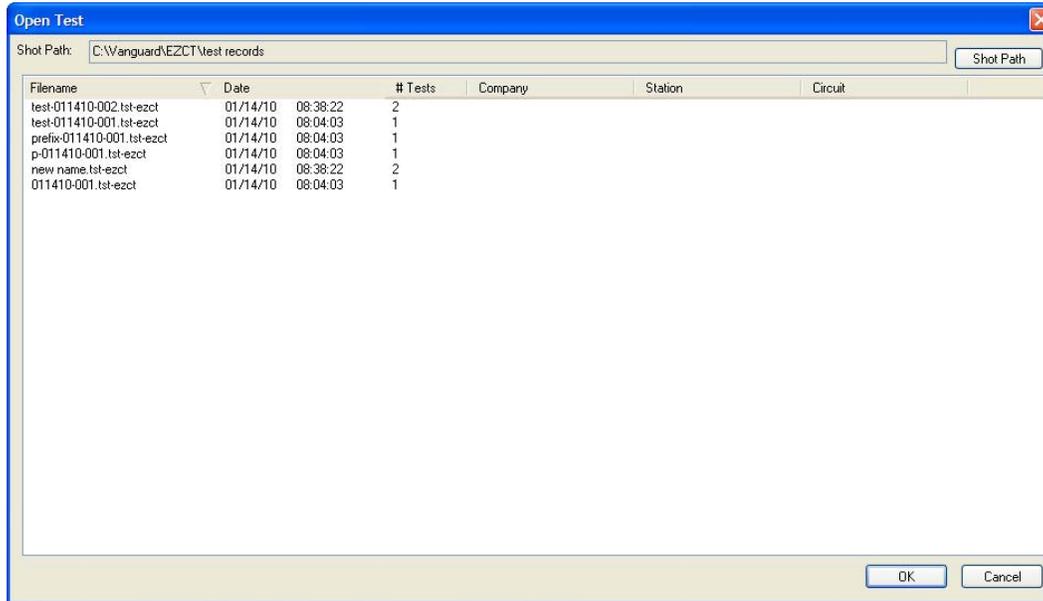


2. You can use standard Windows Explorer commands to copy, move, or delete the test record files.

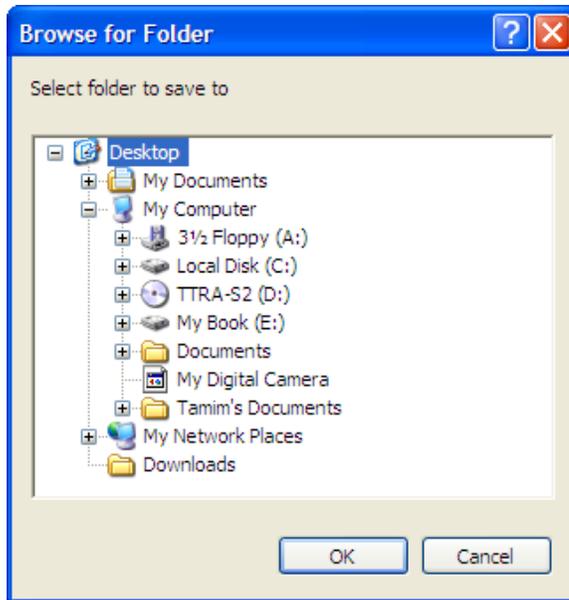
4.5 Exporting a Test Record in Microsoft® Excel® Format

You can export one or more test records in Microsoft® Excel® format. To export a test record in Excel® format:

1. From the **File-Utilities** menu, click on *Export Test to Excel* (alternatively you can click on the **File** menu, click on *File Utilities*, and then select *Export Test to Excel*). The following window will be displayed:



2. If the test record you would like to export is not in the current directory, click on the "Shot Path" button at the top right of the window and browse to the directory containing the file. Once you have located the test record to be exported, click on the file name. You may select additional test records by holding down the **[CTRL]** key and clicking on each subsequent file name. Once you have selected the test record(s) to be exported, click on the "OK" button. The following window will be displayed:



3. Browse to the folder where you would like the Excel[®] file(s) to be saved and click on the “OK” button. Figure 1 shows a test record in the EZCT software compared with the exported data in Excel[®].

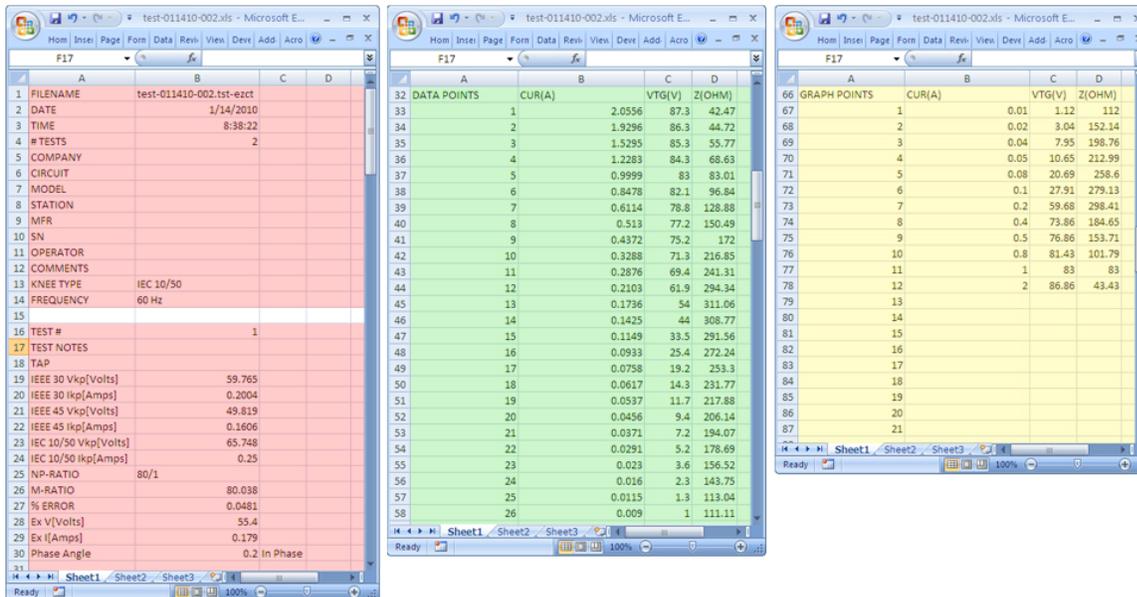
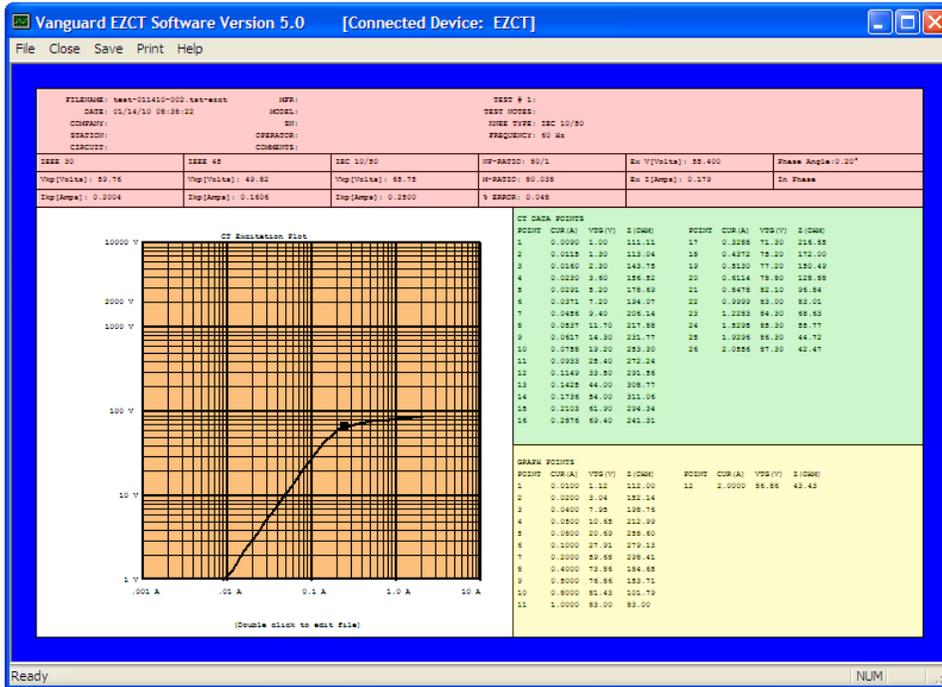
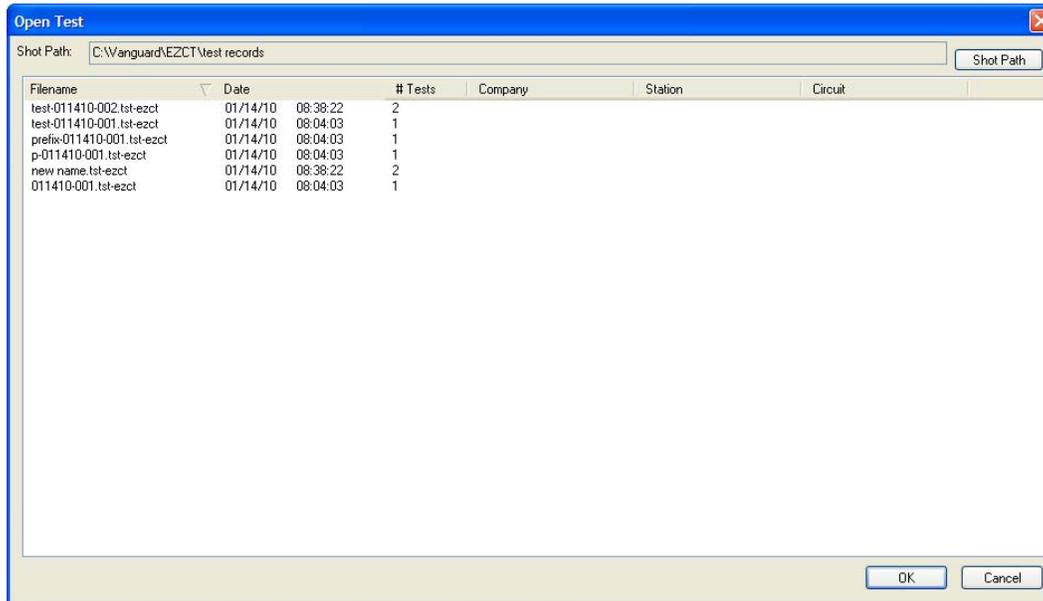


Figure 1. Test Record in EZCT Software (top) and Microsoft Excel (bottom)

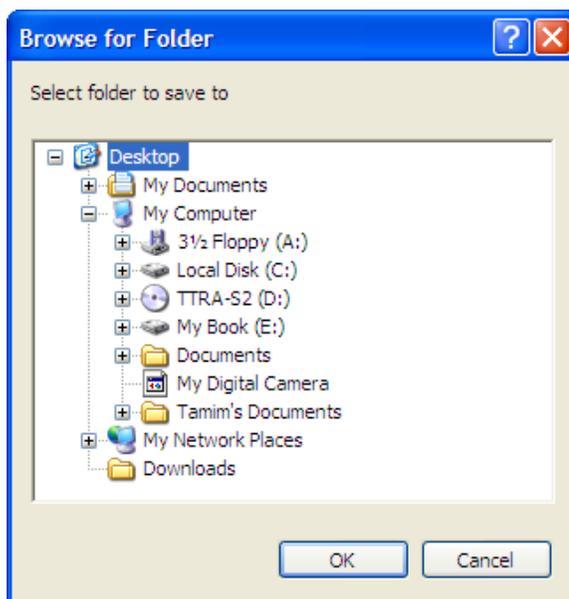
4.6 Exporting a Test Record to a Text File

Test records can also be exported to a plain text file. To export a test record to a text file:

1. From the **File-Utilities** menu, click on *Export Test To Text File* (alternatively you can click on the **File** menu, click on *File Utilities*, and then select *Export Test to Text File*). The following window will be displayed:



2. If the test record you would like to export is not in the current directory, click on the "Shot Path" button at the top right of the window and browse to the directory containing the file. Once you have located the test record to be exported, click on the file name. You may select multiple test records by holding down the **[CTRL]** key and clicking on each subsequent file name. Once you have selected the test record(s) to be exported, click on the "OK" button. The following window will be displayed:



- Browse to the folder where you would like the text file(s) to be saved and click on the "OK" button. Figure 2 shows a test record in the EZCT software compared with the exported data in plain text format.

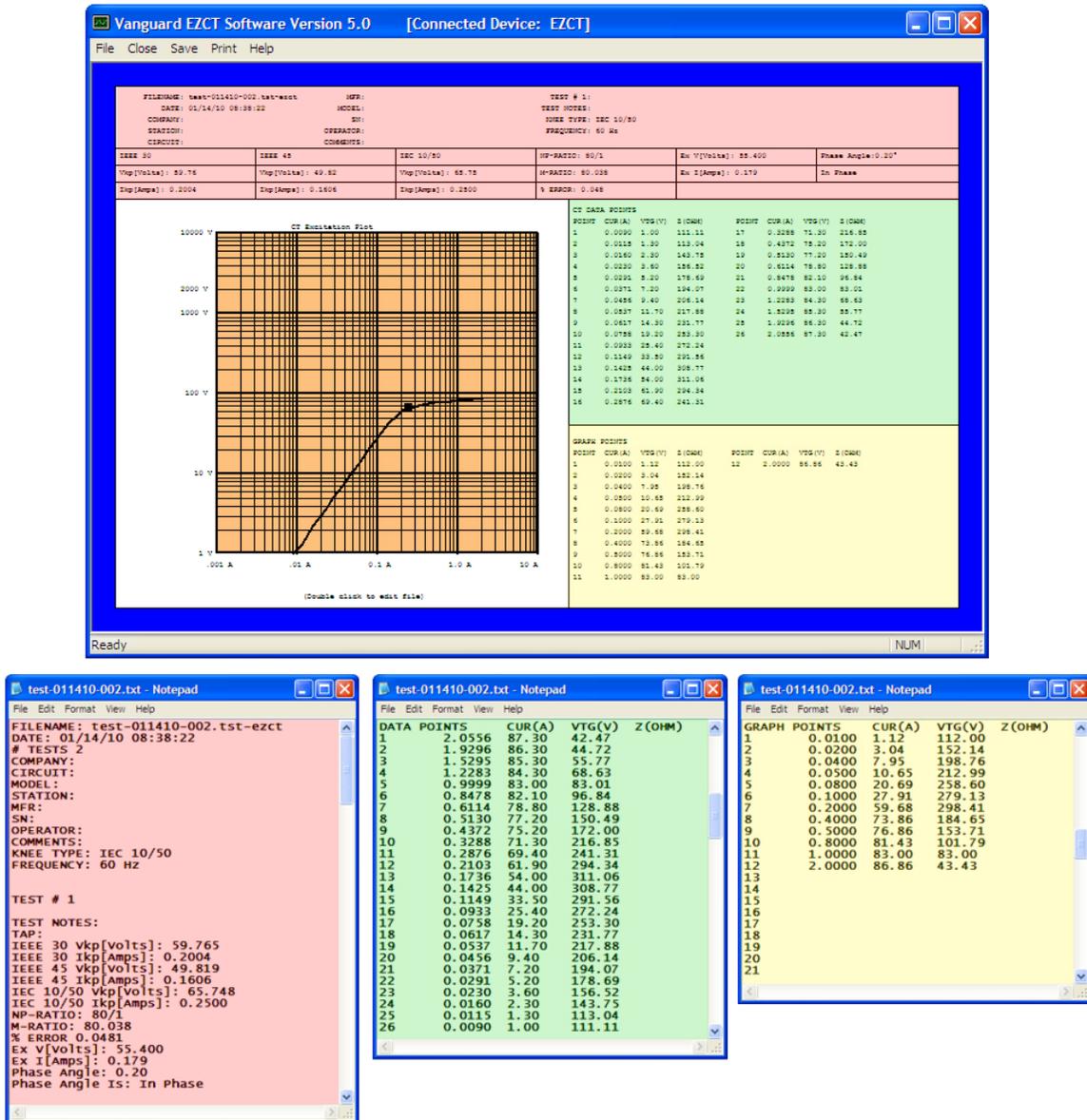


Figure 2. Test Record in EZCT Software (top) and in Plain Text Format (bottom)

4.7 Working with Tabulated Test Results

Once a test record has been retrieved (see sections 4.1 and 4.2 for instructions), the record details will be displayed as shown in Figure 3 below:

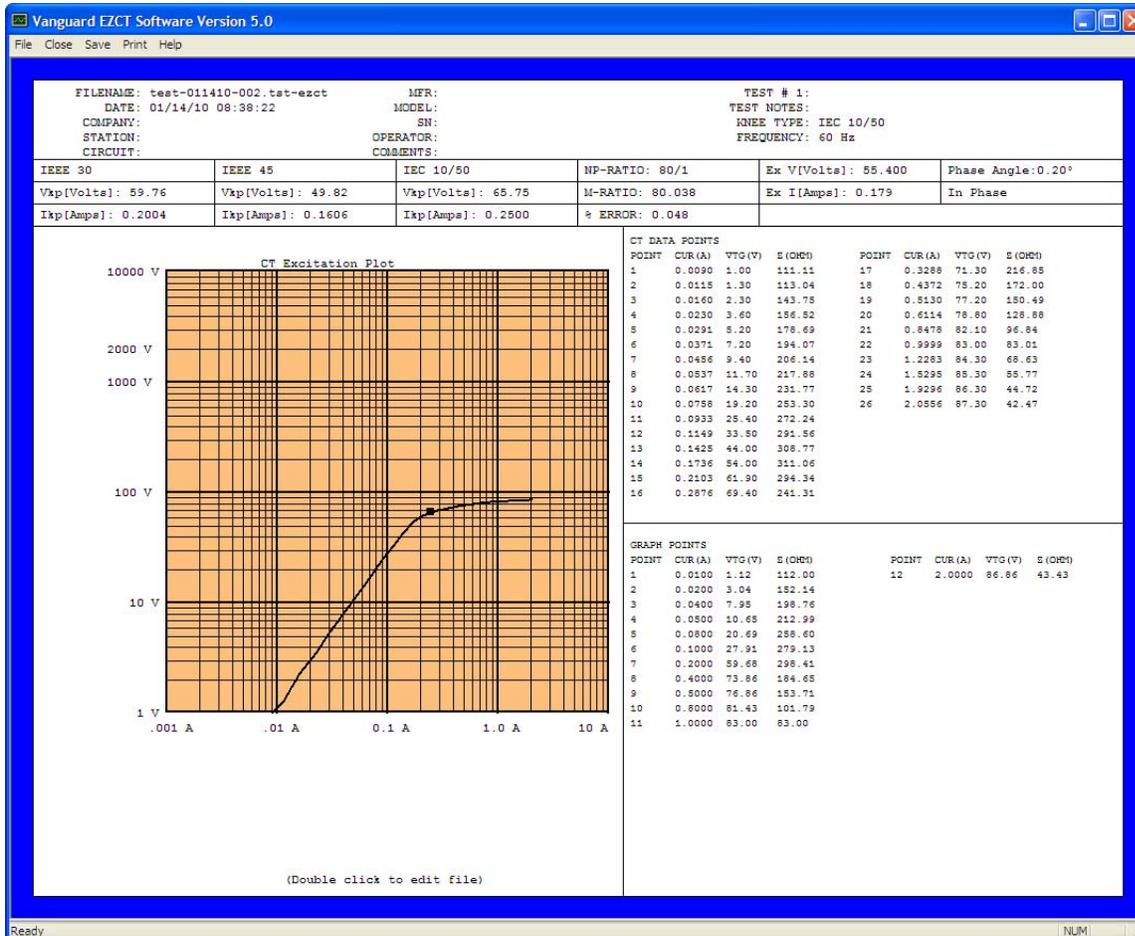


Figure 3. Typical Test Record Page (Excitation Test)

The menus on the menu bar will also change to provide additional options relevant to working with a test record.

A test record usually consists of multiple pages. Press the [Page Down] or [Page Up] key to view the next or previous page, respectively. Figure 4 below shows the results of the second test performed:

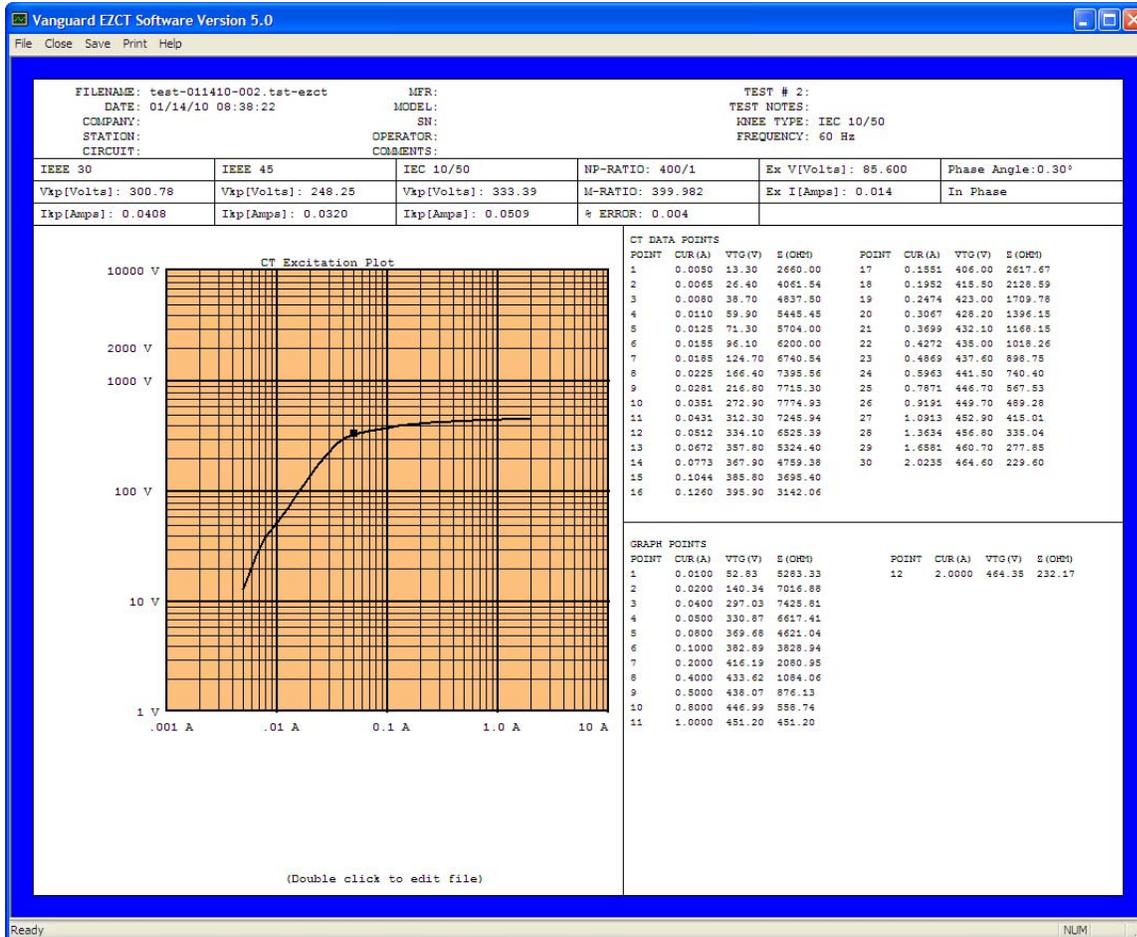


Figure 4. Test Record Page Displaying Results from the Second Test Performed

The last page of the test results contains a summary report. Figure 5 below shows a typical summary report.

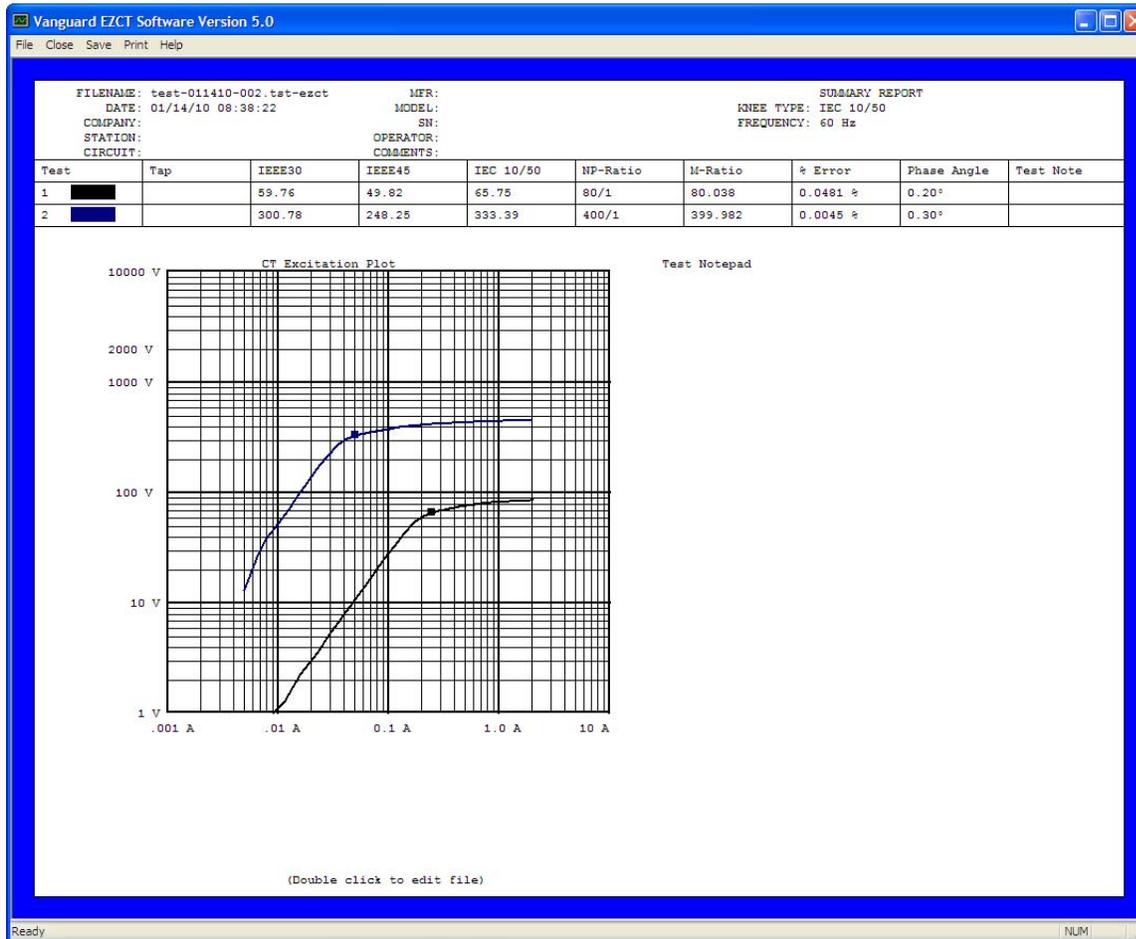


Figure 5. Typical EZCT/EZCT-10 Summary Report

The summary report lists the taps in the order configured in the Application Setup window (see section 3.3). If you wish to change the tap order:

1. Close the test record.
2. Change the tap order in the Application Setup window (see section 3.3).
3. Re-open the test record and view the last page. The tap information will now be listed in the order configured in the Application Setup window.

4.7.1. Editing a Test Record

To edit a test record:

1. Double click anywhere on the displayed test record. The following window will be displayed:

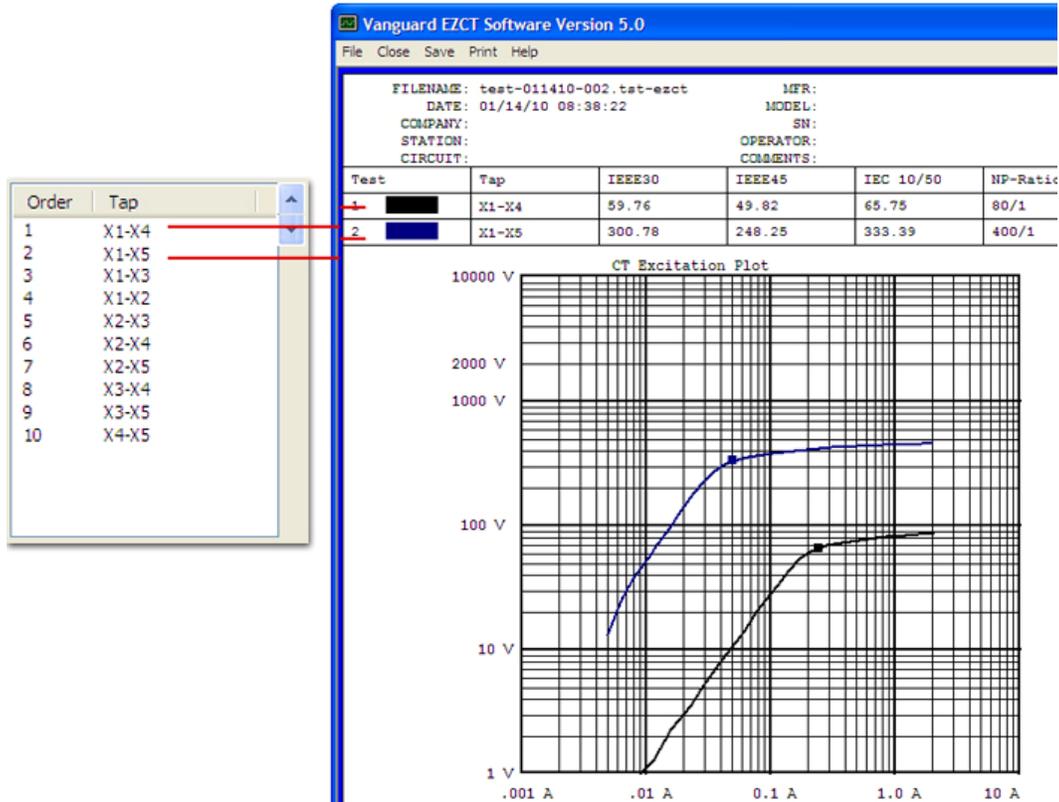
2. You can edit the test record header information (such as Company, Station, Circuit, Manufacturer, etc.) by entering data in the corresponding fields at the top of the screen.
3. You can also change the knee point marker and the frequency. The nameplate ratios for each tap connection can be edited as well. Test notes can be added or modified for each tap connection.

 **NOTES**

- If the knee point marker is changed, the CT Excitation Plot will be updated accordingly to display the selected knee point marker.
- If the nameplate ratio is changed for a tap connection, the percentage error will be automatically re-calculated.
- The frequency is for reference only. The CT test is conducted at the supplied line voltage and frequency.

4. You can access the Notepad by clicking on the “Notepad” button. Enter any relevant notes about the test in the Notepad and then click on the “OK” button.

- You can change the tap order for the summary report display (last page of the test record) by clicking on a tap and then clicking on the up or down arrow to the right of the dialog box. The selected tap will be moved up or down on the list respectively. The summary report will then display the information for each tap in this order as shown below:



- If you have a CT Tester connected to the PC, you can quickly repeat any of the tests listed. Click on the "Repeat Test" check box next to the test that you would like to run. The test options will become active as shown below:



NOTE This option is available only if the CT Tester is connected to the PC. If a CT Tester is not connected to the PC, the "Repeat Test" option will be grayed out.

- You can change the nameplate ratio values by changing the high and low values.
- You can select which tests to run by checking or un-checking the corresponding check box for each test (Ratio Test, Excitation Test).
- You can select the excitation voltage from the "Excitation Voltage" drop-down list.
- Any relevant test notes can be entered in the "Test Note" field.

Once you have configured the parameters for the test, click on the “Repeat Tests” button at the bottom of the window. The selected tests will be performed and the test record will be updated with the new test results.

7. Click on the “OK” button after you have made any necessary changes. Also, make sure to save the test record in order to retain any changes (see section 4.3).

4.7.2. Printing the Tabulated Test Results

To print the tabulated test results:

1. Click on the **Print** menu (Alternatively you can click on the **File** menu and then select *Print...*). The print dialog box will appear.
2. Select the printer to print to and make any necessary changes to the printer's parameters and then click on the "OK" button. The test results will be printed. Sample test record printouts are shown in Figure 6.

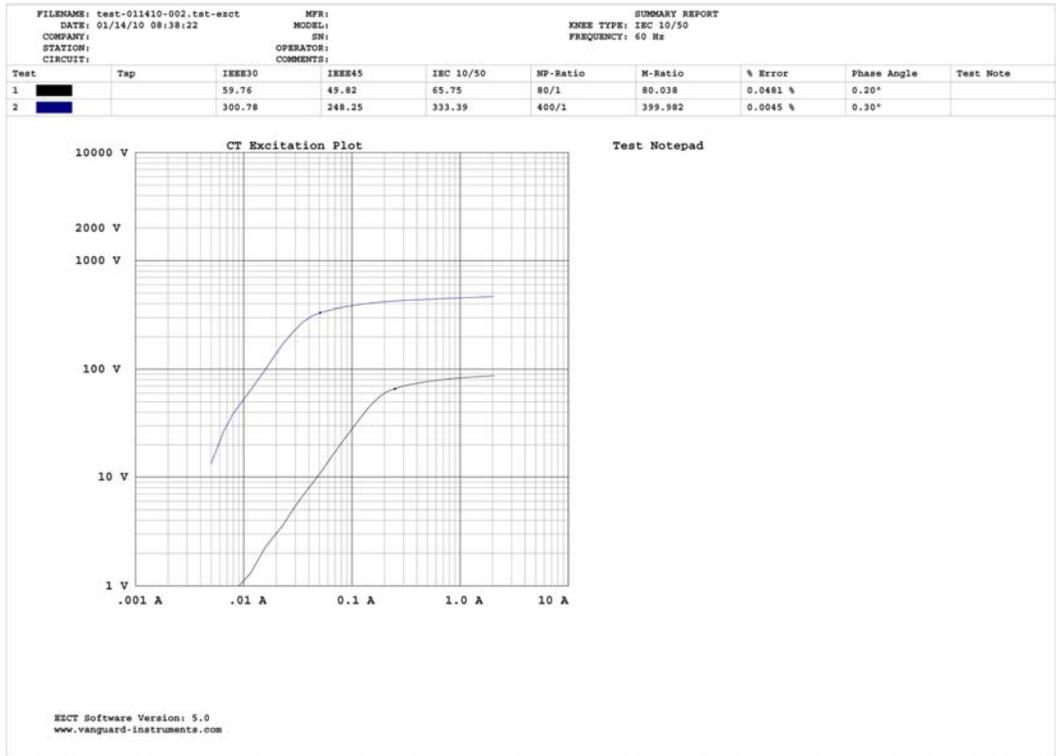
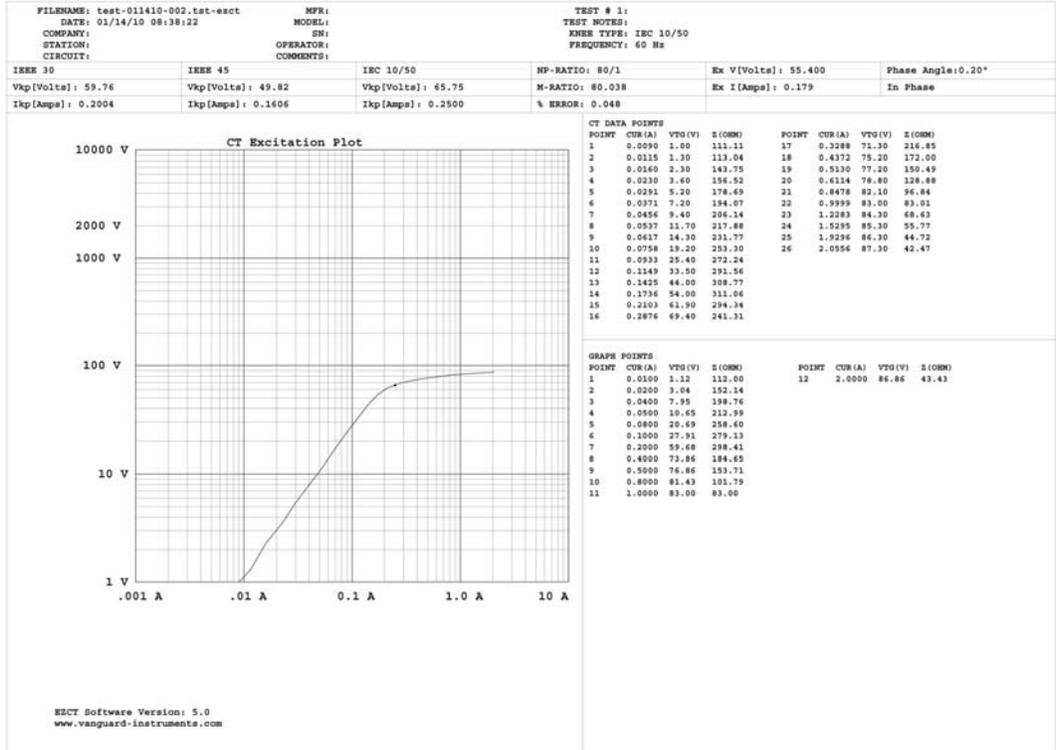


Figure 6. Typical Test Record Printouts

5.0 WORKING WITH TEST PLANS

The EZCT software can be used to create current-transformer test plans. The test plans can then be used to quickly run tests from the PC.

5.1 Creating Test Plans

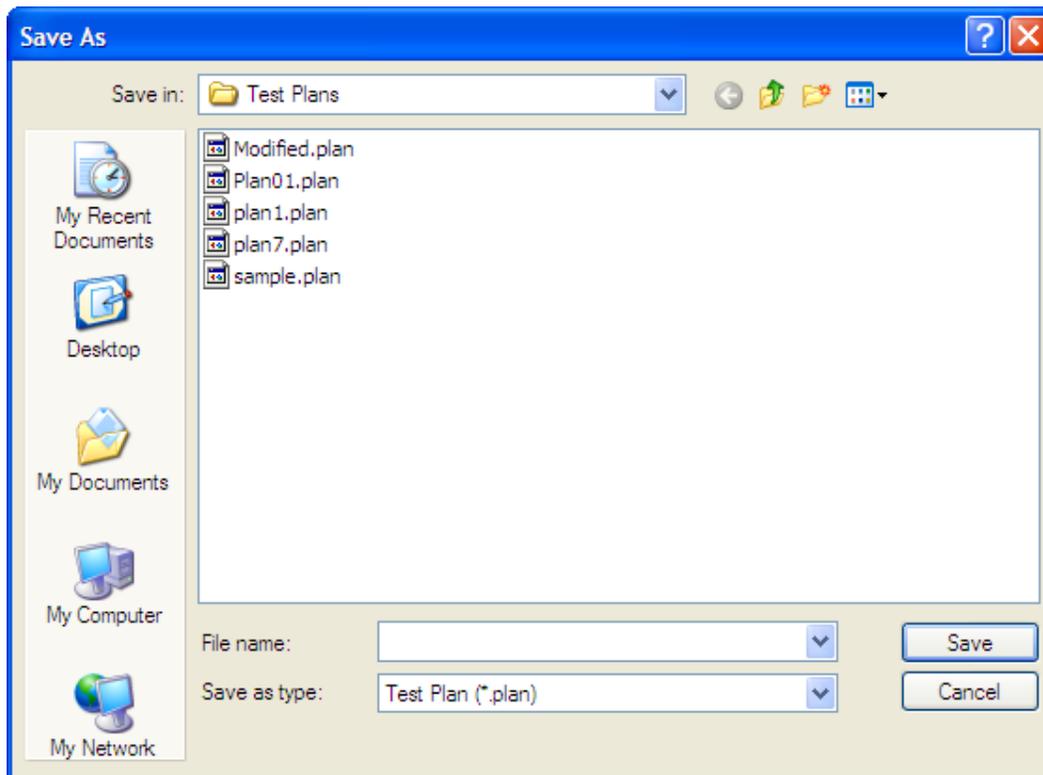
To create a test plan:

1. Click on the **Test-Plan** menu and select *Create Test Plan* (alternatively, you can click on the **File** menu, click on *Test Plan*, and then select *Create Test Plan*). The following window will be displayed:

	Nameplate Ratio	Ratio Test	Excitation Test	Excitation Voltage	Test Note
X1-X5:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>
X1-X4:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>
X1-X3:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>
X1-X2:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>
X2-X5:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>
X2-X4:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>
X2-X3:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>
X3-X5:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>
X3-X4:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>
X4-X5:	<input type="text"/> / 5	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="text"/>

2. Enter the relevant header information at the top of the form (such as Company name, Station name, etc.).
3. Select the knee point marker from the “Knee Point Marker:” drop-down list.

4. For each tap connection you would like to test, click on the check box under each test type that you would like to perform. For example, to perform a ratio test on the X1-X5 tap connection, check the check box under the “Ratio Test” column in the X1-X5 row.
 - a. Once a test has been selected for a tap connection, the “Nameplate Ratio” input fields will be activated. Enter the nameplate ratio values for the tap connection.
 - b. Select the excitation voltage from the “Excitation Voltage” drop-down list corresponding to the tap connection.
 - c. Enter any relevant test notes in the corresponding “Test Note” field.
5. Click on the “Save” button. The following window will be displayed:

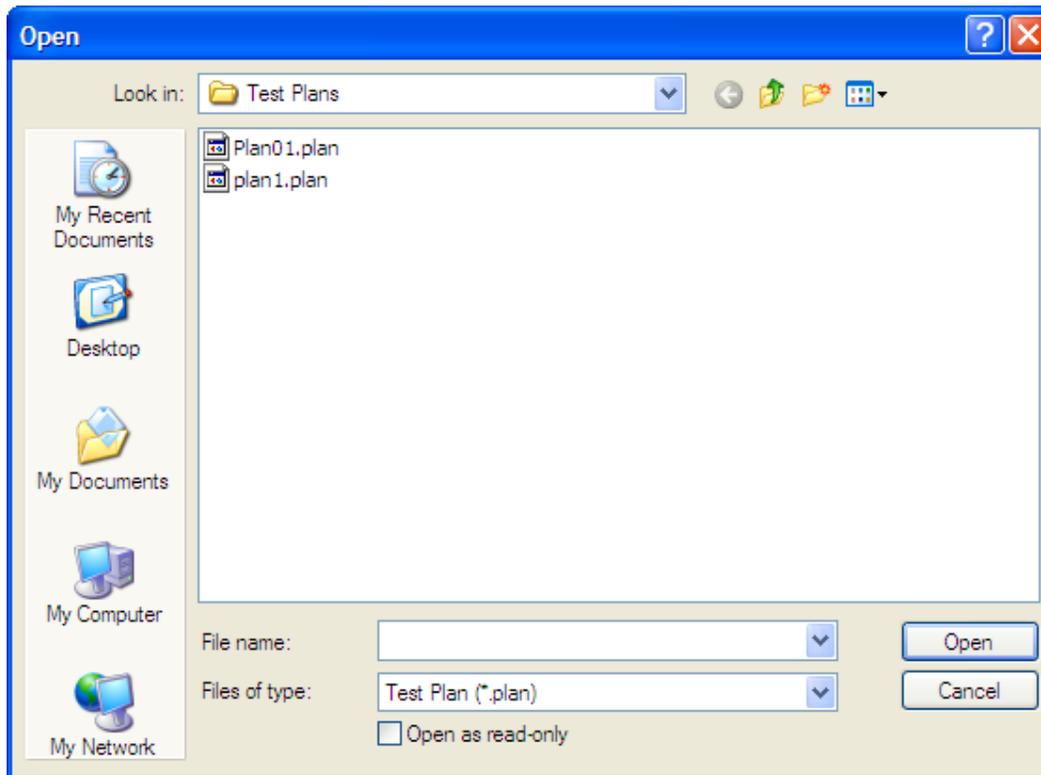


Browse to the location where you would like to save the test plan. Enter a file name in the “File name:” input field and click on the “Save” button. The test plan will be saved in the selected location.

5.2 Modifying a Test Plan Stored on the PC

Test plans stored on the PC hard drive can be recalled and modified using the steps below:

1. From the **Test-Plan** menu, click on *Modify Test Plan* (alternatively, you can click on the **File** menu, click on *Test Plan*, and then select *Modify Test Plan*). The following window will be displayed:



Browse to the folder containing the test plan that you would like to modify. Click on the file name and then click on the “Open” button.

2. The test plan will be loaded and the test parameters will be displayed as shown below:

The screenshot shows a 'Test Plan' window with the following fields and data:

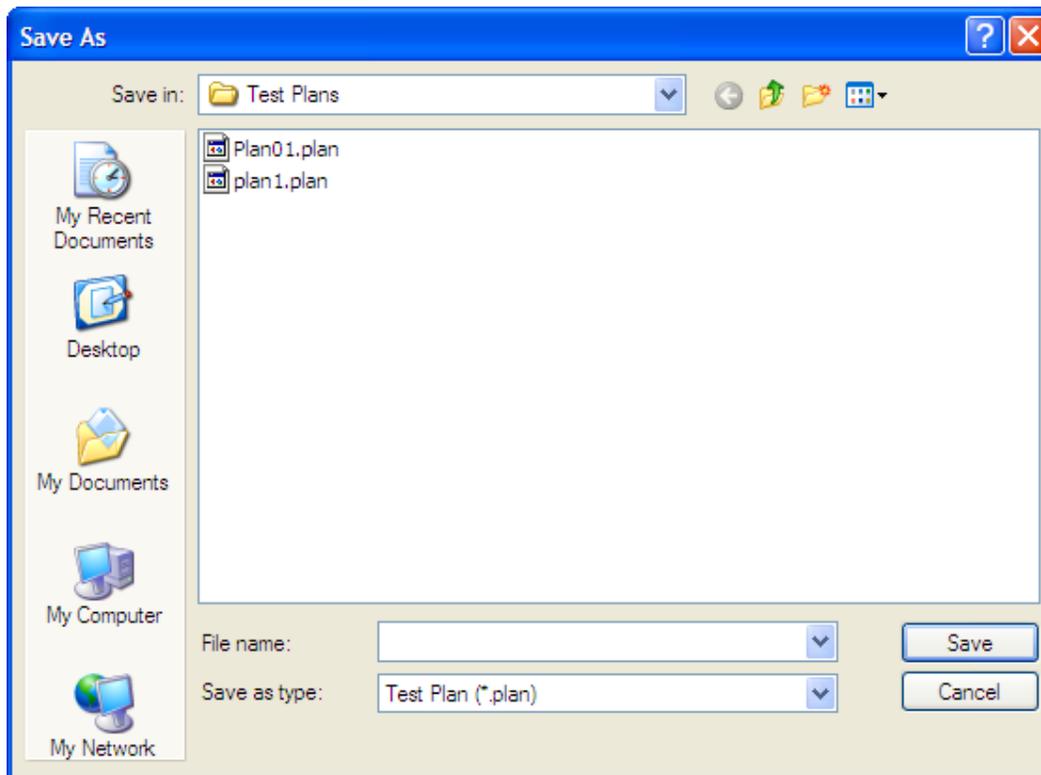
- Company: Vanguard Instruments
- Station: Lab
- Mfr: Siemens
- Knee Point Marker: IEEE 30 deg
- Ratio Test:
- Excitation Test:

	Nameplate Ratio	Ratio Test	Excitation Test	Excitation Voltage	Test Note
X1-X5:	0 / 5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1200	
X1-X4:	/ 5	<input type="checkbox"/>	<input type="checkbox"/>	200	
X1-X3:	/ 5	<input type="checkbox"/>	<input type="checkbox"/>	200	
X1-X2:	/ 5	<input type="checkbox"/>	<input type="checkbox"/>	200	
X2-X5:	/ 5	<input type="checkbox"/>	<input type="checkbox"/>	200	
X2-X4:	/ 5	<input type="checkbox"/>	<input type="checkbox"/>	200	
X2-X3:	/ 5	<input type="checkbox"/>	<input type="checkbox"/>	200	
X3-X5:	/ 5	<input type="checkbox"/>	<input type="checkbox"/>	200	
X3-X4:	/ 5	<input type="checkbox"/>	<input type="checkbox"/>	200	
X4-X5:	/ 5	<input type="checkbox"/>	<input type="checkbox"/>	200	

Buttons: Cancel, Save

Modify any of the test plan parameters as needed and then click on the “Save” button.

- The following window will be displayed:

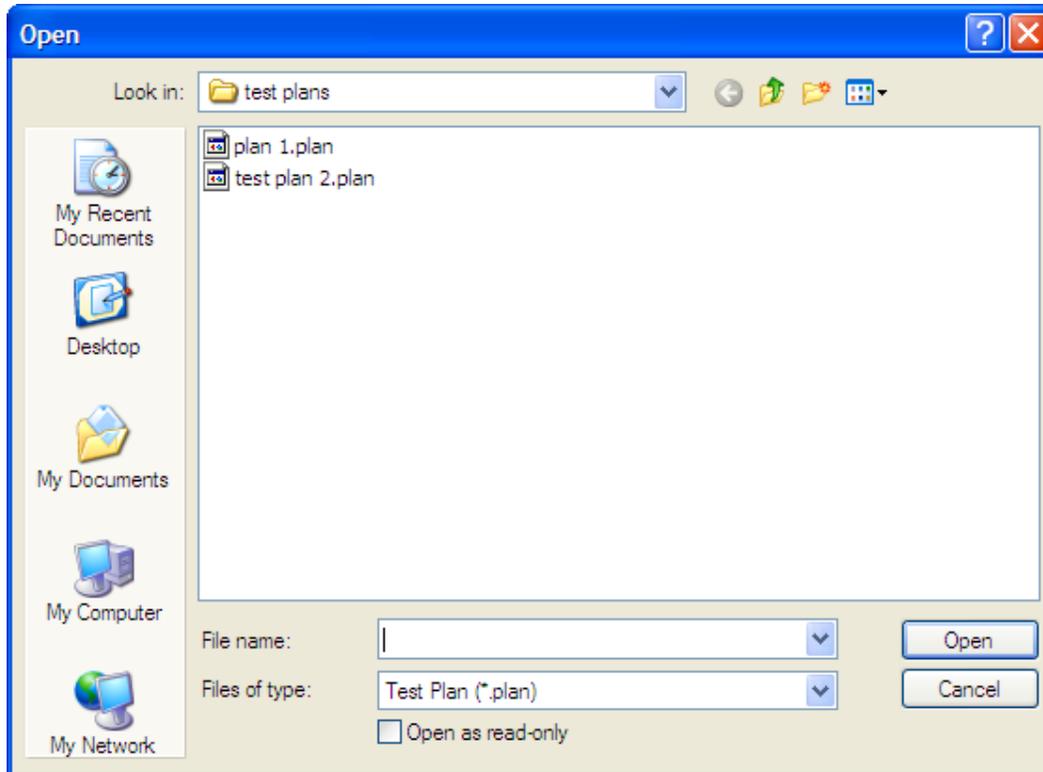


Browse to the folder where you would like to save the modified test plan. Enter a file name in the “File name:” field and click on the “Save” button. The modified test plan will be saved with the new file name. Selecting the same file name will override the test plan name.

6.0 RUNNING TESTS

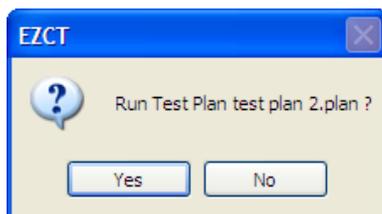
The EZCT software can be used with a test plan to run a current-transformer test directly from the PC. To run a test using the EZCT software:

1. Connect the CT Tester to the PC via either the RS-232C port or the USB port.
2. Make the test connections per the CT Tester's User's Manual.
3. Click on the **Run-Test** menu (alternatively, you can click on the **File** menu and select *Run Test*). The following window will be displayed:



Browse to the folder containing the test plan that you would like to use. Click on the test plan file name and then click on the "Open" button.

4. The following confirmation window will be displayed:



Click on the "Yes" button.

5. The following screen will be displayed showing the test parameters:

The screenshot shows a software window titled "Run Test". It contains three main sections: "Test in Progress", "Message", and "Data".

- Test in Progress:** A yellow highlighted box containing the text:
Test #: 1 X1-X2
Type: Ratio & Excitation
- Message:** A yellow highlighted box containing the text:
Set test voltage range to 1200V
Click "Start Test" to begin
- Data:** A section with four input fields:
 - Voltage:** An orange rectangular input field.
 - Ratio:** An orange rectangular input field.
 - Current:** An orange rectangular input field.
 - Polarity:** An orange rectangular input field.

At the bottom of the window, there are four buttons: "Start Test", "Ok", "Abort Test", and "Exit".

Set the voltage range using the CT Tester's "Voltage Control" knob to the voltage range displayed in the message area, and then click on the "Start Test" button to start the test.

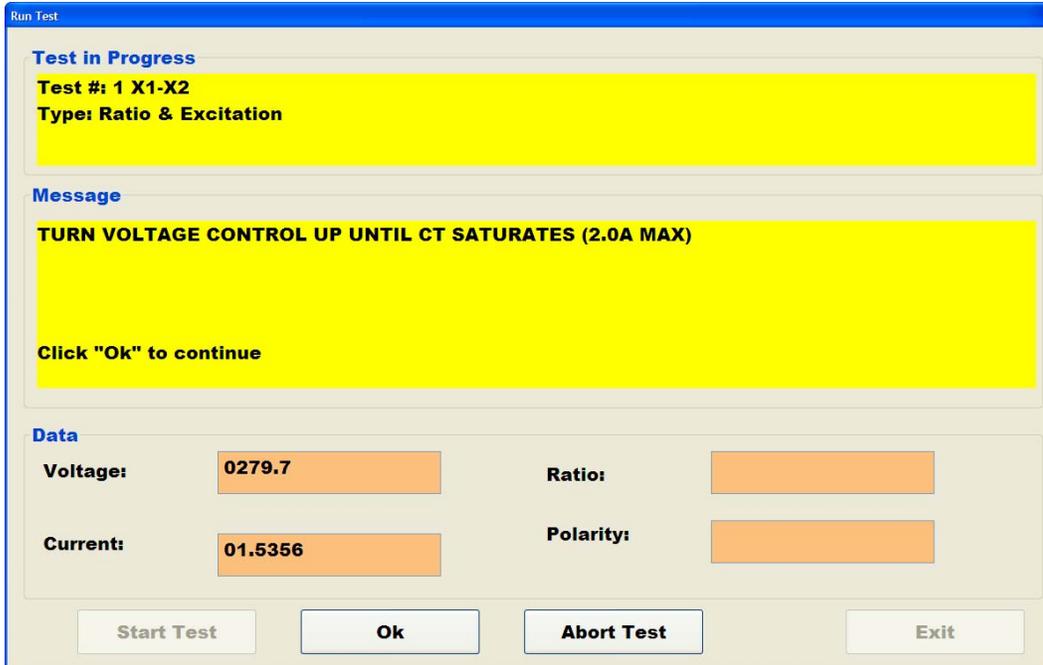
6. The following screen will be displayed:

The screenshot shows the same "Run Test" software window as in the previous image, but with a different message.

- Test in Progress:** A yellow highlighted box containing the text:
Test #: 1 X1-X2
Type: Ratio & Excitation
- Message:** A yellow highlighted box containing the text:
TURN VOLTAGE CONTROL UP UNTIL CT SATURATES (2.0A MAX)
- Data:** A section with four input fields:
 - Voltage:** An orange rectangular input field.
 - Ratio:** An orange rectangular input field.
 - Current:** An orange rectangular input field.
 - Polarity:** An orange rectangular input field.

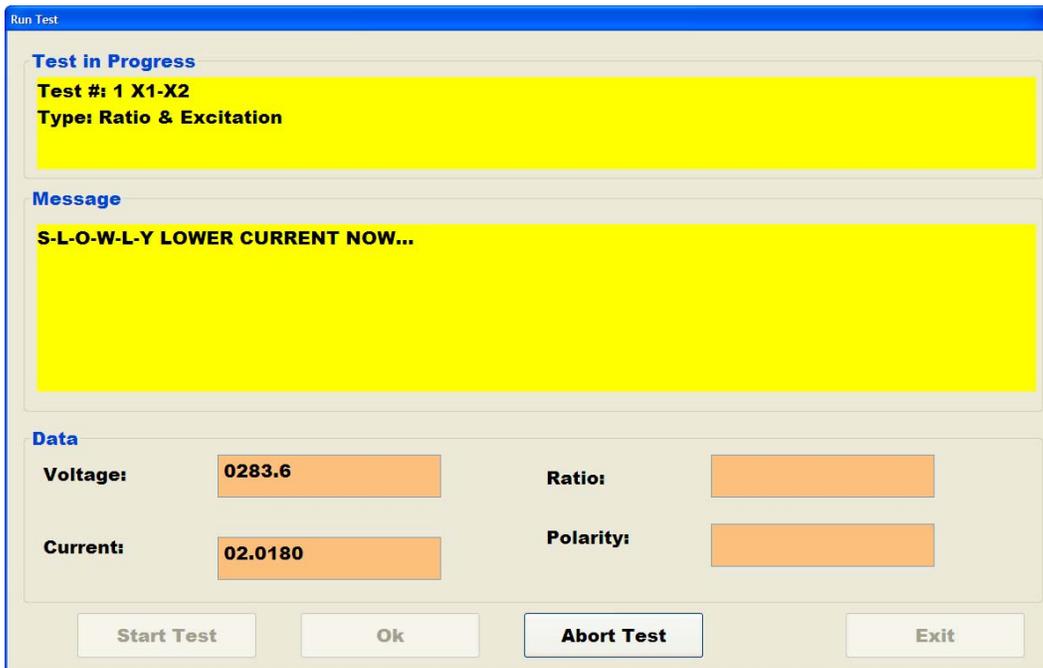
At the bottom of the window, there are four buttons: "Start Test", "Ok", "Abort Test", and "Exit".

Turn the CT Tester's voltage control knob clock-wise until the CT saturates. As you turn the knob, the voltage will be displayed under the "Data" section as shown below:



Click on the "OK" button.

- The following screen will be displayed:



Lower the current by slowly turning the CT Tester's voltage control knob counter-clockwise until it can no longer be turned.

8. The following screen will be displayed:

Run Test

Test in Progress

Test #: 1 X1-X2
Type: Ratio & Excitation

Message

RATIO TEST, 100V MAX (LESS IF RATIO LESS THAN 10:1)..

Click "Ok" to continue

Data

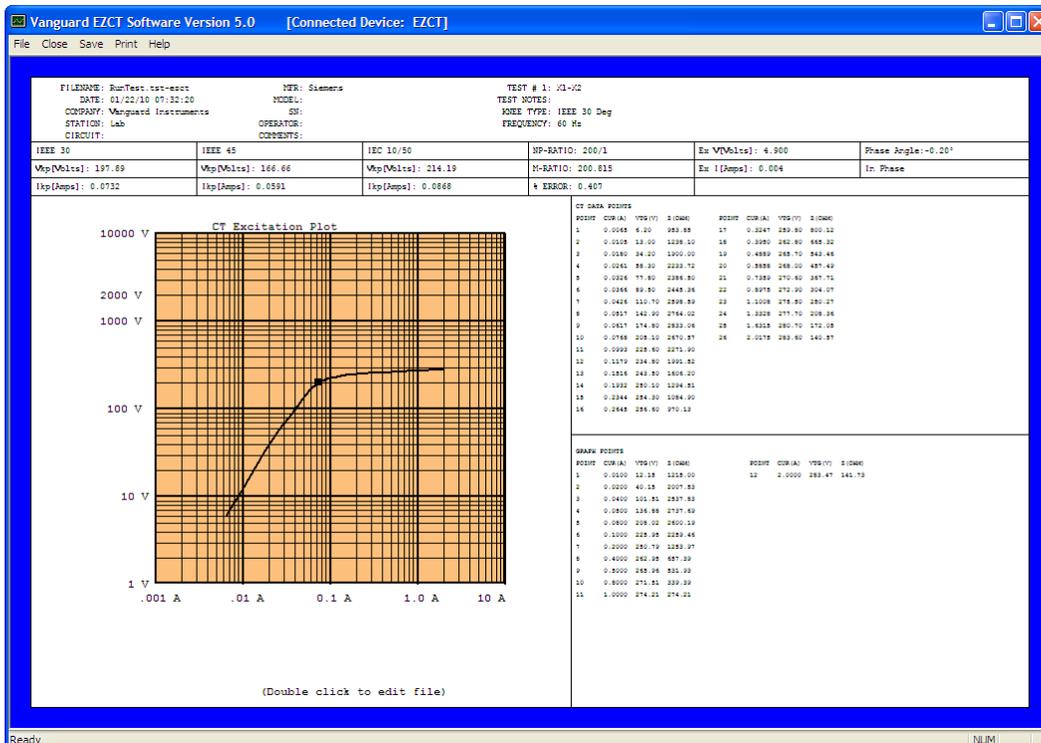
Voltage: 0004.9 **Ratio:** 200.81

Current: 00.0040 **Polarity:** In Phase

Start Test Ok Abort Test Exit

Click on the "OK" button.

9. The test results will be displayed as shown below:



You can save the test record to the computer hard drive using the instructions in section 4.3.



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