



**ABB Automation Inc.**  
Substation Automation and Protection Division  
Coral Springs, FL  
Allentown, PA

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# **OSCILLOGRAPHIC AND RECORDING PROGRAM (OSCAR)**

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### **Section 1 - Introduction**

The **OSCillographic And Recording (OSCAR)** program can best be described as an easy way to analyze data from **ABB** relays that are capable of gathering oscillographic information. **OSCAR** empowers the relay engineer by displaying fault information graphically, a form more conducive to analysis than tabular form. **OSCAR** also gives the user many ways to incorporate the graphics information in hardcopy reports, overheads and other presentation quality outputs. It accomplishes this by using industry standard file formats such as PCX, HPGL and PostScript® for incorporation into Microsoft Word for Windows®, PageMaker®, WordPerfect® and other leading word-processing, desktop publishing and drawing programs that accept these file formats.

#### ***Minimum System Requirements***

To run, the **OSCAR** program requires:

- an IBM® PC/XT/AT®, true compatible, or IBM PS/2® with a minimum of 640 K bytes of RAM (500K free)
- version 2.1 or higher MS/PC DOS
- a Video Graphics Adapter (VGA)
- one 720 Kbyte or greater floppy drive (hard disk recommended)

The following items are optional but recommended:

- Math Coprocessor highly recommended to speed-up the curve fitting algorithms
- Microsoft Compatible Mouse

#### ***Package Contents***

The main package contents are:

- Documentation including License Agreement
- One 720 Kbyte 3 1/2" diskette containing compressed files
- Warranty and User Registration Card

#### ***Manual Organization***

This manual uses boldface characters to indicate:

- menu selection
- keystroke to be entered in OSCAR
- section headings

Commands that are to be entered from the DOS prompt are italicized.

## Section 2 - Getting Started

### *Making Backups*

It is recommended that backup copies of the diskettes be made as soon as possible to insure against loss in case of damage to the original. Follow the step-by-step procedure given here under the heading that describes your system. A working knowledge of DOS is assumed but if some of the commands are unfamiliar then a review of your DOS manual may be necessary. These instructions assume that the operating system diskette is in drive A and that DOS system prompt A> is on the screen.

1. Type the following:

*diskcopy*

2. When prompted for the source diskette, insert the original OSCAR diskette.
3. When prompted for a target diskette, remove the Source diskette (the original) from A and insert a new blank diskette in drive A. This will become the Target.
4. When finished, put the original program diskette in a safe place.

**NOTE FOR WINDOW USERS: The les OSCAR.ICO and OSCAR.PIF are included for use with Windows 3.0**

### *Quick Start*

The quick start process is as follows:

**NOTE: In order to use a mouse with OSCAR, a Microsoft® compatible mouse driver must be installed.**

- A. To start the program type:

*OSCAR < ENTER >*

- B. The process for graphing data is:

1. Select **OSC DATA FILE** from the main menu. Use **Tab** key to select file to be loaded.
2. Select **GRAPH OSC DATA** from the main menu.

If there were no errors, the program will graph the data from the file selected.

- C. To save a graph image:

1. Graph the data as described in Section B.
2. Press **F2**.
3. Enter the file name of the image to be saved.
4. The program will display the image, save it to disk and return to the file format menu. It is now possible to display the image using the **RETRIEVE IMAGE FILE** menu option or integrate it into any word processor that accepts the image file format selected.

- D. To retrieve an image previously saved to disk:

1. Select **RETRIEVE IMAGE FILE** menu option from the main menu.
2. Select the file from the list of PCX files displayed in the FILES section of the DIRECTORY LISTING screen.
3. The program will display the file selected. Press a key or the left mouse button to return to the main menu.

E. To plot a PCX file:

1. Load the PCX file into Windows® 3.1X or Win95's Paintbrush®.
2. Select **printer setup**; select **landscape**.
3. Select **print** from the file menu. In the scaling window, increase the setting to about 140%. The graphic should now be about the size of a 8-1/2 by 11 page.
4. From the print menu; select OK. The graphic will be sent to the selected printer.

F. The HELP files can only be viewed from the dos prompt.

G. Press the letter **X** from the main menu or click on **EXIT PROGRAM** to exit the program.

## Section 3 - Running Oscar

### Command Line Parameters

OSCAR is run from the command line of DOS by typing `OSCAR < ENTER >`.

### Main Menu

The main menu shown in Figure 1 displays all the major functions available in the program.

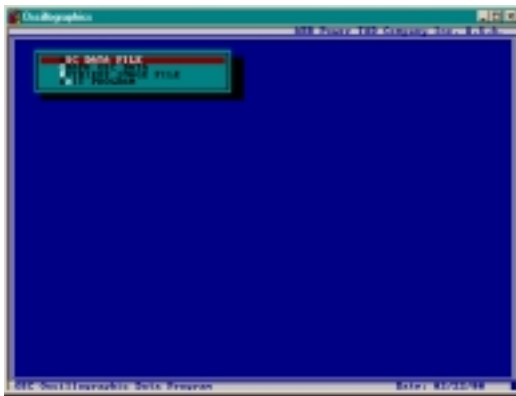


Figure 1. Main Menu

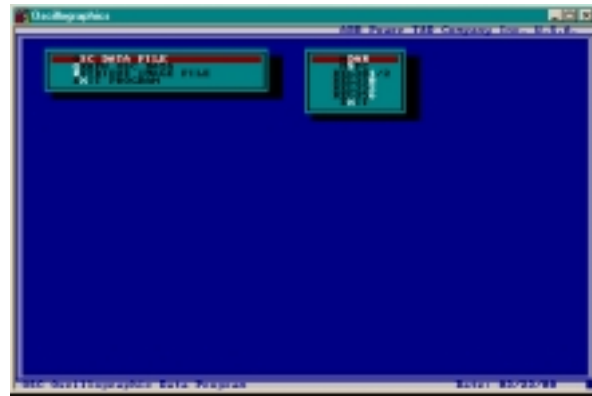


Figure 2. OSC Data File Secondary Menu

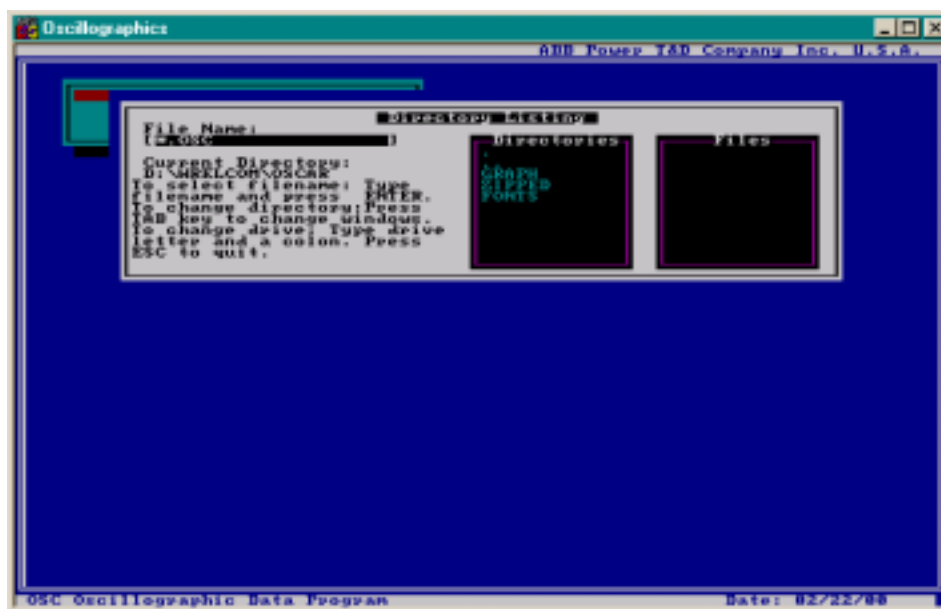
The selections of the menu are executed in three ways:

1. By using the up/down arrow keys to move the highlight bar to the desired choice and pressing the return or enter key.
2. By pressing a highlighted key; i.e. Press **O** to select the **OSC DATA FILE** menu item.
3. By positioning the mouse cursor on a menu selection and pressing the left mouse button.

### The Directory Listing Screen

The Directory Listing Screen appears whenever a file needs to be selected (see Figure 3). For example, it appears when the user requests an oscillographic data or retrieves an image file. The valid keystrokes that perform different actions depend on which part of the screen is active; a screen section is active when the cursor is in that section's window. There are three windows on this screen, the file name window, the directory window, and the files window. The file name window contains a place to type a desired file name and is also the place where file names are displayed when selecting files from the files window. The directory window displays the directories that are in the current directory. The files window contains all the files that match the file specification requested when the module was called. For example,

choose **OSC DATA FILE** will bring up a second menu (see Figure 2). Choosing MDAR will bring up all the data files with the ".OSC" file extension. Valide keystrokes in this part of the program are the **TAB** key, the **ENTER** key, the up/down arrow keys, and the **ESCAPE** key. If at any time the **ESCAPE** key is pressed, the module will exit back to the menu screen. If the **TAB** key is pressed in any window the cursor will move to the next window. The **ENTER** key selects the file highlighted or changes the director highlighted by the cursor. When the cursor is in the file name window it is possible to select a file name or change directories by typing the file name or directory desired and pressing the **ENTER** key.



**Figure 3. Directory Listing Screen**

The text at the bottom will indicate the actions that can be taken.

The User may:

- Press the **ESCAPE** key to return to the main program.
- Use the **ENTER** key or click on a menu choice with the mouse to select the currently highlighted menu item.
- Press the up/down arrows or drag the highlight bar using the mouse to move to another menu item.

## Section 4 - Graphics Menu Selection

### Main Menu

|    |                |   |
|----|----------------|---|
| F1 | Ana Menu       | Displays all analog traces for selection.   |
| F2 | Save to PCX    | When selected, will prompt you for a file name to save the image to and will then save it to that file. |
| F3 | Left Cursor    | When highlighted, allows you to move left cursor with left or right arrows.                             |
| F4 | Right Cursor   | When highlighted, allows you to move right cursor with left or right arrows.                            |
| F5 | Zoom In        | Zoom in between left and right cursors.   |
| F6 | Zoom Out       | Zoom out to show original screen.   |
| F7 | Screen Default | Will show original screen.  |
| F8 | Dig Menu       | Displays all digital traces for selection.  |
| F9 | Main Menu      | Moves back to main menu.  |

**NOTE:** At the bottom right of the screen, above the function keys, there are two lines that display:

a) Left cursor @, b) Right cursor @, and DIFF. The left cursor @ and the right cursor @ displays the time of the cursor with respect to the date and time reference point. The DIFF setting is the difference between the two cursors.

Also displayed at the bottom of the screen is: relay type, date and time of fault and name of file being viewed.

### Ctrl Menu Selections

The following function key definitions apply when holding down the CTRL key and pressing the function key.

| F1 Menu Selections |                 |  |
|--------------------|-----------------|--|
| F1                 | Scroll ANA Up   | Scrolls analog trace up.<br>Scrolls analog traces up. You will scroll through all analog traces available.     |
| F2                 | Scroll ANA Down | Scrolls analog trace down.<br>Scrolls analog traces down. You will scroll through all analog traces available. |
| F3                 | Select Move Up  | Allows you to mark any of the displayed analog traces moving down through selection.                           |
| F4                 | Not Used        |  |
| F5                 | Not Used        |  |
| F6                 | Not Used        |  |
| F7                 | Insert Trace    | Replace analog trace.  |
| F8                 | Remove Trace    | Delete analog trace.   |
| F9                 | Return          | Return to previous screen.   |

The following function key definitions apply when holding down the ALT key and pressing the function key.

| F8 Menu Selections |                   |   |
|--------------------|-------------------|---|
| F1                 | Scroll DIGI Up    | Scrolls digital trace up.<br>Scrolls digital traces up. You will scroll through all digital traces available.     |
| F2                 | Scroll DIGI Down  | Scrolls digital trace down.<br>Scrolls digital traces down. You will scroll through all digital traces available. |
| F3                 | Select DIGI Trace | Select digital trace.<br>Allows you to mark any of the displayed digital traces.                                  |
| F4                 | Not Used          |   |
| F5                 | Not Used          |   |
| F6                 | Not Used          |   |
| F7                 | REPLC DIG Trace   | Replace digital trace.  |
| F8                 | Delete DIG Trace  | Delete digital trace.   |
| F9                 | Return            | Return to previous screen.  |

### ***The Graph Screen***

The Graph Screen appears when the menu selection GRAPH OSC DATA is picked. GRAPH OSC DATA uses the oscillographic data file and the screen layout file the graph the data using the selected curve-fitting level. To that end, this screen performs the following tasks:

- (F9) Returns to the main menu.
- (F6) Returns to the previous graph screen.
- (F5) Expand the viewing area between the right and left cursors to the width of the graphing area.
- (F4) Activate the right cursor for moving.
- (F3) Activate the left cursor for moving. By default the left cursor is active and appears at the extreme left side of the screen.
- (F2) Saves the current graphics view to a PCX file.
- Move the cursors-these are the long vertical white lines located by default at the right and left edges of the graph screen. Pressing the left or right arrow key will move the activated cursor one pixel. This screen also displays the current active oscillographic file name, the title of the graph, (i.e., "MDAR OSC DATA OUTPUT"), and the date and time that the dvdi occurred. In addition, the time from the fault where the left cursor is located is displayed (left cursor @), the time from the fault where the right cursor is located is displayed (Right cursor @), and the time between the two cursors is also displayed (DIFF). The numbers displayed next to the trace name is the instantaneous value at the point of the currently active cursor.

**Mouse Users:** All of the above actions can be accomplished using the mouse. For example, positioning the mouse on the **F9** menu choice and pressing the left mouse button returns to the menu section. Also moving the cursors is done by moving the mouse cursor over either cursor, clicking on it with the left button, and while holding the left button down, moving the mouse cursor to the desired location and releasing the button. The cursor will be drawn there.

### ***Saving the Graph Screen***

This section explains how to save the current graph screen. After displaying the graph as desired, press **F2** then supply a file name. You will be returned to the original graph screen.

For a PCX file, the process takes about as long as graphing on the graph screen and will consume about 27 Kbytes of disk space.

If there are no errors, the program will return to the image select menu and the file will have been created.

### ***File Formats***

The section contains information on the file formats supported by OSCAR. This program supports PCX file format only. The PCX format is an enhanced raster image dump of the screen and is used by many popular graphics programs.

### ***Retrieving an Image***

To retrieve and display a previously saved image file, choose the **RETRIEVE IMAGE FILE** selection from the main menu. The image will be displayed and will remain on the screen until a key is pressed. Only PCX files can be displayed this way.

### ***Hardcopy Output***

The section contains instructions for obtaining hardcopy output of the screen images (see Section 2, Getting Started).

**WARNING:** If filename2.pcx exists INVERT will overwrite it!

## **ABB Oscillographic and Recording Program**

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