Quick Start Guide

FTSolution for APT Hardware Debugger

Version 1.x.x

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Contents

Introduction

Thank you for purchasing FTSolution for APT® Hardware Debugger by FasTrak SoftWorks, Inc. FTSolution for APT Hardware Debugger provides a sophisticated PLC hardware debugger that utilizes ladder language–based tools. Designed for use by technicians who are responsible for maintaining the hardware systems running APT programs, FTSolution for APT Hardware Debugger protects against unwanted changes by limiting functionality to only those tasks that need to be performed.

FTSolution for APT Hardware Debugger may be used to:

- Download compiled FTSolution for APT programs into Siemens 505 and CTI 2500 Series processors
- Troubleshoot hardware problems
- Monitor data such as program data values, tags, descriptions, and comments

 Contact your FasTrak SoftWorks, Inc. Sales Representative at **262-238-8088** or **sales@fast-soft.com** for assistance in purchasing or upgrading these products. For assistance installing and using FTSolution for APT Hardware Debugger contact Technical Support at **262.238.8088, Option 3** or **techsupport@fast-soft.com**.

Installing FTSolution for APT Hardware Debugger

Previous versions of FTSolution for APT Hardware Debugger must be uninstalled before v1.x.x can be installed. Uninstalling previous versions of FTSolution for APT Hardware Debugger removes the application only. Any APT programs that you imported, edited, or wrote will not be deleted.

Note for Windows XP users: FTSolution for APT Hardware Debugger requires that Windows XP Service Pack 3 is installed first.

To uninstall the previous version of FTSolution for APT Hardware Debugger:

Windows 8

1. Go to the **Start** menu by pressing the Windows key.

2. Right-click **FTSolution for APT**.

3. Click **Uninstall**.

4. In the list of installed applications, click **FTSolution for APT Hardware Debugger**.

5. Click **Uninstall**.

6. Follow the prompts. A progress bar shows you how long it will take to safely remove FTSolution for APT Hardware Debugger. When it is finished, you will see the list again.

Windows XP, Windows Vista, and Windows 7

1. On the **Start** menu, click **Control Panel** and then under **Programs** do one of the following:

    a. Windows 7 and Vista users: Click **Uninstall a Program**.

    b. Windows XP users: Click **Add or Remove Programs**.

2. On the list of installed programs, click **FTSolution for APT Hardware Debugger,** then do one of the following:

    a. Windows 7 and Vista users: Click **Uninstall**.

    b. Windows XP users: Click the **Remove** or **Change/Remove** tab (to the right of the program).

3. Follow the prompts. A progress bar shows you how long it will take to safely remove FTSolution for APT Hardware Debugger. When it is finished, you will see the list again.

Download and Install FTSolution for APT Hardware Debugger:

1. Access the FasTrak website: **www.fast-soft.com**.

2. Login (or register) to the FasTrak website.

3. Select **Software Upgrades** from the **Downloads** menu.

4. Click the link to **FTSolution for APT Hardware Debugger** to download the self-extracting installer to your hard drive.

5. Run the FTSolution for APT Hardware Debugger installer after it downloads to your hard drive.

6. When the installer window appears, follow the prompts to complete the installation of FTSolution for APT Hardware Debugger. You can now use FTSolution for APT Hardware Debugger.

The Hardware Debugger .AHD file

Creating an .AHD file in FTSolution for APT

To use FTSolution for APT Hardware Debugger you must create a Hardware Debugger file (.ahd file) from within FTSolution for APT. To create an .ahd file for use within Hardware Debugger you must compile your project. During a compile select the option **Create Hardware Debugger file**.
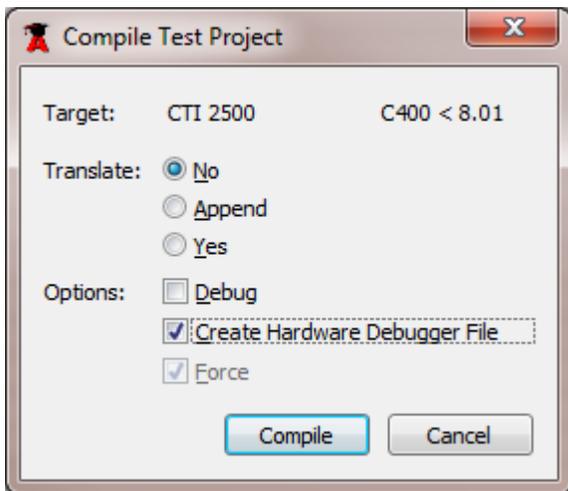
The .ahd file will automatically be placed within the Compile folder of the applicable Solution and Project. For example, the Test Project.ahd file picture below for **Test Project** is located within the folder **\Station_53 \Test Project\Compile**.
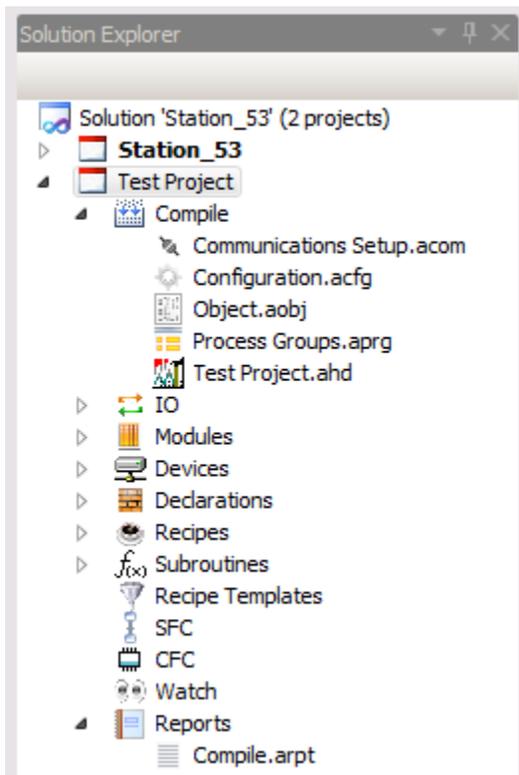
Opening an .AHD file in FTSolution for APT

To open the .ahd file within FTSolution for APT open the **Compile** item within the Solution Explorer and double click the **.ahd** file. The Hardware Debugger will launch. In the example below the .ahd file is **Test Project.ahd**.
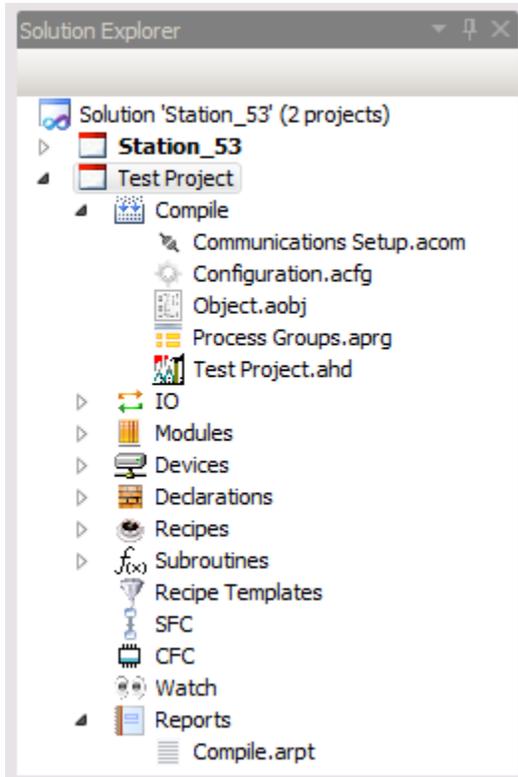
Opening an .AHD file in Hardware Debugger

You can also open the file within Hardware Debugger.

1) Select the **File/Open** menu click the [icon] toolbar icon, or press [Ctrl-O]. The Open Program dialog appears.

2) Click **Browse** and select the ***.AHD** file.

3) Select the **Offline** radio button or enter information into **Connect to PLC**. Click **Ok.**
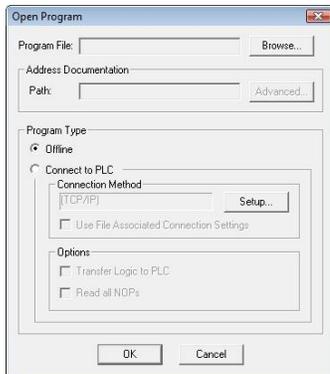
WARNING: DO NOT use *Hardware Debugger* **to modify an FTSolution for APT-created .AHD file. An FTSolution for APT-created .AHD file contains unique elements which must be downloaded to a PLC to correctly run an APT language program. Saving an .AHD file with** *Hardware Debugger* **omits these critical changes.**

Downloading a File to the PLC

Loading a program allows logic, data, and configuration from the ***.AHD** file to be downloaded to the PLC. Associated documentation will be read from the ***.AHD** file. To download an existing program into an online PLC:

1) Select the **File/Open** menu click the 📂 toolbar icon, or press [Ctrl-O]. The Open Program dialog appears.

2) Click **Browse** and select the ***.AHD** file.

3) Select the **Connect to PLC** radio button.

4) Select the **Transfer Logic** to PLC check box.

5) Click **OK**.
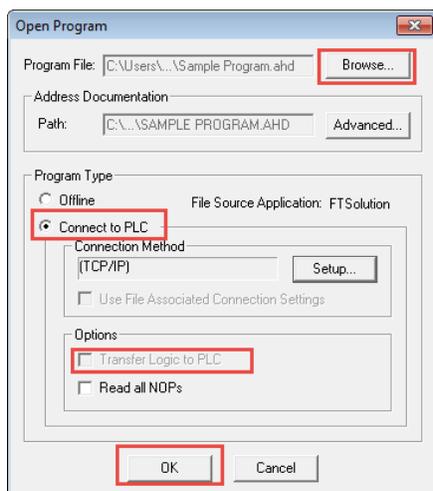
WARNING: Logic, data, and configuration from the ***.AHD** file will overwrite logic within the PLC memory.

Transferring an Offline Program to the PLC

Logic, data, and configuration from a program that has been opened in offline mode can be transferred to the PLC. To transfer an existing open offline program to the PLC:

1) Select the **File/Transfer ->Online** menu item. The Open Program dialog appears with the file path and name of the offline program referenced within the Program File field, the Connect to PLC radio button selected, and the Transfer Logic to PLC check box selected.
2) Click **OK**.

WARNING: Any logic, data, and configuration within the PLC memory will be overwritten. Documentation will also now be associated with the file being transferred.

Tools for Debugging & Troubleshooting

Viewing Address Documentation

Address documentation is listed in a spreadsheet-style display.

1) To display the documentation list, select the **View/Documentation Window** menu item or click the toolbar icon. The Documentation Window appears.
2) The information on the list is not directly editable. To edit the documentation of an address, display the Edit Documentation dialog by double-clicking a line.

Finding Logic

Locate program elements such as a particular register or bit address, PLC instruction type, or network or special function line number with the Find dialog. To display the Find dialog:

1) Select the **Edit/Find** menu item, click the toolbar icon, or press [Ctrl-F]. The Find dialog appears.
2) Specify the item to be searched for and click **Find**. The found item is encircled by the Parameter Cursor.

TIP: To find the next instance of the item being sought, select the **Edit / Find Next** menu item or click the toolbar icon.

Finding Documentation

Locate program documentation with the Documentation Find dialog. To display the Documentation Find dialog:

1) Open the Documentation Window by selecting the **View/Documentation Window** menu item or clicking the toolbar icon.
2) Select the **Edit/Find** menu item, click the toolbar icon, or press [Ctrl-F]. The Documentation Find dialog appears.
3) Enter the text to be searched for in the Find what field.
4) Select a Search type of Address, Tag, Description, or Keyword.
5) Select the Exact Match check box if the text in the Find what field is the entire text to be found. Select the Match Case check box to perform a case sensitive search on the Find what text if the search type is Keyword.

Finding Address References Using the Cross Reference Window

Locate all uses of an address in a program with the Cross Reference Window. To display the Cross Reference Window:

1) Select the **View/Cross Reference** menu item or click the toolbar icon. The Cross Reference Window appears.
2) Select the Display inline Address Documentation check box to view documentation next to each address within the Cross Reference list.
3) Base the cross reference on addresses or networks by selecting By Address or By Network, entering a starting address or network, and clicking the **Refresh** button.
4) Double-click an address in the Cross Reference list to display the Edit Documentation dialog for that address.
5) Select a location in the Cross Reference list and click the **Goto** button or double-click the location to jump to the first occurrence of the address in the ladder or special function.
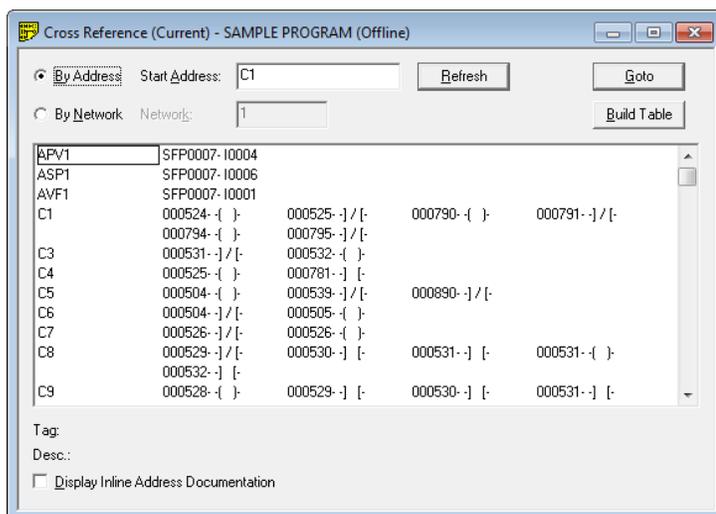
TIP: The title line displays the status of the cross reference. Click the **Build Table** button to make the cross reference current.

Displaying Ladder Status

Values of the addresses in the PLC can be displayed by using the online status feature. Turn ladder status on and off by selecting the **Diagnostics/Status** menu item.

Displaying Register Values

Register values are displayed in the ladder editor as part of some instructions. For a more comprehensive view of register values, use the Data Window. To display a Data Window:

1) Select the **View/Data Window** menu item or click the toolbar icon.
2) Enter the addresses to be viewed in the Address column.

TIP: Use the right-click menu to change the data format and size.

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