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INDUSTRIAL SOLUTIONS

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ADDapt 3 Release 2

Help Document

This document describes how to use the functionality in the software.

12/2/2015

Contents

Minimum Hardware Requirements

Supported Operating Systems

1. Windows 7 (x86 and x64). Validated editions are Professional and Ultimate editions.
2. Windows 8 or 8.1 (x86 and x64). Do not use ADDapt 3 on Windows 8 RT.
3. Windows Server 2008
4. Windows Server 2012
5. Windows 10 (x86 and x64)

Supported Architecture

6. 32-Bit (x86)
7. 64-Bit (x64)

Hardware Requirements

1. Computer that has a 2.2 GHz or faster processor
2. 200 MB of available hard disk space
3. Operating System Memory Requirement
    a. Windows 7, Window 8 (32-bit) : 2 GB
        i. For best performance, use 4 GB RAM
    b. Windows 7, Window 8 (64-bit) : 4 GB
        i. For best performance, use 8 GB RAM

Prerequisites

1. .Net Framework 4.5
2. Microsoft Report Viewer 2010

Directory Structure

In keep consistent with the Windows 7, 8, and 10 security models, ADDapt 3 is installed in its own directory located on the **C:** drive

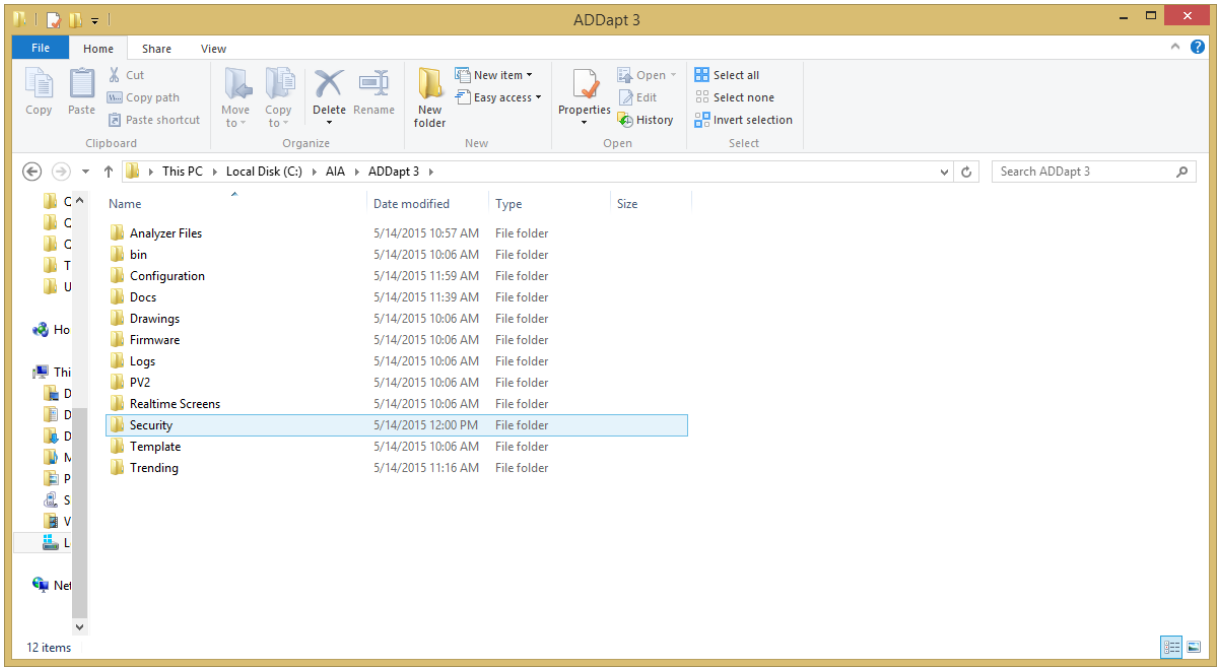


Figure 1 ADDapt 3 Main Screen

The directories are defined as follows

- **Analyzer Files**
  - This folder stores the analyzer files
  - File extension:
    - *.alz : Graphical Analyzer file
- **Bin**
  - Stores executable, dynamic link libraries and configuration file
  - File extension:
    - *.dll : Dynamic link library file

        - *.exe : Windows executable file
        - *.bat : Windows batch script used to setup and configure certain ADDapt 3 functions

- **Configuration**
    - Stores the configuration and cal/cfg files
    - File extension:
        - *.cfg : ADDapt 3 section configuration file
        - *.add : ADDapt 3 drive cal/cfg file
        - *.egd : Ethernet Global Data (EGD) message configuration used to define the message between PV 2.0 and the target drive.

- **Docs**
    - ADDapt 3 v2 manuals and help files

- **Drawings**
    - Block Viewer Drawings
    - File extension:
        - *.dwg : CAD drawing file. Default format for software block drawings
        - *.dxf : AutoCAD drawing exchange format file
        - *.pdf: Adobe portable document format file. An optional format to store software block drawings to easily share with non-ADDapt 3 v2 users

- **Firmware**
    - Firmware for each drive that is loaded by the AddZap utility
    - File extension:
        - *.dld : ADD32+ firmware file

- **Logs**
    - Stores the debugging logs created by ADDapt 3
    - File extension:
        - *.log : ADDapt 3 log file. Look here for any ADDapt 3 errors and warnings

- **PV2**

- Stores a tab delimited file to export for use into PV2 to define the EGD message from each DC drive
- File Extension:
  - *.txt : Tabbed delimited file

- **Real-Time Screens**
  - Stores the real-time screens, legacy real-time files, current real-time and real-time historical files
  - File extension:
    - *.xml : Extensible markup language file used to store a real-time screen configuration
    - *.art : ADDapt2000 Real-Time configuration file
    - *.csv : Comma separated value file used to store real-time historical data

- **Template**
  - Template files of all DC drives at time of ADDapt 3 v2 release
  - File extension:
    - *.tem : DC drive template file to define the drive's default values

- **Trending**
  - Contains files saved from the historical trending graph
  - File extension:
    - *.csv : Comma separated value file used to store the numerical values of a trended parameter
    - *.rtt : ADDapt 3 real-time trending file that stores the trended value in binary format
    - *.swp : ADDapt 3 real-time trending sweep file that contains all the rtt files in the defined trended session. This allows for a quick recall of a trended configuration for historical purposes.
  - Both sweep and real-time trending files are automatically saved every 10 minutes. When a sweep file is AutoSaved, the filename takes the form **Sweep_mmdd_hhmmss.swp**; e.g. Sweep_1030_091030.swp

General Information and Main Screen Overview

The ADDapt 3 software package allows a window based PC to communicate with all NAAC DC drives on the drives network. ADDAPT 3 simplifies setup and tuning, display real-time operating screens and fault FIFO information, and provide diagnostics superior to any other drive control system. The ADDAPT 3 program suite is a fully scalable and extensible product.

Features of the ADDapt 3 version include the following:

- PC access to drive system calibration and configuration data allows for online/offline data editing functions, uploading and downloading parameter data to the drives, file storage and file retrieval.
- Access to fault FIFO data enables the user to view any drives FIFO in real time as well as allowing the user to clear fault FIFO or perform a fault reset of the drive.
- Signal Analysis Tools (SAT) allows the user to analyze previously saved datasets in a graphic format.
- The Real-Time Data Screen allows real time viewing and editing of user defined data in a tabular format, as well as trending in a graphic format.
- Layered security system lets different level users log on with access to more or fewer features

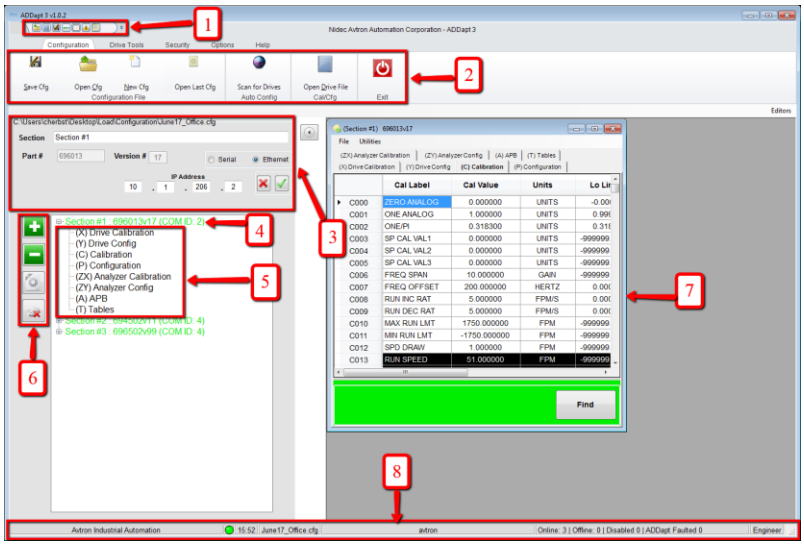


Figure 2 ADDapt 3 Main Screen

Pos	Name	Description
1	**Quick Access Toolbar (QAT)**	The QAT contains the buttons to quickly activate a function. They appear in this order left to right: ○ Open Configuration File ○ Open Cal/Cfg File ○ Save Configuration ○ Real-Time ○ Signal Analyzer ○ FIFO Viewer ○ Open Last Configuration File
2	**Ribbon**	This interface combines the menu bar and toolbar in a single pane. This is to allow easy access to the ADDapt 3 tasks listed in order of importance. The top of the ribbon includes several tables that are used to

reveal different groups of commands. These groups are:

Group	Description
Configuration	All commands related to creating, opening and saving a configuration file. Opening a Cal/Cfg (Drive) file is found here too.
Drive Tools	All commands related to monitoring a group of drives: Real-Time, Fault FIFO, Signal Analyzer, Utilities
Block Viewer	Open the drawings for an ADD32+ or SR drive only, to directly changing elements from the drawings. Adding custom notes to the drawings is also supported. This is an option that can be added to the ADDapt 3 system.
Security	All commands related to the security and access to the ADDapt 3 commands: Security Manager, Login User, Product Code
Options	It is here that ADDapt 3 is configured to meet each individual's requirements: ADDapt 3 Options, Network Options, Ping a single or group of addresses, Copy ADDapt2000 files and Block drawings, and Add32 COM tuning.

<table>
<tr><td></td><td></td><td><table><tr><td>Help</td><td>Software Information, Help files, and Windows Events Logging</td></tr></table></td></tr>
<tr><td>3</td><td>Drive settings</td><td>Define and view the drive settings. Before a new drive can be saved, verify that the section name and communication settings are set. Clicking Ethernet defines the drive's IP. Clicking Serial defines the drive's COM Port settings.</td></tr>
<tr><td>4</td><td>Drive name</td><td>Section name of the drive.

○ Click '+' next to drive name opens tree to expose drive tables
○ Right-click drive exposes tables in maintenance editor with tabbed controls
▪ For online drives, the tables read before displaying the maintenance editor
▪ For other drives, the template file is read followed by the default cal/cfg file, if it exists
The color of the drive signifies its status
<table><tr><th>Color</th><th>Description</th></tr><tr><td>Green</td><td>Drive is online. ADDapt 3 is polling and is successfully pinging the drive’s IP Address AND reading drive table 42</td></tr><tr><td>Red</td><td>Drive is offline. ADDapt 3 cannot either ping the drive or read drive table 42. When the drive is in this state, ADDapt 3 may appear sluggish because ADDapt 3 is attempting to re-establish communication based on the number of retries as defined in the COM Tuning. For those drives that are offline for long periods of time, it is</td></tr></table></td></tr>
</table>

<table>
<tr><td></td><td></td><td><table>
<tr><td></td><td>recommended to set the drive's state to disabled.</td></tr>
<tr><td>Grey</td><td>Drive is disabled. ADDapt 3 is not communicating with the drive; the drive is essentially ignored by ADDapt 3.</td></tr>
<tr><td>Orange</td><td>ADD32 COM Server (Add32.exe) faulted and lost

communication to the drive. This usually happens when the ADD32 COM server experiences an exception.</td></tr>
</table></td></tr>
<tr><td>5</td><td>Table names</td><td>The tables of a drive listed as a tree node
Left-click drive exposes tables in maintenance editor with tabbed controls. The selected table is highlighted.
Right-click table exposes just that table in a stand-alone editor</td></tr>
<tr><td>6</td><td>Drive command buttons</td><td>These buttons work on a selected drive. They are listed in order from top to bottom<table>
<tr><th>Button</th><th>Description</th></tr>
<tr><td>Add New Drive</td><td>Add a new drive to the configuration by defining its settings. Select the Green Check box to confirm</td></tr>
<tr><td>Remove Drive</td><td>Remove the selected drive from the configuration</td></tr>
<tr><td>Reset Drive</td><td>Reset the selected drive from the configuration. After reset, wait about 45 seconds for the drive</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td>to come back on line.</td></tr>
<tr><td>Toggle Drive Status</td><td>The state of this button is the opposite of the selected drive. If the selected drive is enabled, the drive status button will show disabled meaning that the selected drive will be disabled if this button is clicked. If the selected drive is disabled, the drive status button will show itself as enabled.</td></tr>
</table>
</td></tr>
<tr><td>7</td><td>Table Maintenance Editor</td><td>The tables listed in a tabbed control from which the values can be modified</td></tr>
<tr><td>8</td><td>ADDapt 3 Status Bar</td><td>The status of ADDapt 3 as conveyed in the status bar described from left to right
<table>
<tr><th>Element</th><th>Description</th></tr>
<tr><td>Company Name</td><td>Name of company where this instance of ADDapt 3 is deployed</td></tr>
<tr><td>Configuration LED</td><td>The overall status of the loaded configuration as conveyed as an LED
<table>
<tr><th>Color</th><th>Description</th></tr>
<tr><td>Green</td><td>All drives are online</td></tr>
<tr><td>Red</td><td>All drives are offline</td></tr>
<tr><td>Grey</td><td>At least one drive is disabled</td></tr>
</table>
</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>Yellow</td><td>The configuration has a mix of online and offline drives</td></tr>
</table>
</td></tr>
<tr><td></td><td></td><td>Clock</td><td>Current system time</td></tr>
<tr><td></td><td></td><td>Configuration file name</td><td>The currently loaded configuration</td></tr>
<tr><td></td><td></td><td>Username</td><td>The username currently logged into ADDapt 3. If no one is logged in, this indicates the default user</td></tr>
<tr><td></td><td></td><td>Drive summary status</td><td>Summary status of all configured drives.

Before loading a configuration, the summary status displays the state of the product key
<table>
<tr><th>Product State</th><th>Description</th></tr>
<tr><td>Activated</td><td>This instance of ADDapt 3 has a valid license</td></tr>
<tr><td>Temporary License</td><td>This instance of ADDapt 3 is operating under a 15-day trial license</td></tr>
<tr><td>Expired License</td><td>The 15-day trial license is expired. Please call Nidec-Avtron Sales to activate your version of ADDapt 3.</td></tr>
</table>
</td></tr>
</table>

		Security Level	Current level of access (Engineer or Operator). If no one is logged in, this indicates the default access level.

Maintenance Editor

Functions of the maintenance editor include downloading and uploading parameters, saving parameter data to a disk file, printing the parameter data to either a printer or file format of your choice (Excel, PDF, Word), comparing the parameters to either defaults or another file and editing parameter data off-line as well as in real-time.

The manner in which to perform an online edit is to right-click a drive name from the configuration tree. The tree can also be opened by clicking the '+' sign exposing the table names and left clicking the table name which will open the online editor to the selected table. By default, the Drive Calibration tab is selected.

More than one maintenance editor can be shown for multiple drives; however, only one editor at a time can be shown for a single drive.

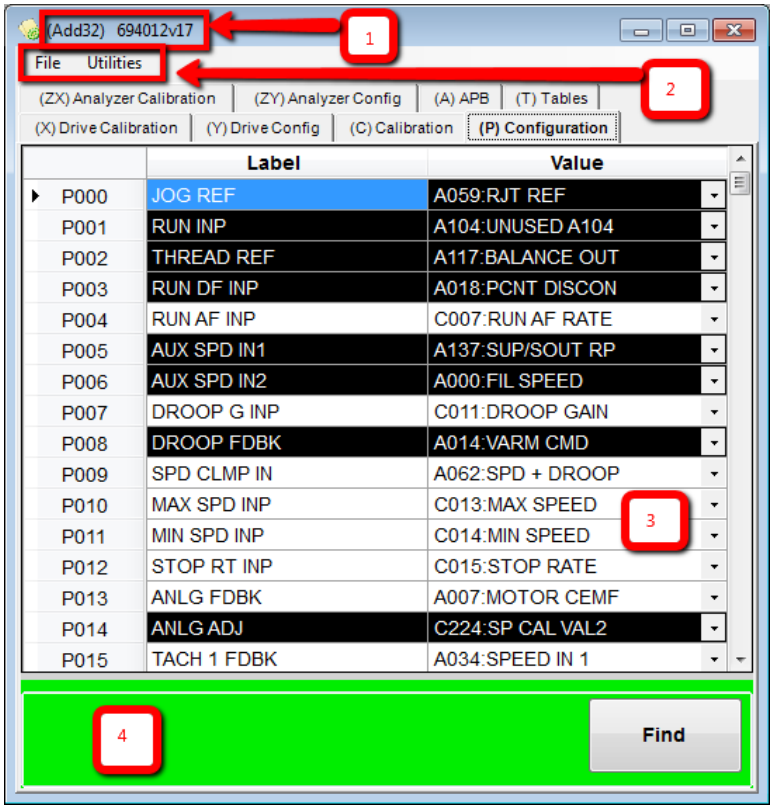


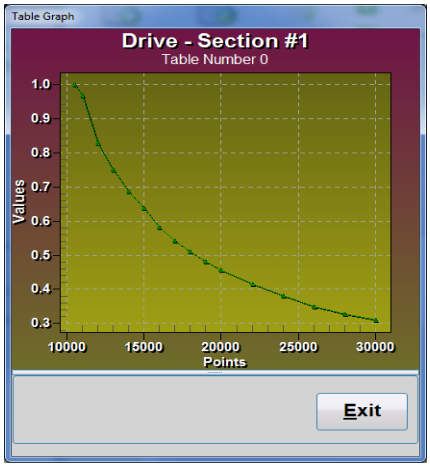
Figure 3 Maintenance Editor

<table>
<tr><th>Pos</th><th>Name</th><th>Description</th></tr>
<tr><td>1</td><td>Title</td><td>The title contains the section and drive part and version number. When the file is saved or uploaded, the section is saved in the cal/cfg file. When opening a cal/cfg file, the title includes the cal/cfg filename.
<table>
<tr><th>Menu Option</th><th>Description</th></tr>
<tr><td>Download to Drive</td><td>Download the cal/cfg file to a selected drive. This option is only available for a cal/cfg file.</td></tr>
<tr><td>Upload to Drive</td><td>Upload a drive to a cal/cfg file. This option is only available for an online drive.</td></tr>
<tr><td>Print</td><td>Print either all or a subset of the tables to a printer or file (Excel, PDF, or Word document)</td></tr>
<tr><td>Save File As</td><td>Save the current drive tables to a cal/cfg file. This differs from the upload in several ways. First, saving a drive table is available for all drive statuses. Second, saving a table only saves the changes you made in the editor to any of the tables; it will not upload any of the tables from the drive.

Once saved, the cal/cfg file maybe edited later by choosing Open Drive File from the Configuration Ribbon or the Quick Access Toolbar.</td></tr>
<tr><td>Exit</td><td>Close the maintenance editor with the option of</td></tr>
</table>
</td></tr>
</table>

		<table><tr><td></td><td>saving any changes.</td></tr><tr><td>Compare File Property Viewer Export to PV2</td><td>Compares the tables as listed in the current editor to either its defaults or a cal/cfg file. Displays the drive name, part number, version and file type for the selected drive. Exports drive configuration to a .txt file for use by the PV2 system.</td></tr></table>
2	**Pull-down menu**	This pull-down menu relates to and acts upon only those tables as listed in the maintenance grid. The pull-down menu contains a *File* menu and *Utilities* menu. The selections are explained in the following table.
3	**Maintenance Grid**	In a tabbed control configuration, the maintenance grid has tabs above each grid. Click the tabs to see that tables data. Depending on how the grid is opened determines which tab is initially selected. Left clicking a table (from the tree) initially selects that table's tab. Right click a drive initially selects the drive calibration table. Right clicking a table only displays that table in its own editor without the tabbed control - known as stand-alone mode. In stand-alone mode, there are no menu options. After changing a value to something other than the default by pressing enter or selecting another cell, the entire row background color changes to black. ADDapt 3 will check any change made to a parameter is within limits. When editing a calibration table, select the value, change it and press

		enter. The number is checked to see if it is valid and within limits. If online, the value is sent immediately to the drive. If offline, the value is saved in local memory and will be written to a disk file if the changes are saved. When editing a configuration table, each value is selected through its own combo box. To change a configuration value, select the value, then the arrow key to expose the combo box's drop down list. Select the new value and press enter. If online, the new configuration selection is sent to the drive. If offline, the selection is saved in local memory and will be written to a disk file if the changes are saved. When editing analyzer tables, the table numbers are shown in up/down numeric control. When selecting this control, the tables are scrolled by either clicking the up or down arrows or using the keyboard up/down arrows. When scrolling thru the analyzer tables, any non-default values are displayed just for that table. For ADD32 drives, there are a maximum of four analyzer tables. For ADD32+ drives, there are a maximum of eight analyzer tables. Editing the XY tables is different from the other tables since each table consists of 16 pairs of X and Y coordinates. This feature could be used to observe field weakening, for example. Each drive can have up to nine XY tables which are selectable using the up/down numeric control, numbered from 0 thru 8.

4	**Drive status group**	The bottom portion of the editor displays the status of the drive by the use of the same color scheme as used in the configuration tree. Whenever the drive status changes, this color changes to match the new status. Also located here are a few buttons depending if the table was opened in the maintenance editor or as a stand-alone table. Within the maintenance editor, only the *Find* button is available. In stand-alone mode, the *Exit* button is also available. In addition to these buttons, a *Graph* button is available when editing the XY Tables. This will graphically display the XY values for the selected table. 

Find Operation

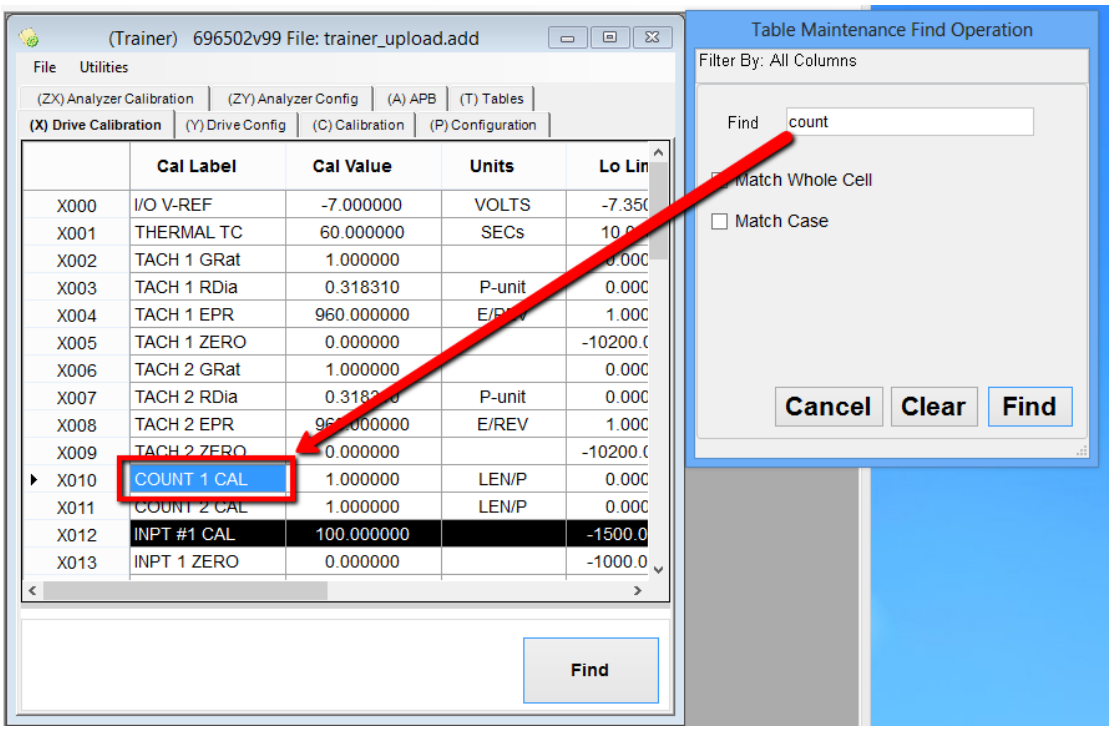


Figure 4 Find Operation

The Find function searches for part or all of cell value. When the *Find* button is selected, the Find dialog box is displayed. By default, the find operation will search all columns and cells to check if any part of the column matches search term as show in the above figure.

If no matches are found, a message will appear indicating that no matches are found as seen in Figure 5:

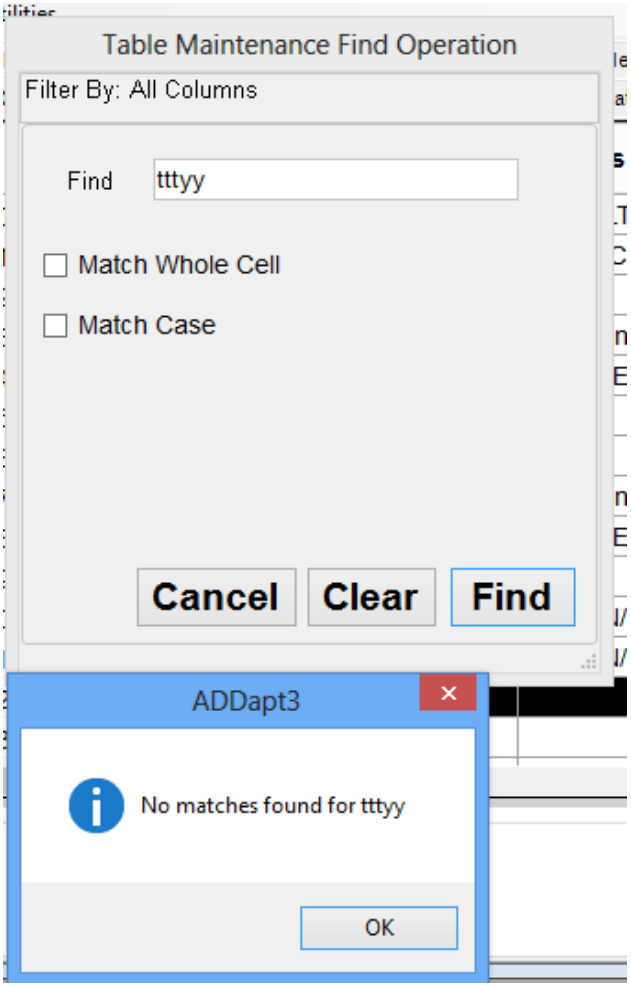
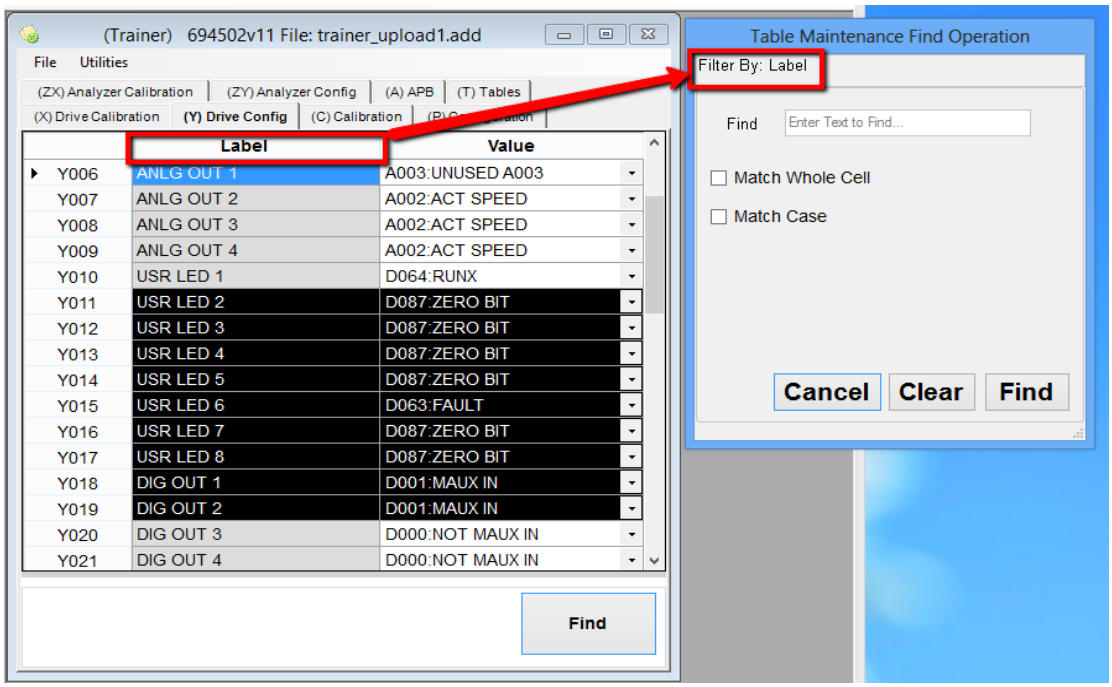


Figure 5 No Matches Found

The find operation has three options available to configure the search:

Find Option	Description
Search by column	Filters the search to the selected column in the data-grid. To limit the search to a selected column, first select the column, and then select Find. The Find Operation dialog will indicate the column name that is being searched. All other columns are ignored in the search. 
Match Whole Cell	Rather than checking if the search string is contained in a cell, the entire cell must match the search string.
Match Case	Rather than ignoring the case in the search, the search string case is included. For example, if the search string, *Dig* is used, then any cell with *Dig* is matched. But, if the cell contains *DIG*, then that cell would not qualify as a successful match

Download to Drive

Download to Drive is only available from an offline cal/cfg file as it downloads parameter data to the drive from a previously saved file. Opening a cal/cfg file is done through the *Open Drive File* selection from the configuration ribbon.

Only a file saved in ADDapt 3 format can be downloaded to an ADD32+ drive. If an attempt is made to download a file created by ADDapt2000 to an ADD32+ drive, errors will occur with the signal analyzer tables since there is a mismatch between the four (4) channels saved in the ADDapt2000 file and the eight (8) channels in the ADD32+ drive.

Before proceeding, verify that a configuration is loaded and at least one drive is online; otherwise, no drives will be available from the 'Online Drives' dropdown list as seen in Figure 6:

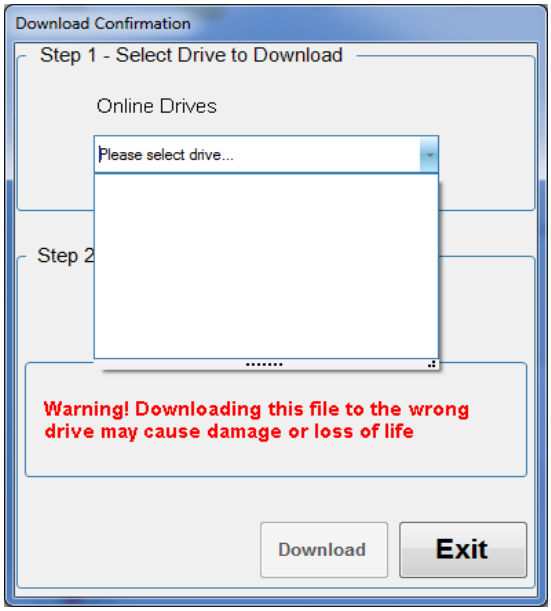


Figure 6 - Can download to online drives only

Download the cal/cfg to the selected drive. The list of online drives is available from the *Online Drives* combo box as seen in Figure 7.

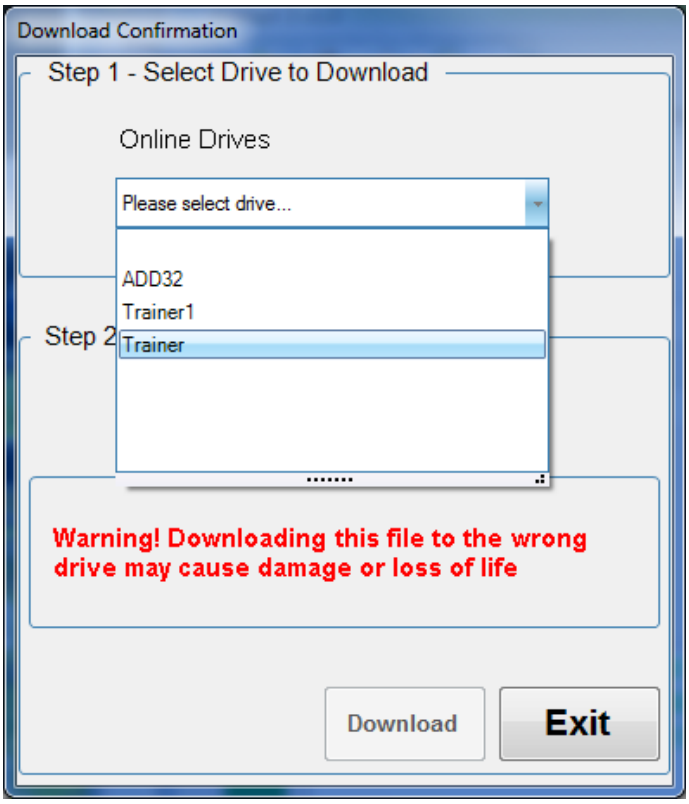


Figure 7 Confirm Download to Selected Drive

After a drive is selected from the dropdown list, we check to make sure that the drive is not running by interrogating the RUNX bit. If this bit is set on, then we know the drive is running and the following message appears as in Figure 8:

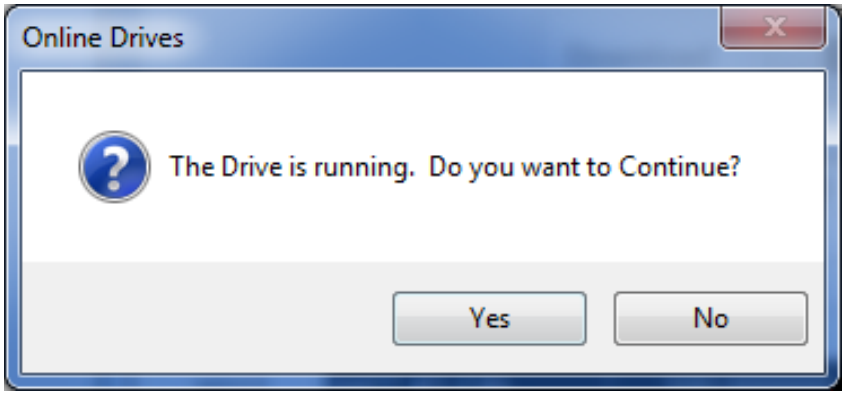


Figure 8 Confirm Reset

Before proceeding with the download, the selected drive's part and version number is checked against the cal/cfg file's part and version number since the downloaded file

software versions must match the destination drive. If there is a mismatch, a mismatch message is displayed like Figure 9.

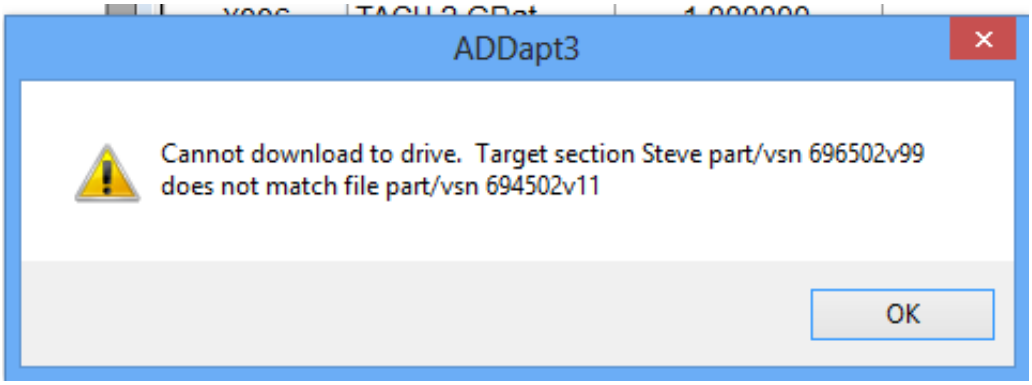


Figure 9 Incorrect targeted drive

After all checks are passed, start the download by clicking *Start* from the Download Feedback dialog. Each table is downloaded one at time. After the download of the tables are successfully completed, the tables are read from the drive to compare to what was just downloaded. This validates that what was downloaded was really downloaded. See Figure 10.

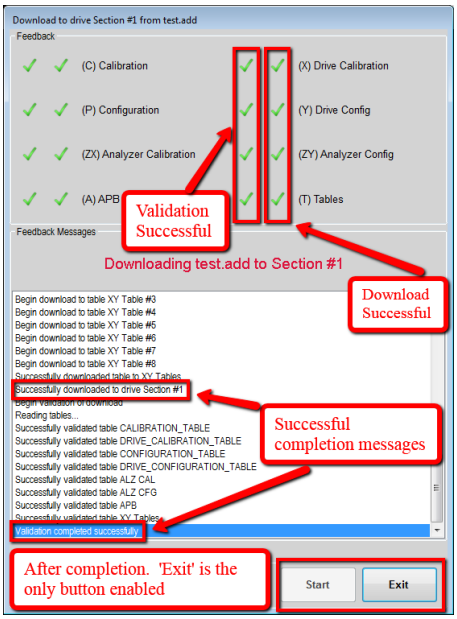


Figure 10 Download Feedback

If during the download an error occurs, the download will immediately stop at the first error and an error message box will appear like Figure 11.

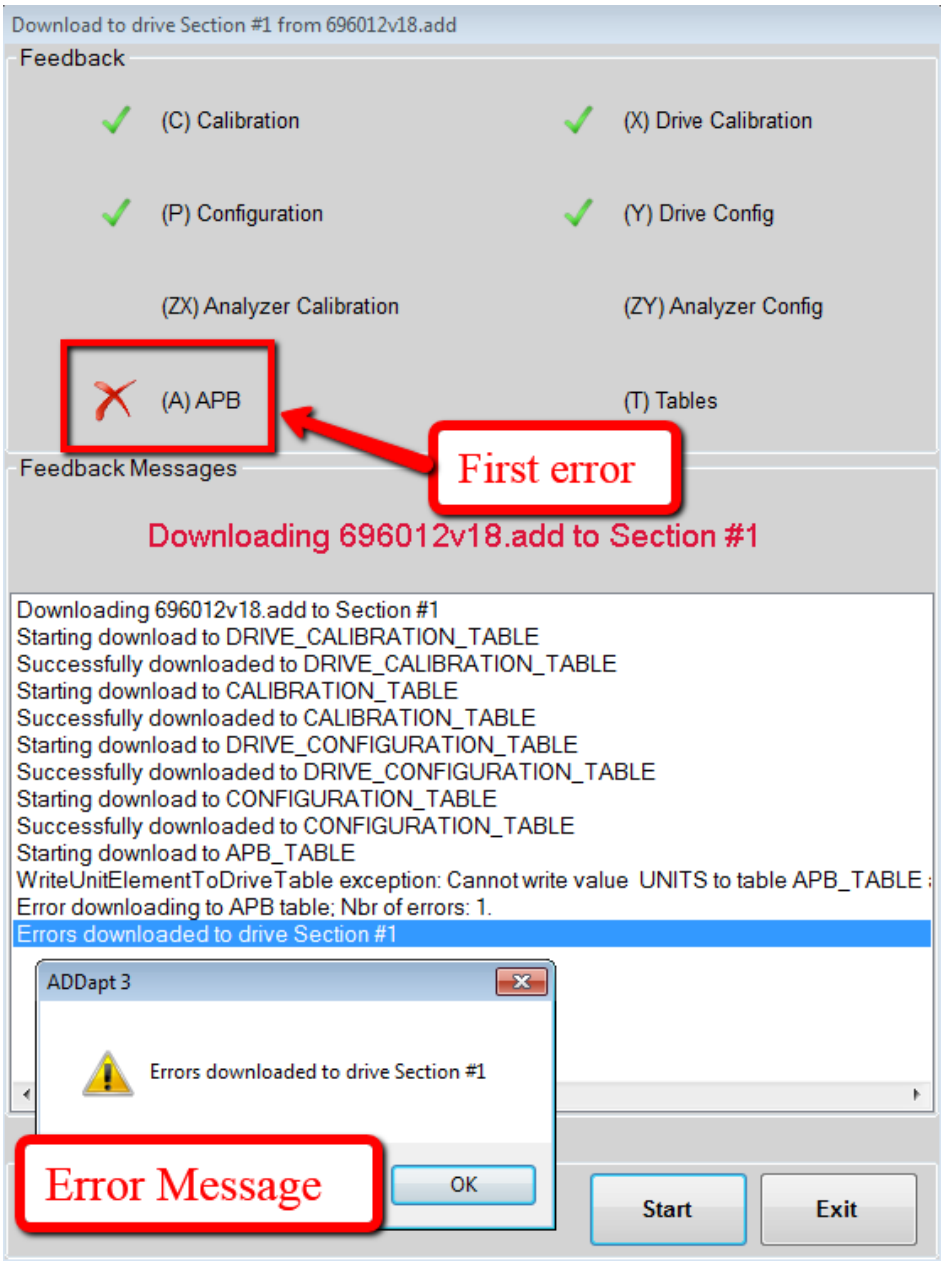


Figure 11 Stops at First Error

Upload from Drive

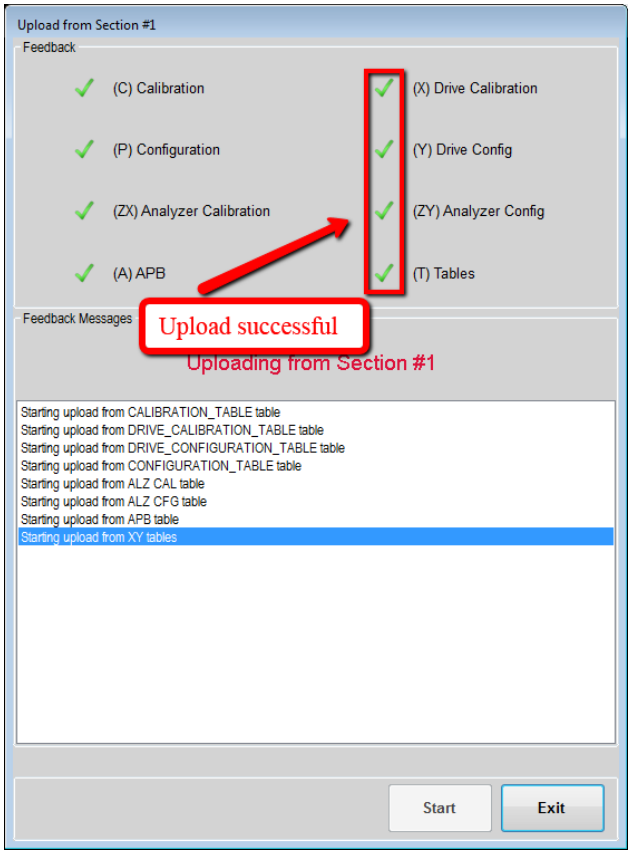


Figure 12 Upload Feedback

Upload from Drive is only available from an online drive table. This allows the user to upload parameters from the selected online drive saving them to a file on disk. This will only upload the tables from the drive that relates to the maintenance editor from which the upload is selected.

Select the start button to commence the upload where the program retrieves all data from the drive saving it in local memory. As each table is successfully uploaded, a check mark appears next to the drive (Figure 12). The data stored will also contain section name and number. The file will be marked that it was written by ADDapt 3 (as opposed to ADDapt2000 or the ADD32+ USB device).

After all the drive parameters are read, they can be saved to a cal/cfg file where the filename is specified using a standard windows save dialog box.

If during the upload an error occurs, the download will immediately stop at the first error and an error message box will appear.

Print Tables

To print the tables from a selected drive, select Print from the Maintenance Editor File Menu (Figure 13).

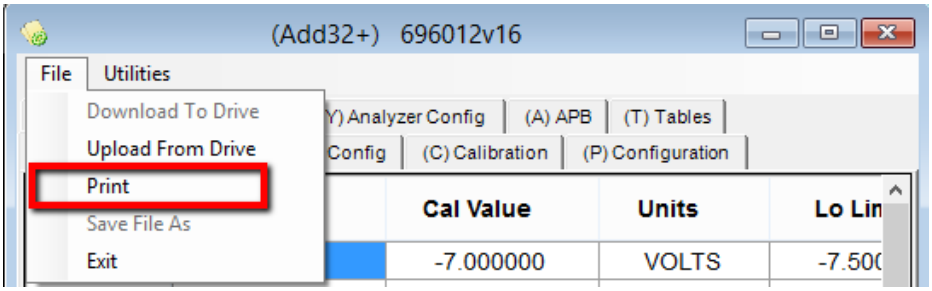


Figure 13 Select Print from File Menu

A print dialog appears presenting options to either print **All Drive Tables** or a selected set of tables. Printing a selected set of tables can be done by selecting either all **Drive Tables, Signal Analyzer** tables or **XY Tables** as seen in Figure 14.

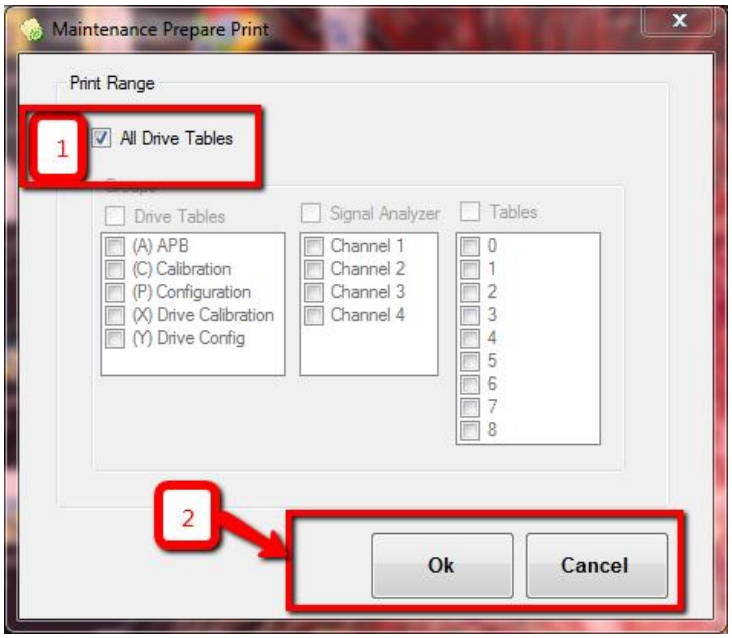


Figure 14 Printing All Tables

Pos	Name	Description
1	**All Drive Tables**	Checking this box will print all the tables
2	**Confirmation**	Selecting OK will display the report in the report viewer (See below for further description on this feature)

Printing Selected Drive Tables

To print a selected set of tables, uncheck **All Drive Tables** and select either or all **Drive Tables, Signal Analyzer** tables or **XY Tables** or one of the individual tables listed in each section. When selecting an individual table, please click the check box twice. Refer to Figure 15.

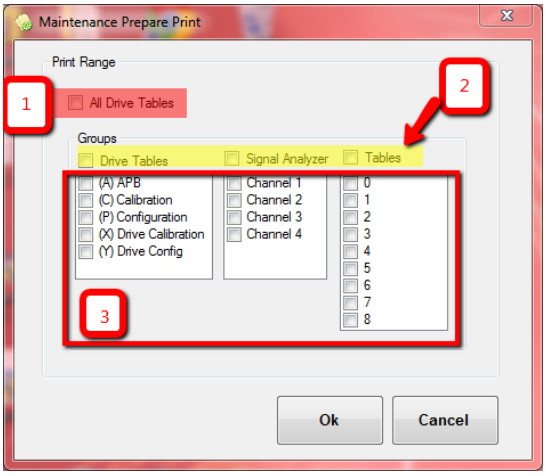


Figure 15 Printing Selected Tables

Pos	Name	Description
1	**All Drive Tables**	Unchecking this box enables the individual table's check boxes.
2	**Group Check Boxes**	Checking the individual group check boxes will print all the tables for the selected group. For example, selecting the Drive Tables Group Check Box will print tables APB (A) thru Drive Config (Y).
3	**Individual Table Check Boxes**	Checking the individual table check boxes will print only those tables selected. For example, only selecting tables APB (A) and Drive Config (Y) will only print tables APB and Drive Config.

Report Viewer

After selecting OK, the report is generated and a preview is displayed in the Microsoft Report Viewer. At the top of the Report Viewer is located the standard Microsoft toolbar. From left to right, these are the actions that are available from this toolbar:

- Scroll through the preview pages
- Refresh the report
- Select a printer to send the report
- Change the layout from portrait to landscape
- Page Setup
- Export the report to Excel, PDF or a Word document
- Change the size of the report
- Search for a string in the report

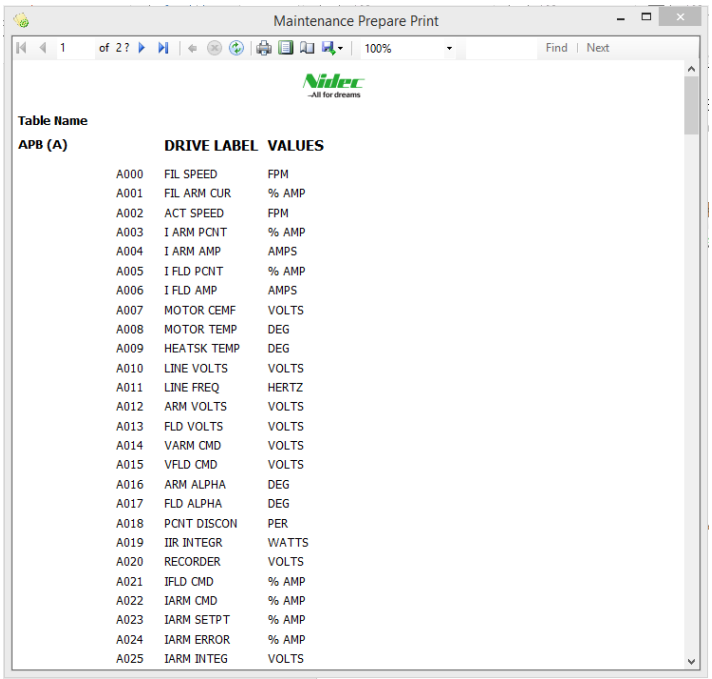


Figure 16 Sample Table Preview in Report Viewer

Save File

This option is available for all drives that are **not** online including offline and disabled drives and those drive files opened as cal/cfg files (*.add). This differs from the *Upload from Drive* option in that only those items actually changed by the user are saved.

Saving a cal/cfg file from ADDapt 3 only saves the file in ADDapt 3 format; it is not saved in ADDapt2000 format. A file saved in ADDapt 3 format cannot be opened by ADDapt2000. Please see the description on File Property Viewer on how to view what wrote the cal/cfg file in question.

Please follow these rules when saving a cal/cfg (*.add) from ADDapt 3:

1. If it is your intention to load the saved cal/cfg file to an ADD32+ drive via USB, then the file name **must** be no more than 11 characters.

2. If it is your intention to download, compare, print, edit the saved cal/cfg via ADDapt 3 but **not** load the file via a USB device, then the filename length is limited to the Windows 7 maximum file length. A filename length of 64 characters was successfully tested during ADDapt 3 testing. It is not recommended to use a filename length longer than 64 characters based on the following from Microsoft:

   "Windows usually limits file names to 260 characters. But the file name must actually be shorter than that, since the complete path (such as C:\Program Files\filename.txt) is included in this character count. This is why you might occasionally encounter an error when copying a file with a very long file name to a location that has a longer path than its current location."

File Compare

Cal/Cfg files (.add) can be compared to determine the existence of different Cal/Config parameter values. To compare files, they must be based on the same Nidec-Avtron part number. Files of different versions based on the same Nidec-Avtron part number may be compared. Additionally, Cal/Config parameters may be compared against their default.

In order to run a file comparison, the Drive Template files must be located in their designated directory.

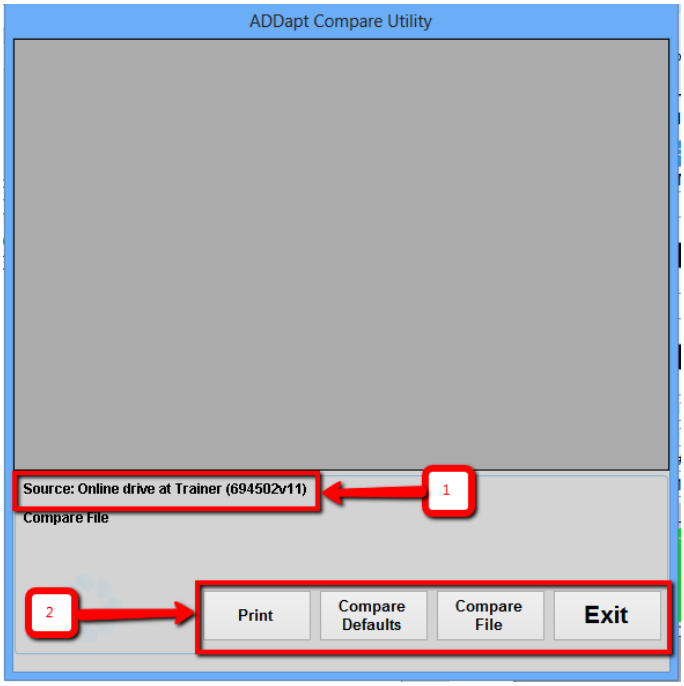


Figure 17 - Comparison Utility

Pos	Comparison Topic	Description
1	**Source File**	File compare always shows the source file whether it is a cal/cfg

		file or online drive
2	**Command Buttons**	The command buttons are listed at the bottom: ○ Exit utility ○ Compare another cal/cfg file ○ Compare defaults ○ Print comparison results

After the comparison is completed, the results are presented in data grid

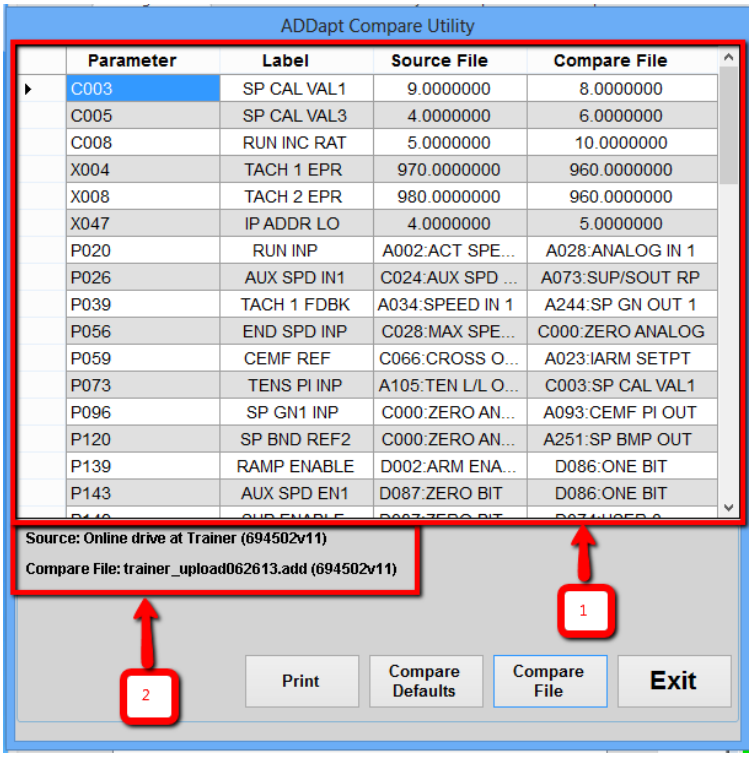


Figure 18 - Comparison Results

Overview Pos	Comparison Overview Topic	Description
1	**Comparison Results**	Comparison Results are presented in a datagrid
2	**Comparison Files**	The source and compare files. The source is either the online drive or cal/cfg file from the maintenance editor.

The results can be printed by selecting the print button; these are presented in report viewer window

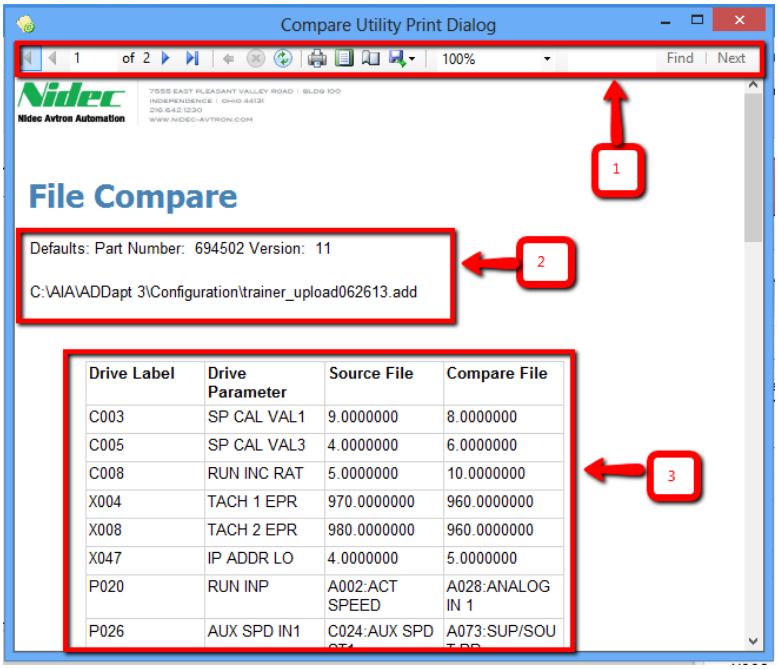


Figure 19 - Print Results

Pos	Comparison Overview Topic	Description
1	**Print Toolbar**	Standard Microsoft Toolbar
2	**Comparison Files**	The source and compare files. The source is either the online drive or cal/cfg file from the maintenance editor.
3	**Comparison Results**	The comparison results that were presented in the data-grid.

Drive Reset

After making configuration changes, the user can activate any calibration and configuration changes without going to the drive's keypad. Do this by selecting the drive from the configuration tree followed by clicking the reset button. The reset function will not work if the drive is running. If the drive has a RUNX bit and it is set, a message is displayed informing the user that the drive is running so the reset will not function.

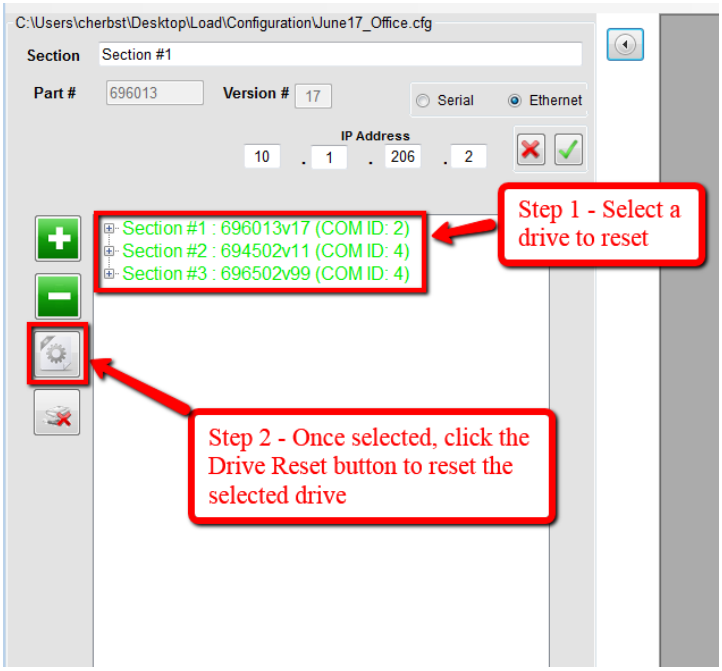


Figure 20 Selecting Drive to Reset

The selected drive will now reset if it is not running. Only a user with an Engineer security level can perform this action.

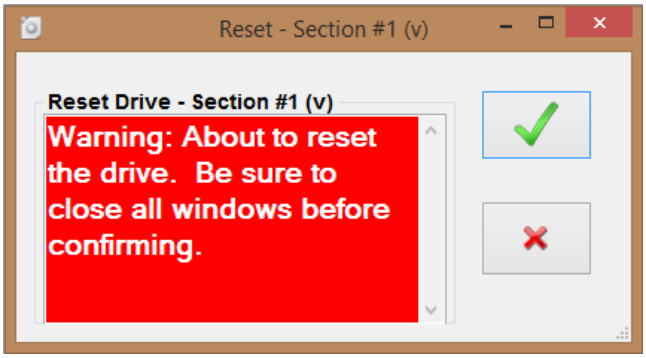


Figure 21 Reset Drive Confirmation Box

Button Icon	Description
Green Checkmark	Resets the current drive only if the target drive is not running. If the drive is running, a warning message will appear.
Red X	Cancels Resetting of the drive

File Property Viewer

Found in the Utilities menu of table maintenance editor, this utility checks and displays the properties of saved cal/cfg (.add) files. Information included is the section name, drive part number and version and the file type, or what tool created the file (ADDapt2000, ADDapt 3 or USB). When using this utility to view a drive's tables opened from the configuration tree, the file type reports the drive's status (Online, Offline, or Disabled).

Figure 22 File Property Viewer

Drive Tools Tab

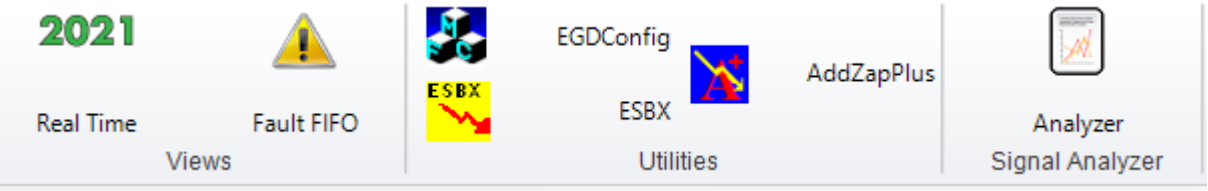


Figure 23 Drive Tools Ribbon Tab

Icon Name	Description	Comments
Real-Time	Open an editable Real-Time screen	This screen either opens or creates a Real-Time screen. Each tab represents one tab.
Fault FIFO	Opens the fault FIFO	This screen displays all of the open drives on the system
ESBX	Invokes the utility to flash the Avtron EXBX(Ethernet) board	This utility is used to flash the ESBX Ethernet board. The board will provide indication of completion of the ZAP program by an alternating flash of CR2 and CR3 LED's.
ADDZap Plus	Invokes the utility to flash the ADD32 Plus	This utility is used to flash the ADD32 Plus drive

EGDConfig	Invokes the Ethernet Global Data Configuration utility	It is used to define an EGD message configuration (mainly to PV2.0 and GE systems)
Signal Analyzer	Invokes the Signal Analyzer	Displays a graphical interface where the user can select one or many Analyzer files (*.alz) or invoke the 4 or 8 channel high speed signal analyzer.

Real-Time Data

The ADDAPT 3 program allows real time viewing and editing of user defined data in a tabular format through the use of the **REAL-TIME DATA COLLECTION** tool. This tool includes elements of both the analog and digital tables. There are a total of nine columns which display the analog output. To separate the left side from the right, a grey column exists. These columns contain the Section Name, Label Text, Live Analog Value, and Units. When the analog value is not communicating, an empty cell is displayed.

When the row is configured, the Label Text column will contain the label, the Section Name will contain the section name, the Live Analog Value will contain the value, and the Units will contain the units. If the section name is Offline, then the Live Analog Value will be blank. Also, the label may not match the analog or digital parameter being viewed if user has manually entered his own labels in the field setup.

The digitals lie at the bottom of the screen. There are three columns of four, each separated by a gray column. When the grid column is dark-gray, it indicates that the button is not configured. When the button is configured, the button will have a legend that is the digital bit label, unless the screen is set to Offline and the field is set to read labels up from drive. Also, the label may not match the analog or digital parameter being viewed if user has manually entered his own labels in the field setup. The color of the button will be determined by the state of the digital bit in the drive. RED will indicate the bit is **off/ZERO BIT.** GREEN will indicate the bit is **on/ONE BIT**. The button will be medium gray in the event there is a communication error that results in the state of the bit not being refreshed.

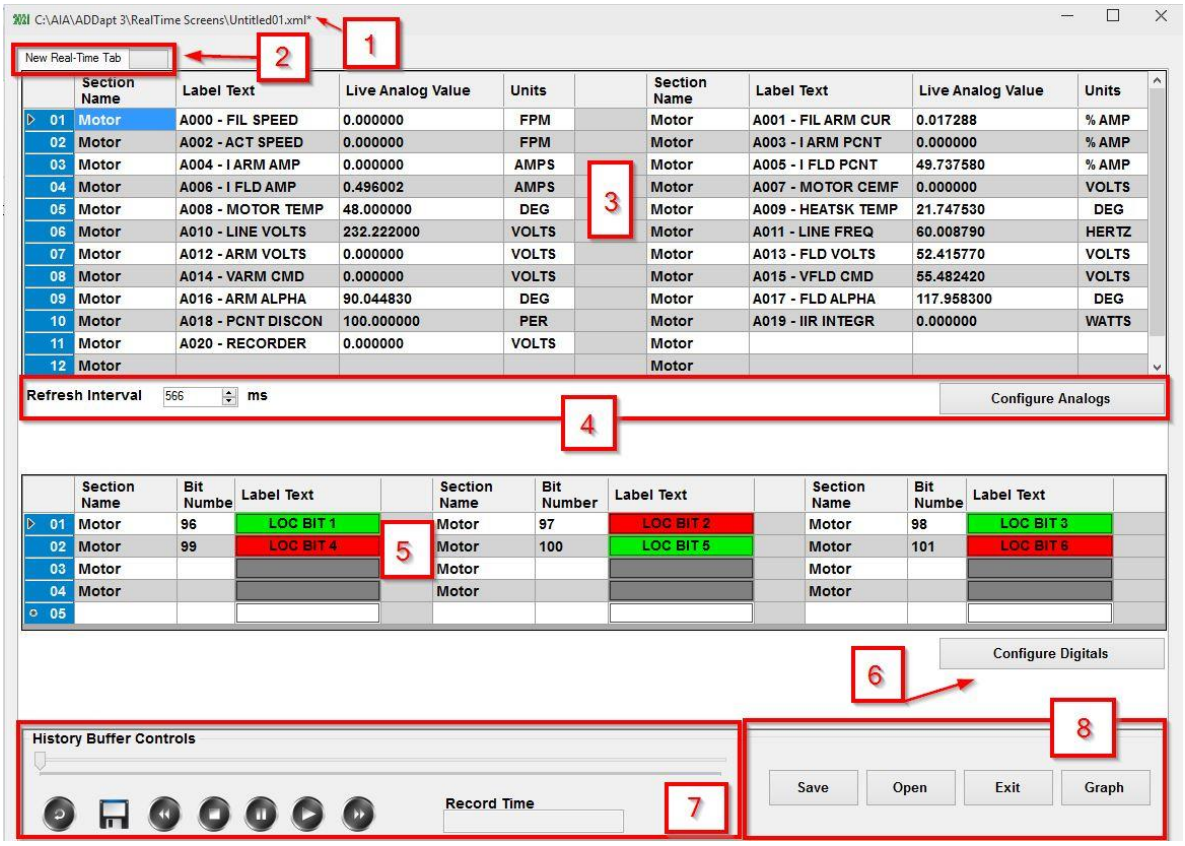


Figure 24 Real-Time Data Display

Pos	Name	Description
1	**File Name**	The status always shows the current file that is directly proportional to the tab.
2	**Tabs**	Shows the name of the file. Click on the empty tab to open an existing Real-Time file or create a new file. To change the name, right click on the tab, and dialog box appears to let you change the name. Press OK, and the name is changed.

3	**Analog Display Grid**	This grid shows all of the analog signals in two columns. These columns are corresponding to the listed in Analog columns. Below are the column definitions • Section Name - The section name that Live Analog Value is associated with • Label Text - Displays the current label defined in the Configure Analog Screen • Live Analog Value - Displays the current Analog value. • Units - The current units for the Label
4	**Analog Section**	This section is used for invoking the configure analog box, and to adjust the refresh interval. • Refresh Interval - Depending on the drive connection, serial or Ethernet, the rate is set to the refresh rate which is an approximation of the time to update values accurately. The default refresh rate is 243ms, but can poll as fast as 81ms **as long as no more than 4 analogs and/or digitals (for a combination totaling four) are polling simultaneously.** • Configure Analogs - Launches the Configuration analog.
5	**Digital Display Grid**	This grid shows all of the digital signals in three columns. The colors of these buttons explain the state of the digital bit. The colors used are Red, Green, Yellow and Gray. Red signifies bit is polling but is turned off. Green signifies that the bit is polling and is turned on. Grey signifies that the bit is not being polled. Yellow shows only while using the history buffer as "changing states". These columns correspond to the listed in Digital columns. Below are the column definitions • Section Name - The section name for the digital bit selected. • Bit Number - The bit being manipulated.

		• Label Text - Displays the text associated with the bit.
6	**Configure Digitals**	Launches the Configure Dialog box.
7	**History Buffer**	Data points that are recorded for the above plot. When activated, the entire box becomes yellow. Please note that all of the buttons are Gray when not on. When the history buffer is turned on, buttons will appear either red or green. Red signifies that the button is enabled, but not active. Green signifies that the button is enabled and turned on. • On/Off - Button must be turned on to siphon through the history buffer. • Save Disk - Saves the file to the default folder used for the Real-Time folder. • First Point - Moves the slider pointer to the beginning • Stop - Stops the automatic playing of the history buffer • Pause - Pauses the automatic playing. • Play - Plays the buffer by moving one point at a time with no user intervention. • Last Point - Moves the slider pointer to the end of the slider
8	**Command Buttons**	Command buttons used for opening, saving and exiting files. • Open – Opens a Realtime file in the current tab • Save – Save the current tab as a Realtime configuration file • Exit – Exit out of the Realtime window • Graph – Opens the Realtime / History Trending Graph

Configure Analogs

To configure an analog section of the Realtime window, click on configure analogs, and the following window will appear.

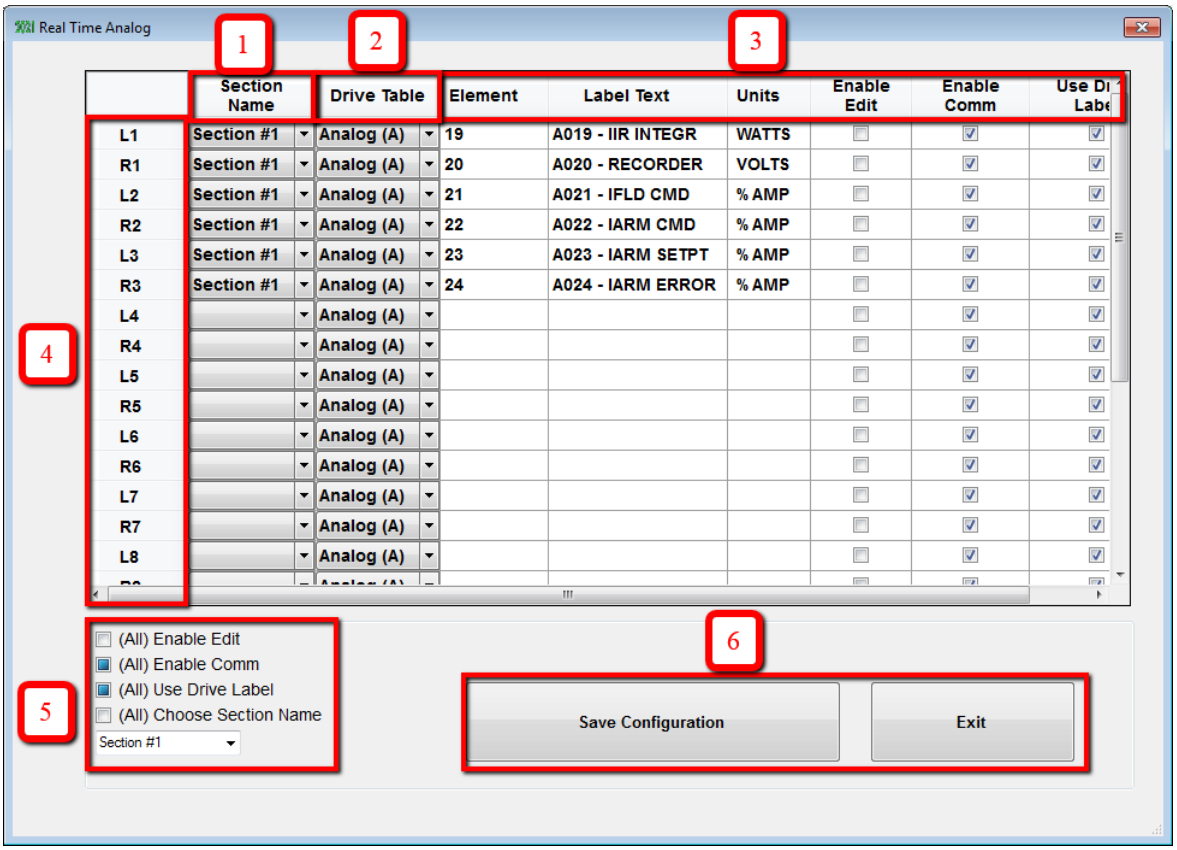


Figure 25 Configure Analogs

<table>
<tr><th>Pos</th><th>Name</th><th>Description</th></tr>
<tr><td>1</td><td>Section Name</td><td>The Real-Time data is based upon the section name as defined in the configuration tree.

There are two ways in which to set the section name:

• Select the section name from the data grid combo box. This will set the section name just for that analog value
• Select the section name from the Use Section Name combo box. This will set the section name for each and every analog value, even the analog values with empty rows! For this feature to work properly, click Use Section Name checkbox before select the section name from the combo box</td></tr>
<tr><td>2</td><td>Analog Data Type</td><td>This combo box allows for the selection of a drive table to retrieve a numeric parameter value. The combo box offers three options: Analog (A), Cntl Cal (C) or Drive Cal (X). The options allow for display and possible editing of analog data from the drive's Analog table (Annn parameters), Drive Calibration table (Xnnn parameters), or Control Calibration table (Cnnn table) respectively.</td></tr>
<tr><td>3</td><td>Analog Configuration</td><td>
<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td>Element</td><td>Defines the element (table parameter) number of the selected data table that is to be displayed and possibly edited.</td></tr>
<tr><td>Label Text</td><td>This is where the label from the drive template is displayed, if Used Drive Label is checked. Otherwise, specify a label text to</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td>your liking. The label from the drive can be overridden by just typing in a new label.</td></tr>
<tr><td>Units</td><td>This is units specified to the element. It is uploaded from the drive template. It can be overridden by typing in a new unit definition.</td></tr>
<tr><td>Enable Comm</td><td>By default, this is checked so that this element value can be shown on the Real-Time screen. It uses the communications as defined for the specified section through its configuration (as defined in the configuration tree).</td></tr>
<tr><td>Enable Edit</td><td>By default, this is unchecked so that allowing an edit is a conscious decision by the user.</td></tr>
<tr><td>Enable Drive Label</td><td>By default, this is checked so that the drive label text is retrieved from the drive's template file</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Column Position</td><td>Position of the analog on the Real-Time screen where:
○ L : Left columns
○ R : Right column
○ ## : row position
For example: L3 means left column, third row</td></tr>
<tr><td>5</td><td>Enable Config for all Analogs</td><td>Enable All Analog Configuration Parameters</td></tr>
</table>

		Parameter	**Description**
		Enable Edit	When checked, all analog parameters are editable
		Enable Comm	When checked, all analog parameters will communicate with the drive
		Use Drive Label	When checked, all analog parameters will use the label as defined in the template file
		Use Section Name	When checked, all analog parameters will use the selected section name
6	**Buttons**	**Group**	**Description**
		Save Configuration	This becomes active when a change is made to an existing analog or a new Real-Time analog data point is defined. This saves the real-time analog configuration to the real-time screen's binding list; in this way, as soon as the analogs is saved and the analog configuration screen is closed, the Real-Time screen will begin polling the selected analogs.
		Exit	Closes this window

Configure Digitals

To configure the digital section of the Real-Time window, click on configure digitals, and the following window will appear.

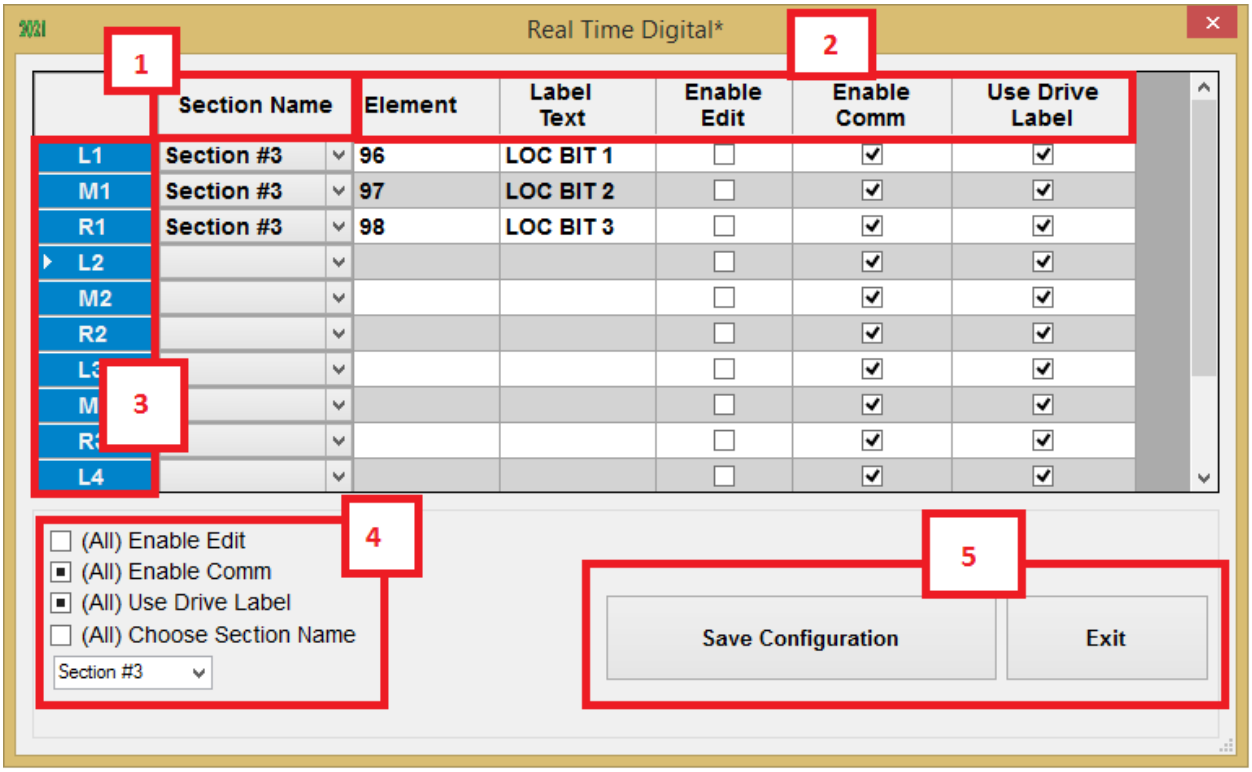


Figure 26 Configure Digitals

Pos	Name	Description
1	**Section Name**	The Real-Time data is based upon the section name as defined in the configuration tree. There are two ways in which to set the section name: • Select the section name from the datagrid combo box.

<table>
<tr><td></td><td></td><td>This will set the section name just for that digital value
• Select the section name from the Use Section Name combo box. This will set the section name for each and every digital value, even the digital values with empty rows! For this feature to work properly, click Use Section Name checkbox before select the section name from the combo box</td></tr>
<tr><td>2</td><td>Digital Configuration</td><td>Digital Configuration Parameters
<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td>Element</td><td>Defines the element (table parameter) number of the selected data table that is to be displayed and possibly edited.</td></tr>
<tr><td>Label Text</td><td>This is where the label from the drive template is displayed, if Used Drive Label is checked. Otherwise, specify a label text to your liking. The label from the drive can be overridden by just typing in a new label.</td></tr>
<tr><td>Enable Comm</td><td>By default, this is checked so that this element value can be shown on the Real-Time screen. It uses the communications as defined for the specified section through its configuration (as defined in the configuration tree).</td></tr>
<tr><td>Enable</td><td>By default, this is unchecked so</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td></td><td>
<table>
<tr><td>Edit</td><td>that allowing edit is a conscious decision by the user.</td></tr>
<tr><td>Use Drive Label</td><td>By default, this is checked so that the drive label text is retrieved from the drive's template file</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>Column Position</td><td>Position of the analog on the Real-Time screen where:
• L : Left columns
• R : Right column
• ## : row position
For example: L3 means left column, third row</td></tr>
<tr><td>4</td><td>Enable Config for all digitals</td><td>Enable All Digital Configuration Parameters
<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td>Enable Edit</td><td>When checked, all digital parameters are editable</td></tr>
<tr><td>Enable Comm</td><td>When checked, all digital parameters will communicate with the drive</td></tr>
<tr><td>Use Drive Label</td><td>When checked, all digital parameters will use the label as defined in the template file</td></tr>
<tr><td>Use Section</td><td>When checked, all digital parameters will use the selected section name</td></tr>
</table>
</td></tr>
</table>

		Name	
5	**Buttons**	**Group**	**Description**
		Save Configuration	This becomes active when a change is made to an existing digital or a new Real-Time digital data point is defined. This saves the real-time digital configuration to the real-time screen's binding list; in this way, as soon as the digitals are saved and the digital configuration screen is closed, the Real-Time screen will begin polling the selected digitals.
		Exit	Closes this window

Using a Saved Real-Time File in Different Locations

Since a Real-Time configuration can be used in different locations, if the Real-Time configuration file does not connect with the saved address an error box will open reminding the user that the drive IP address and Section Name is different and is not connected as shown below:

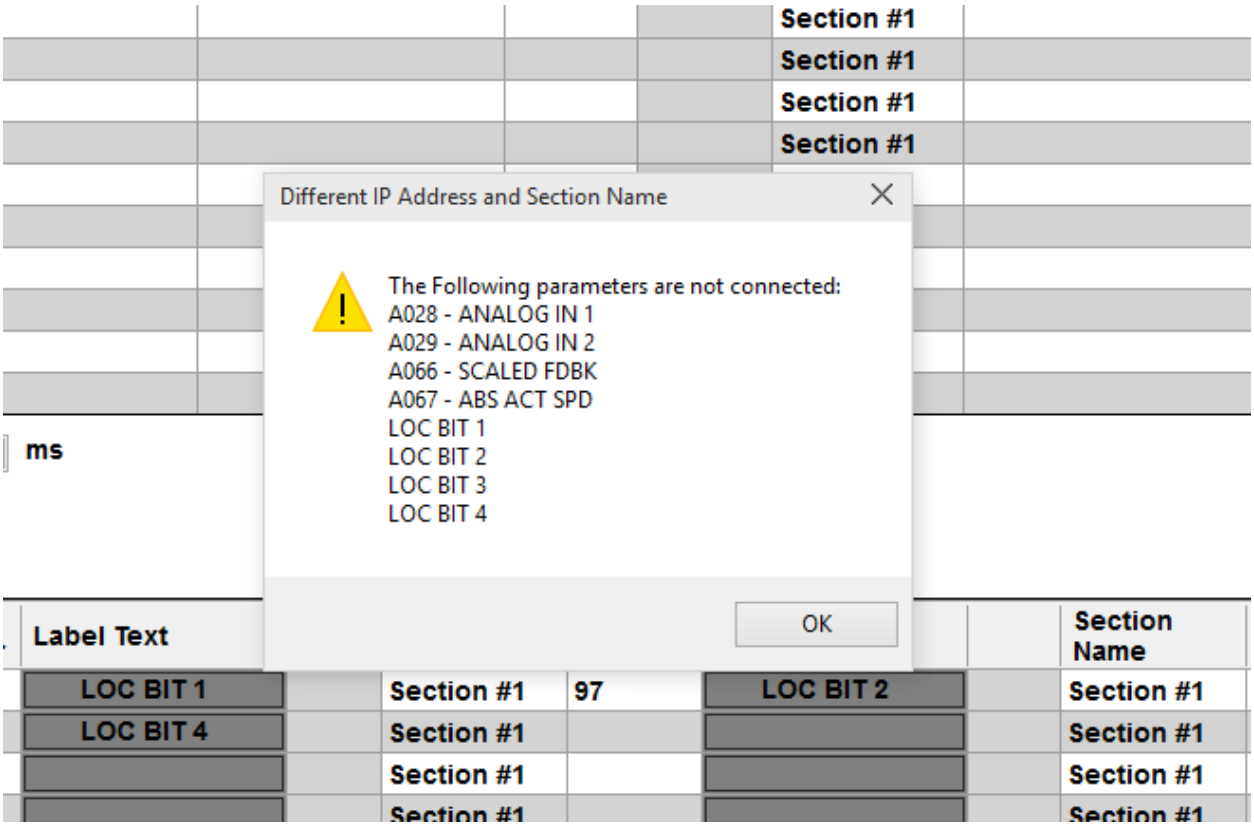


Figure 27 Different IP Address and Section Name Error

History Buffer

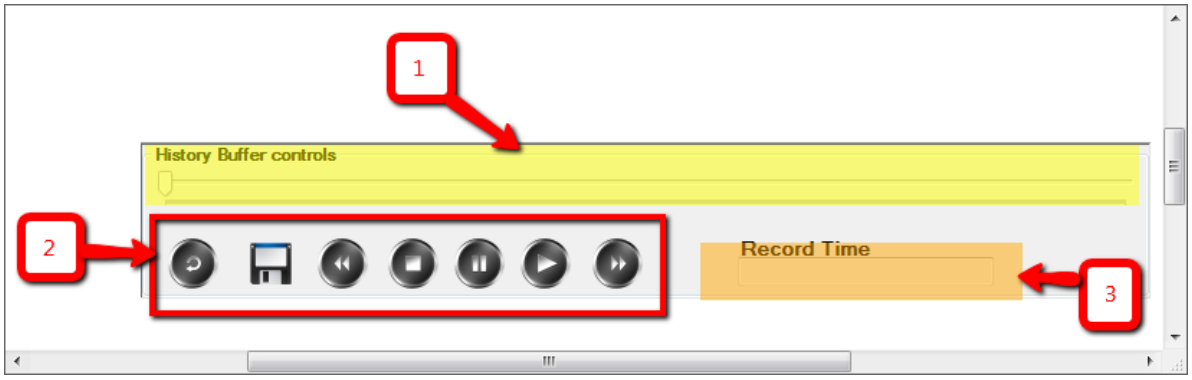


Figure 28 History Buffer VCR Buttons

Pos	Name	Description
1	**Historical Slider Bar**	To activate this slider, select the Stop button. Then, this slides through all the historical records. As the slider scrolls the analog data, digital data and the recorded time changes along with the slider. Digital data has three states that can be displayed: **GREEN** identifies that the digital bit is **HIGH**, **RED** identifies that the digital bit is **LOW,** and **YELLOW** identifies that the digital bit is **RISING or FALLING.**
2	**Historical VCR-type buttons**	**Button Icon** / **Description** **Slider** / This button has two states. When in automatic mode, it moves to the next historical point. However,

	when in manual mode, the slider can be moved by either the left and right arrow, or holding the mouse down and moving the slider.
On/Off Button	This button has two states. It turns green to denote that it is on, and grey to denote that it is off.
Save	Save the history buffer to the history file. If this button is pressed while playing, a 1 second window will appear stating that it is saving
Go to 1st record	When not in play mode this button is green, where if pressed it will go to the beginning of the historic buffer.
Stop	When this button is active and pressed, it stops the slider as well as the historical data
Pause	Stops the live data, create the history buffer from the previous five minutes of live data as recorded in the live buffer and displays the most current record on the screen.
Play	Switch the screen to the live data starting at the current record just written in the live buffer.

		Go to last record — Displays the last record and moves the slider to the last position in the history buffer record
3	**Recorded Time**	Displays the time that the point was recorded.

Edit Analog Calibration Parameter

Editing of an analog parameter shown in the Real-Time window (and configured to be editable) may be accomplished by right mouse clicking on the VALUE field of the parameter. **Note: Analog "A" parameters are *NOT* editable!**

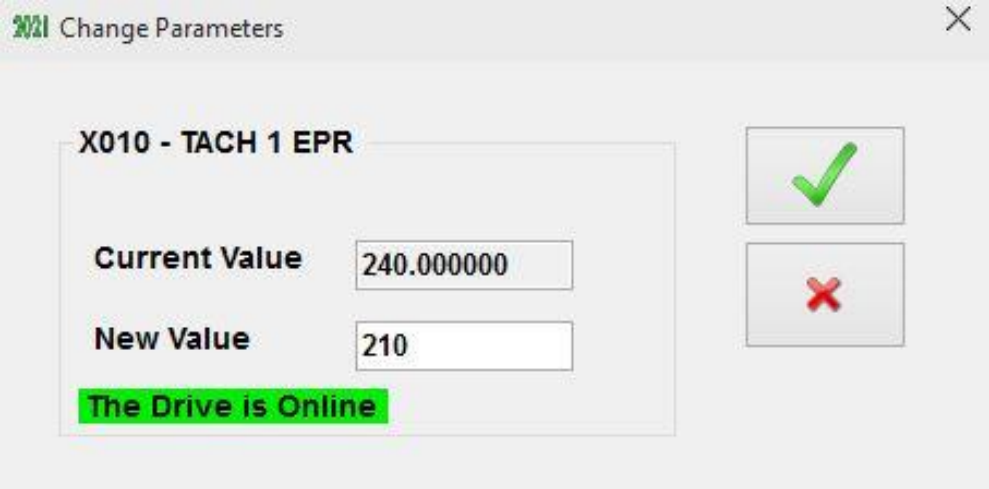


Figure 29 Real-Time Analog Parameter Edit

Control	Description
Current and New Value	Shows the current value, but allows the user to enter in the New Value ("X" and "C" parameters only).
Green Checkmark	Changes the value of the parameter.
Red X	Closes without changing the value of the parameter.

Drive Status	Shows the status of the drive:

Green	The drive is online
Red	The drive is offline
Grey	The drive is disabled

Change Default Name

To change the header on a Tab, right click on the tab.

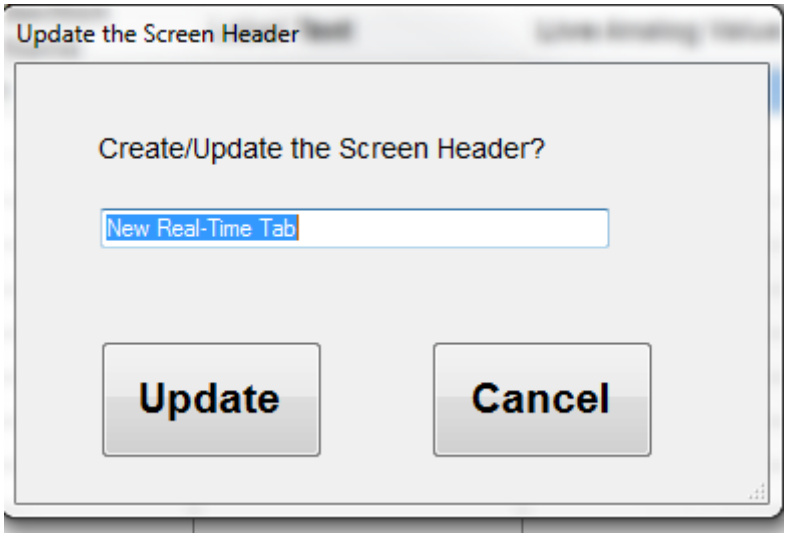


Figure 30 Update Tab Header

Control	Description
Update	Updates the current tab to the name that is in the text box and closes the window.
Cancel	Cancels the updates and closes the window.

Real-Time and Historical Trend Graphing

Figure 31 Real-Time Trending Screen

The ADDapt 3 program allows a graphical Real-Time viewing, as well as a graphical historical viewing, of the Real-Time Data Collection elements. See Figure 30.

Pos	Icon Name	Description	Comments
1	**QAT**	Quick Access Toolbar	From left to right: • Open Historical Session (*.swp) • Save Historical Session (*.swp or *.csv) • Print current graph • Close graph

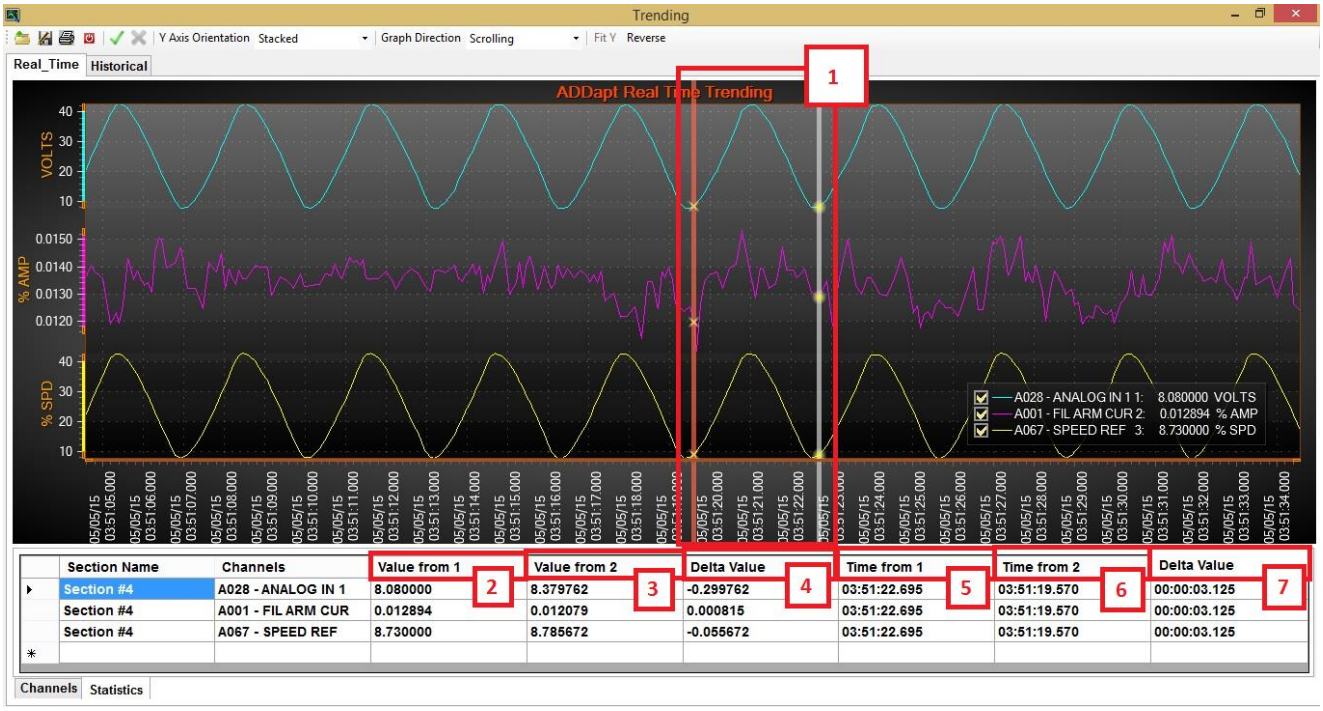
			• Start active graphing • Stop active graphing
2	**Y Axis Orientation**	Selects the orientation of the Y axis	Toggles between a Stacked or Layered Y Axis. Changing this stops any active graphing and needs to be restarted. • Stacked: Signal plots are singularly stacked in individual rows. • Layered: Signal plots are stacked on top of one another.
3	**Graph Direction**	Selects the way the graph is moved across the X axis.	Four types to choose from: • Scrolling • Sweeping • Stepping • Triggered
4	**Fit Y**	Fits the min and max values of elements into the Y axis.	The Fit Y button detects the min and max values of the elements being polled and fits them into the graphing area. Pressing this button will bring maximum resolution into the Y axis. **This is done automatically when actively graphing.**
5	**Reverse**	Toggles the X axis direction.	Toggling the Reverse button scrolls the graph left to right, or vice versa.

6	**Graph Display Area**	Element graphing area.	The elements are graphically plotted over a value versus time graph.
7	**Graph Legend**	Element Graph Legend	The legend for the elements can be selected to be viewed on/off (default: ON). Also, rolling the mouse over the selected element will highlight that particular plot.
8	**Section Name**	Identifies the Section being polled.	This value is carried over from the Real-Time screen and cannot be modified here.
9	**Channels**	Identifies the elements being polled.	This value is carried over from the Real-Time screen and cannot be modified here.
10	**Description**	Description of element.	An optional custom description for the plot can be added here.
11	**Pen**	Plot color.	Opening the graph has default plot colors, but custom colors can be selected here if desired.
12	**Record**	Graph record check box.	Historical recording of the plot can be selected here (default: ON).
13	**Min Value**	Minimum element value	The minimum element value being plotted as detected by the software. This can be modified if desired.

14	**Max Value**	Maximum element value	The maximum element value being plotted as detected by the software. This can be modified if desired.
15	**Channels / Statistics**	Channels / Statistics tabs	Tabs that toggle between the active graphing channels screen and the statistics screen.

Statistics Screen in Real-Time Graphing

The statistics screen in the Real-Time Trending Graph provides additional flexibility in diagnosis. It is accessed at the bottom left corner of the graph by selecting the "Statistics" tab. See Figure 31.



Section Name	Channels	Value from 1	Value from 2	Delta Value	Time from 1	Time from 2	Delta Value
Section #4	A028 - ANALOG IN 1	8.080000	8.379762	-0.299762	03:51:22.695	03:51:19.570	00:00:03.125
Section #4	A001 - FIL ARM CUR	0.012894	0.012079	0.000815	03:51:22.695	03:51:19.570	00:00:03.125
Section #4	A067 - SPEED REF	8.730000	8.785672	-0.055672	03:51:22.695	03:51:19.570	00:00:03.125

Figure 32 Trending Statistics Screen

Pos	Name	Description
1	**Cursors One and**	These cursors are moved within the plots and are used as the basis for derived data.

	Two	
2	**Value from 1**	This displays the current Y-axis value on cursor one.
3	**Value from 2**	This displays the current Y-axis value on cursor two.
4	**Delta Value**	This displays the current Y-axis value delta between cursors one and two. The delta value is derived from subtracting the values of cursors one and two.
5	**Time from 1**	This displays the current X-axis time stamp from cursor one.
6	**Time from 2**	This displays the current X-axis time stamp from cursor two.
7	**Delta Value**	This displays the current X-axis time stamp delta between cursors one and two. The delta value is derived from subtracting the values of cursors one and two.

Historical Screen in Real-Time Graphing

The historical screen is brought up upon opening a .SWP file that has been previously saved. Once the file is loaded, the user hits the green "Check" button to bring up the graphical data. **Note: Be patient - Very large files where the data is saved for more than 6 hours can take a significant amount of time to load – upwards of 30 minutes!**

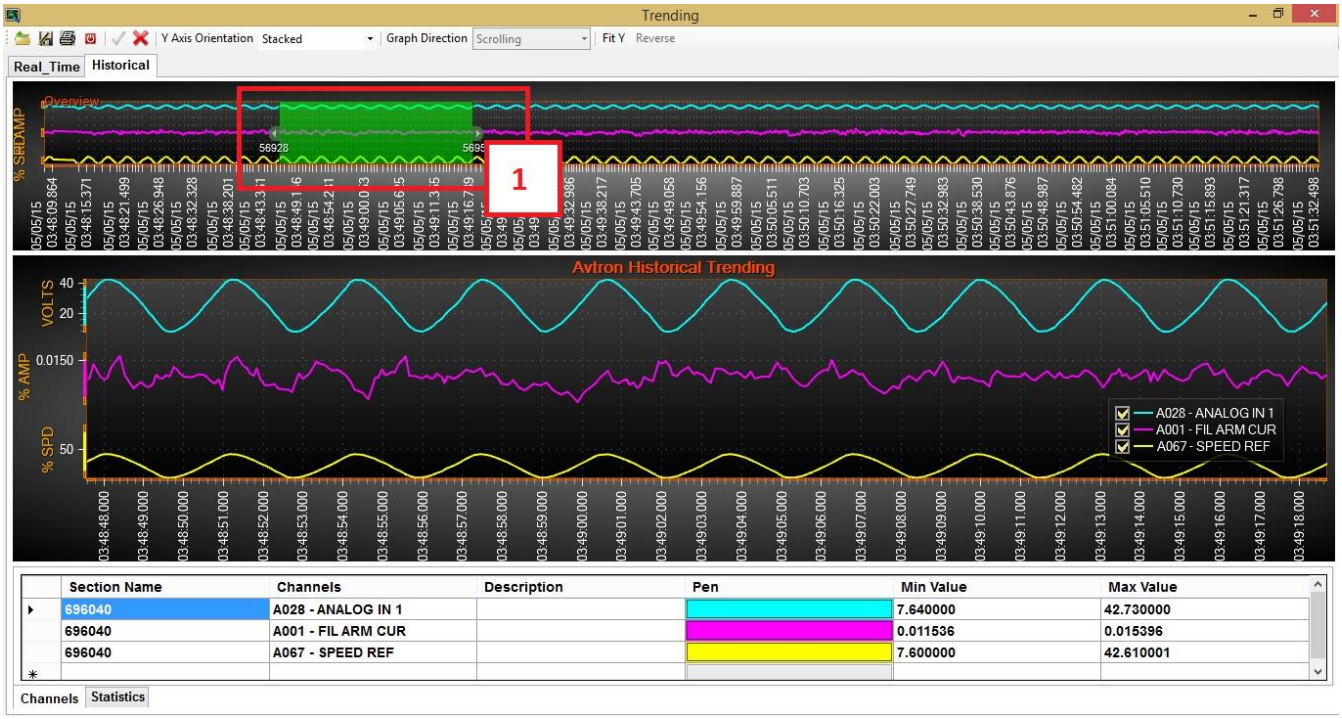


Figure 33 Historical Trending Screen

Pos	Name	Description
1	**Area Selection**	This is an expandable selection area that can scroll across the entire historical graph. The user can zoom in and out by expanding and contracting this selection, which is shown in the graph on the lower half of the screen.

Block Viewer

Block Viewer is a revolutionary way to tune a drive. It gives direct access to the drawing of the drive, where the engineer can modify elements of the drive via the drawing itself. Elements can be both modified and viewed directly in Real-Time. **Note: Some elements will not take effect until the drive is reset. Also, performance is based on drive software and some drives are more responsive than others. It is also advisable that while using Block Viewer that all other open screens are closed (i.e. Maintenance editor, Real-Time trending, etc.). If this is not desired, Block Viewer should be run in manual mode and polled as such. This will increase the software performance of Block Viewer.**

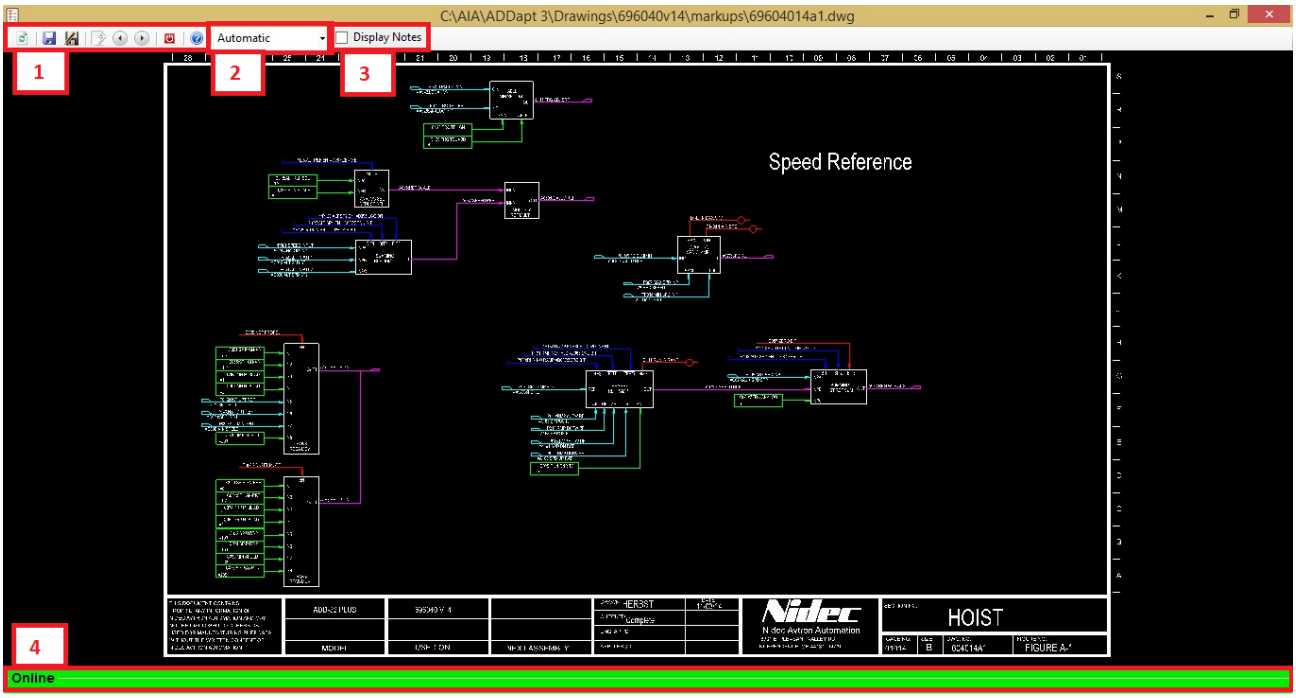


Figure 34 Block Viewer

Blocks on the screen can be zoomed in and out by either using the **middle mouse wheel,** or zoom in by **holding SHIFT + LEFT MOUSE BUTTON** and dragging the box around the selected area to be viewed.

Pos	Name	Description
1	**QAT**	Quick Access Toolbar. From left to right: • **Refresh** drawing. This takes the drawing to manual mode and captures and displays all current values on the drawing **(Note: this is disabled when connected to a drive serially!)**. • **Save** file. This saves the drawing with any notes entered. • **Save As.** This saves the drawing in the following choice of targets: *.ADD, *.DWG, *.DXF, *.PDF (single page), and save all pages in drawing as *.PDF. **(Note: To "save all pages" with the current values as a .PDF, all pages in the drawing must be incremented through from front to back!)** • **Poll.** This singularly polls a selected element manually. • **Decrement** page in drawing. • **Increment** page in drawing. • **Close** the drawing without saving. • **Help** file for Block Viewer. When pressed, this brings up the "Section IV Control Block Description" in Microsoft Compiled Help HTML format.
2	**Auto / Manual Toggle**	This button toggles between **Automatic** and **Manual** polling. In **Automatic** polling, elements selected will poll and refresh automatically. There is no limit to the amount that can be polled simultaneously, but large numbers of elements polling simultaneous

		can affect the performance of the software. In **Manual** polling, elements selected will only poll and refresh when the "**Poll**" button is hit.
3	**Display Notes**	Checking this box will open a small notepad where notes can be added to the drive. Notes appear in the bottom left corner under the drawing. **Note: The drawing must be saved in order for the notes to be saved.**
4	**Status Bar**	Communication status of the drive: • **Green** – Online • **Red** – Offline • **Yellow** – Faulted • **Grey** - Disabled

Editing and Viewing Parameters in Block Viewer

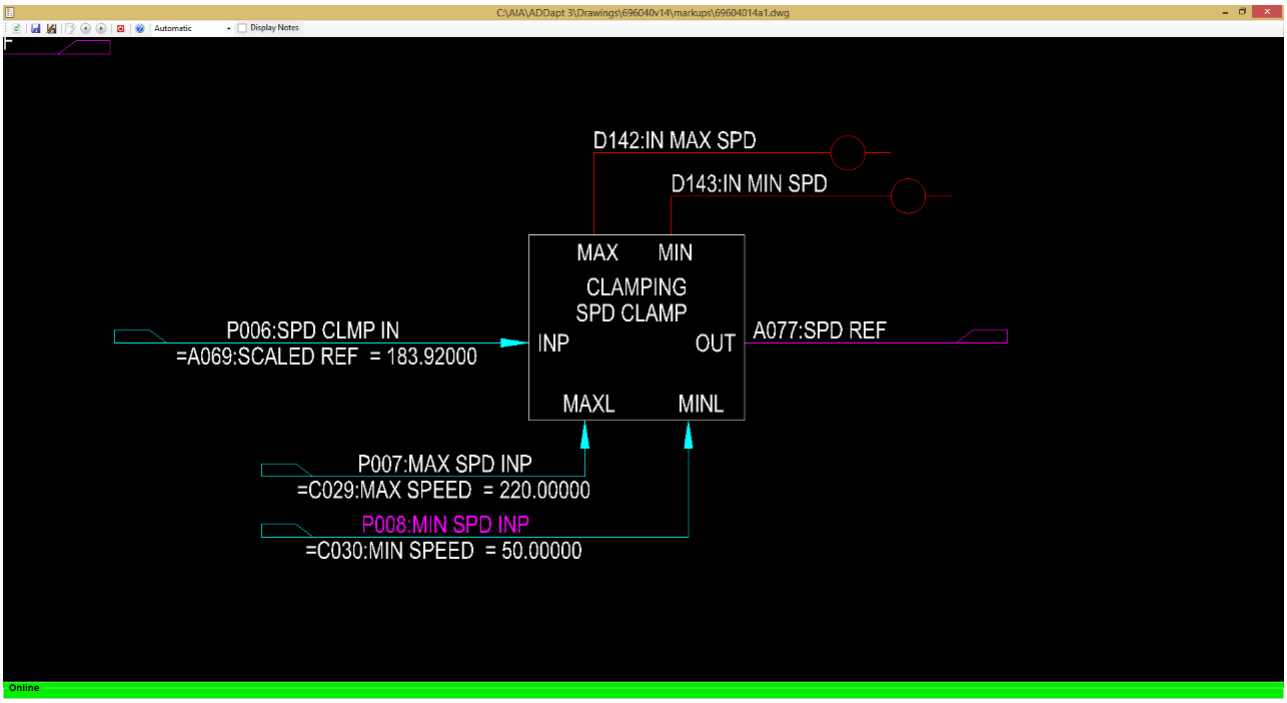


Figure 35 Editing elements in Block Viewer

In the figure above, we see the block for the Speed Clamp setting. In this example, we'll change element **"P008: MIN SPD INP"**.

To **select** the parameter, **left click** anywhere on the "**P008: MIN SPD INP"**. The selected element will turn **PURPLE** and also show the current value. (**Note:** If the drive is being edited offline, the selected elements will turn **YELLOW**). This value will refresh if Block Viewer is set to **AUTOMATIC** polling; otherwise it will show the current value at the time of selection.

To **change** the selected parameter, **right click** anywhere on the "**P008: MIN SPD INP"**. The figure below will pop up in a separate window. If the element is an editable parameter, the check box will be enabled and the selected element can be changed in the drop-down box. Both current and new values will be displayed and the **New Value** can be entered by the user. Changes from the default value will show **"**"** before the

element. **Note that not all values can be changed (i.e. analog and digital values).**

An *.ADD file that is open in the maintenance editor can also be opened in Block Viewer to be viewed, edited, and/or saved like an online drive. **Note: Making changes in the maintenance editor will update values in Block Viewer; however, changes made in Block Viewer will NOT update into the maintenance editor when working directly with an .ADD file.**

When editing a "P"-type parameter, a warning will be shown reminding the user that the change will not take effect until the drive is reset. See Figure 36.

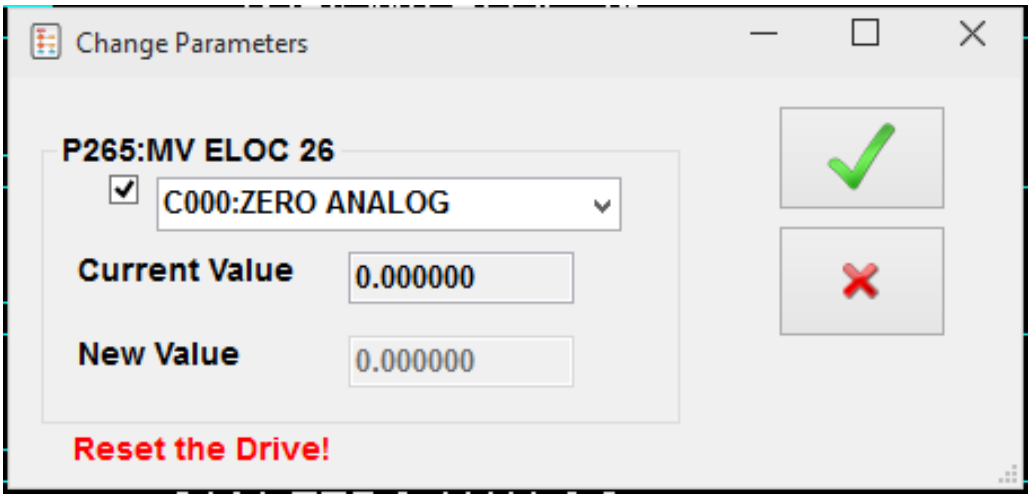


Figure 36 Changing parameters in Block Viewer

Fault FIFO Viewer

Faults and warnings alert the user to the condition of the drive and motor. Faults are conditions that can damage the motor or drive if the condition continues. To protect against damage, the drive opens the DOK (Drive OK) contact which in turn opens the motor contactor. All faults are level sensed and must be rectified before resetting.

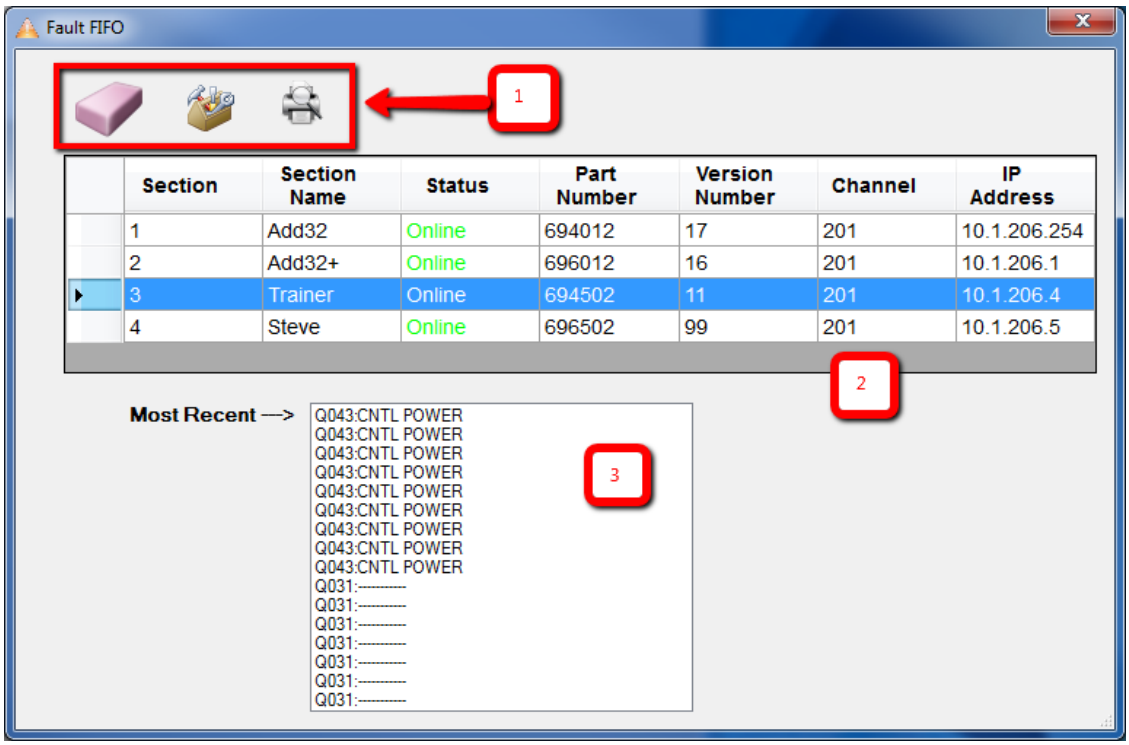


Figure 37 FIFO Viewer

Num	Name	Description
1	**FIFO button Group**	The button group which defines the following functionality. Please **note** only Maintenance level has access to clear both the fault and

		FIFO. ○ Clears the faults ○ Clears the fault FIFO ○ Print Fault FIFO - Includes the drive name, number, date, and an indication of which fault is most recent
2	**Current Driver List**	A list of drives of which to select. To Select the fault, click the row header which is highlighted. The faults will populate in the list (3).
3	**Fault Queue**	ADDAPT 3 can access the fault FIFO of a connected drive, enabling the user to view any drive's FIFO in real time. Select the drive in the list bring up the faults. The most recent fault will be at the top of the displayed list, followed by up to 15 faults in the queue

Utilities

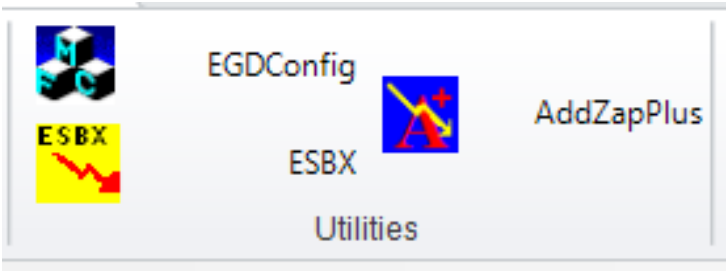


Figure 38 Utilities Selection

These selections execute the appropriate utility.

Icon Name	Description	Comments
ESBX	Invokes the utility to flash the Avtron EXBX(Ethernet) board	This utility is used to flash the ESBX Ethernet board. The board will provide indication of completion of the flashing program by an alternating flash of CR2 and CR3 LED's.
ADDZap Plus	Invokes the utility to flash the ADD32 Plus	This utility is used to flash the ADD32 Plus drive
EGDConfig	Invokes the Ethernet Global Data Configuration utility	It is used to define an EGD message configuration (mainly to PV2.0 and GE systems)

Signal Analyzer

The ADDAPT 3 signal analyzer control function can be used to graphically view the drive's signal analyzer files that were collected using the **SIGNAL ANALYZER CONTROL.** Each drive contains either a four or eight channel high-speed signal analyzer to help isolate process problems from drive or tuning performance. The analyzer can be configured to record four desired variables (they may be digital or analog) and then triggered to save data before and after the next speed upset. Later, the Signal Analyzer Viewer can be used to manipulate and interpret the captured information. **Note: ADDapt32 Compatibility mode must be selected when connected serially to an ADD32+ drive, otherwise you will get a warning and Signal Analyzer will be disabled!**

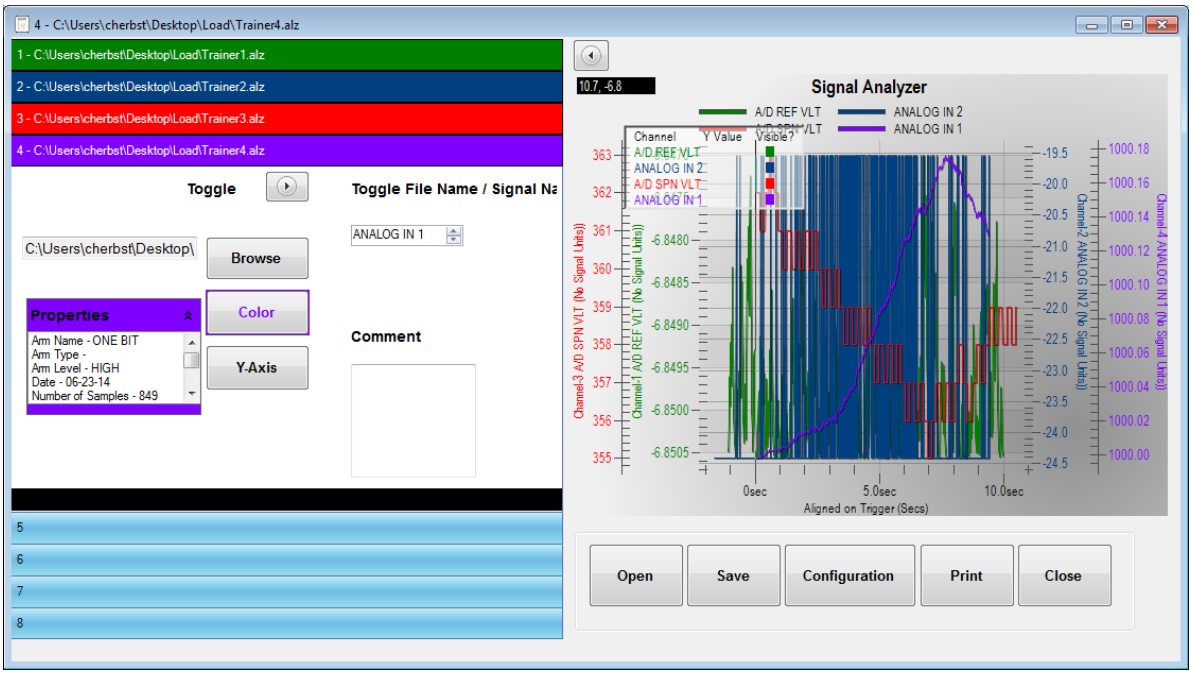


Figure 39 Signal Analyzer Viewer

Pos	Control	Description
1	**Open**	Opens one or more than one Analyzer file. By holding down the [Ctrl] key and clicking on the file, and clicking on different files, this allows for noncontiguous file selection. However, holding down the [Shift] button and selecting the files, allows for contiguous file selection. After the file has loaded, the color portion of the pen control will show the drive's signal name, plot legend, and properties in the accordion. The text in the color portion of the pen control may be changed from the signal name to the file name by RIGHT CLICKING on the COLOR button located on the accordion.
2	**Save**	Prompts the user to Save each of the files that have been changed.
3	**Configuration**	Launches the signal analyzer configuration screen
4	**Pen**	 The Floating Plot window controls whether or not the plot is visible, and outlines the Y coordinate for each of the plots listed.

5	**Print**	Launches the Print Dialog screen
6	**Close**	Close the Signal Analyzer dialog box
7	**Graph Zooming**	To zoom in on an area of a graph, move the windows cursor to one corner of the area that is to be enlarged. Press and hold down the left mouse button. As you move the windows cursor, observe a rectangle to be drawn, one corner is the point at which the left mouse button was pressed and the opposite side being the present windows cursor location.

Security

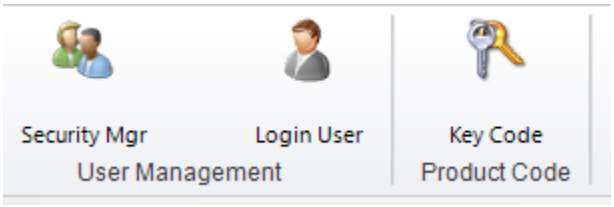


Figure 40 Security Utilities Tab

Icon Name	Description	Comments
Security Mgr.	Invokes the Security Manager.	The security manager can only be accessed by a person with Engineering privileges. The Engineer can define which users have what rights.
Login User	Invokes the dialog to allow a user to log onto ADDapt 3.	This allows the user to log onto ADDapt 3 with his/her credentials
Key Code	Invokes the dialog to update and/or change a product code	This allows the user to activate a product code, in the event that it is expired, or change the product code for more options.

Security Manager

ADDapt 3 makes uses of a convenient, layered system that consists of an Engineer and Operator levels.

ADDapt 3 allows Operator to use basic features while higher level users and administrators have access to more powerful features.

When using the security manager, an access level of Engineer must be employed.

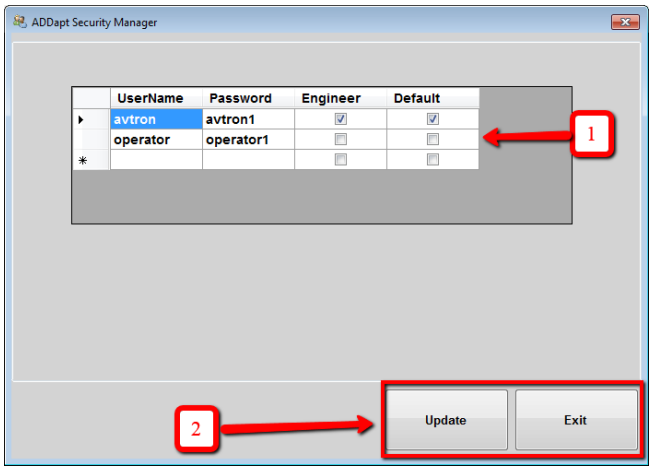


Figure 41 Security Manager

Security Manager

Pos	Topic	Description
1	**Security Data Grid**	It is here that the ADDapt 3 users are maintained. To add a new user, just start typing in the new username and password. By default, any new user is of type operator and is not the default. Check Engineer if this user is to be of type Engineer. Check Default if this will be the default user. To remove a user, select the entire row by clicking the row header.

<table>
<tr><td></td><td></td><td>Hit the Delete key to remove the row. This in turn will remove the user from the security database.

TIP: When adding a new default user, uncheck any other default users. If there are more than one default users defined, ADDapt 3 will default to the first user in the list.

TIP: If no engineers are defined, all users are of type operator.</td></tr>
<tr><td>2</td><td>Buttons</td><td>Security Buttons<table>
<tr><th>Group</th><th>Description</th></tr>
<tr><td>Update</td><td>This becomes active when either a new user is added or changes made to an existing user. When selected, these additions and changes are written to the security database.

Any user records are automatically removed from the security database.</td></tr>
<tr><td>Exit</td><td>Closes this window</td></tr>
</table></td></tr>
</table>

Login User

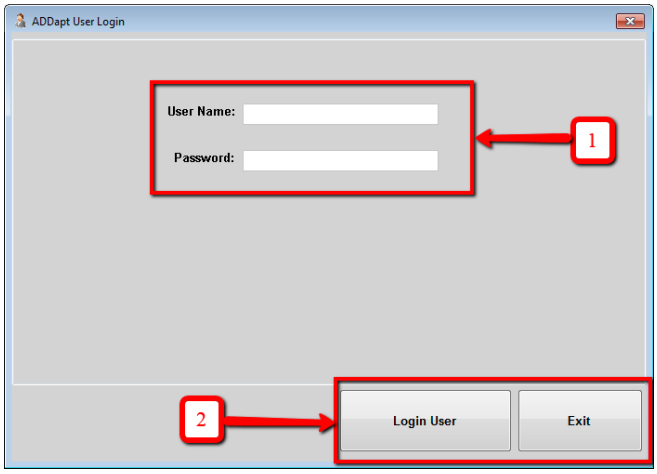


Figure 42 Login ADDapt 3 User

Pos	Topic	Description
1	**Login User**	Specify an already defined username and password. If the user has a new user type (either Engineer or Operator), ADDapt 3 will unlock or lock appropriate buttons based on that user type. If the username or password is incorrect, a message will appear.
2	**Buttons**	**Group** / **Description** **Login User** — Set ADDapt 3 user to the specified username; adjust ADDapt 3 settings to that user's user type (either Engineer or Operator). **Exit** — Closes this window

Product Code

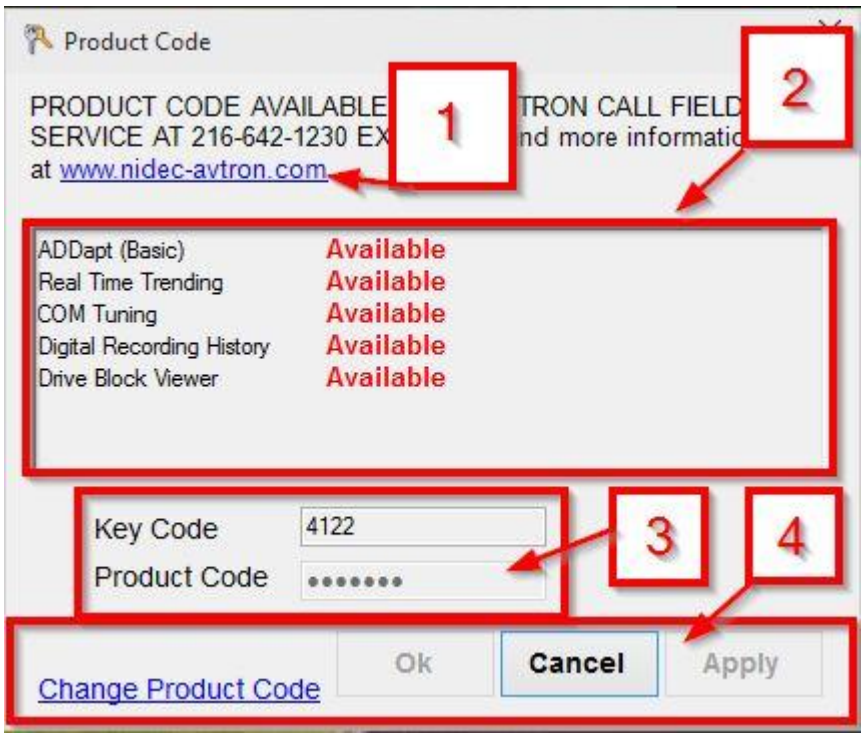


Figure 43 Product Code Screen

Pos	Topic	Description
1	**Help URL**	Click on the link to enter the contact information and/or call for technical support.
2	**Availability**	Lists the availability of the product. For trial licenses, this lists the number of days remaining. When a trial license expires, the number of days is set to 0.
3	**Key Code**	It is here that the product code is entered. Call Nidec-Avtron at

<table>
<tr><td></td><td></td><td>216-642-1230 x1214 to get the product code based upon the key code.</td></tr>
<tr><td>4</td><td>Buttons</td><td>
<table>
<tr><th>Group</th><th>Description</th></tr>
<tr><td>OK</td><td>With a valid product code, the license for ADDapt 3 is activated and the window closes.</td></tr>
<tr><td>Cancel</td><td>Closes this window</td></tr>
<tr><td>Apply</td><td>With a valid product code, the license for ADDapt 3 is activated. This does not close the window.</td></tr>
</table>
</td></tr>
</table>

Options Tab

Figure 44 ADDapt 3 Options Ribbon Tab

Icon Name	Description	Comments
ADDapt 3 Options	Invokes the ADDapt 3 Options dialog box	Invokes the options used for ADDapt 3 such as directory settings, system wide logging, company name changing, and status bar visibility.
Ping	Invokes the Ping function	Pings either an individual address or the entire subnet. For a **subnet**, leave the last octet blank. For an IP address, enter in the IP address.
Options	Invokes a Network Options Dialog box.	Allows the user to analyze each network (wired, wireless, Bluetooth) connection and displays the IP address, subnet, and gateway for each of the interface.
Copy Files	Copies selected file extensions	The user selects a file extension on what to copy. Those files are then copied into the respected directory.

	from the ADDapt2000 directory into the ADDapt 3 directory and/or copies drawings to the default drawing directory in ADDapt 3	
Add32 COM Tuning	Invokes the Add32 Com Tuning dialog box	Sets the number of communications retries and delay interval (in milliseconds).

ADDapt 3 Options

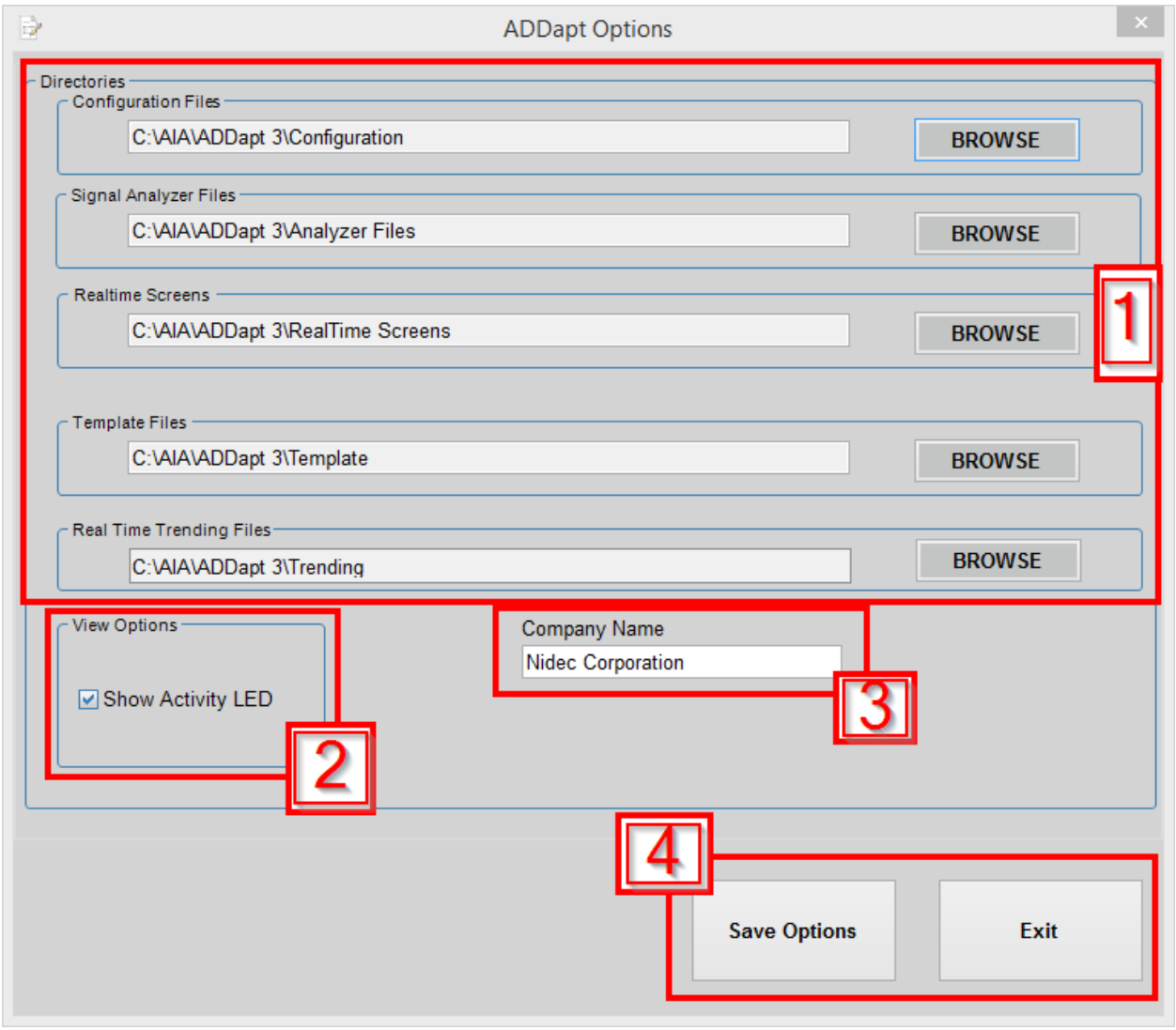


Figure 45 ADDapt 3 Options Screen

It is here that the various features of ADDapt 3 are configured as described below.

The ADDapt 3 Options window is selected from the Options Tab. It is here that the default directories are viewed and set.

<table>
<tr><th>Pos</th><th>Name</th><th>Description</th></tr>
<tr><td>1</td><td>Default Directories</td><td>The default directories may be viewed or set by selecting Browse to browse to the desired directory.
<table>
<tr><th>Directory</th><th>File Type</th><th>Description</th></tr>
<tr><td>System Configuration Files</td><td>*.cfg</td><td>List of configured drives</td></tr>
<tr><td>System Configuration Files</td><td>filename.add</td><td>Drive Cal/Cfg File</td></tr>
<tr><td>System Configuration Files</td><td>69xxxxyy.add</td><td>Base Cal/Cfg File where xxxx is the Software Part Number and yy is the Version Number</td></tr>
<tr><td>RealTime Files</td><td>filename.art</td><td>ADDapt2000 Realtime files created from ADDapt2000 containing a screen's configured analog and digital signals</td></tr>
<tr><td>Real-Time Files</td><td>filename.xml</td><td>ADDapt 3 Realtime files created from ADDapt 3
containing a screen's</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td></td><td>configured analog and digital signals</td></tr>
<tr><td>Signal Analyzer Files</td><td>filename.alz</td><td>Signal Analyzer file created from an analyzer channel</td></tr>
<tr><td>Template Files</td><td>69xxxxyy.tem</td><td>Template File where xxxx is the Software Part Number and yy is the Version Number</td></tr>
<tr><td>Real-Time Trending Files</td><td>Filename.swp

Filename.csv</td><td>ADDapt 3 trending files created from the real-time trending graph. The can be saved in either a historical trending .SWP file for opening in ADDapt 3, or to a .CSV file for opening in Microsoft Excel.</td></tr>
</table>
</td></tr>
<tr><td>2</td><td>View Options</td><td>
<table>
<tr><th>Option</th><th>Description</th></tr>
<tr><td>Show Activity LED</td><td>Enable Activity LED</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>Company Name</td><td>This company running this version of ADDapt 3. This appears in the status bar</td></tr>
</table>

4	**Buttons**	**Button**	**Description**
		Save Options	Saves the options writing them to a settings file
		Exit	Closes this window

Ping Network

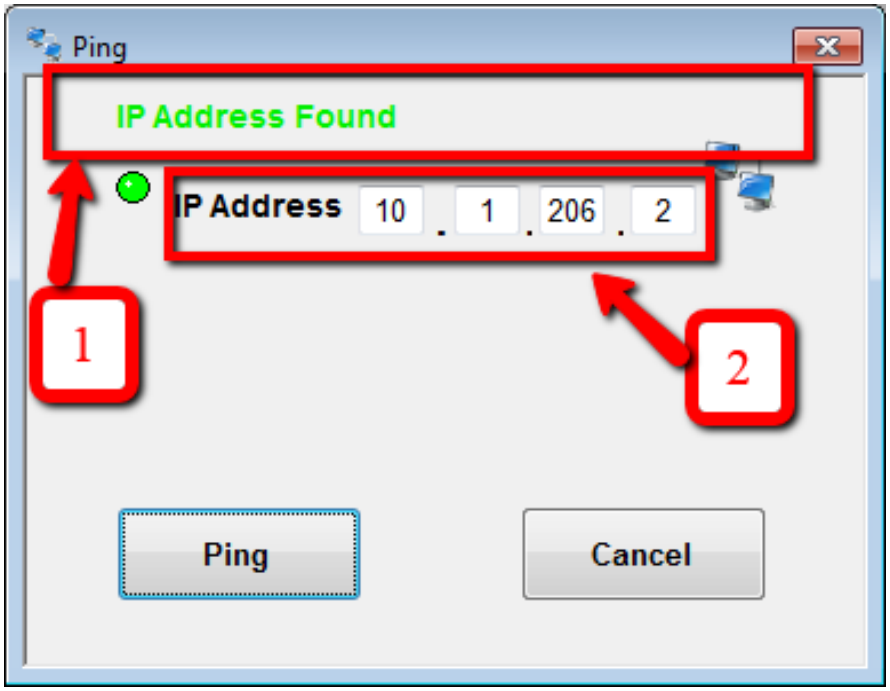
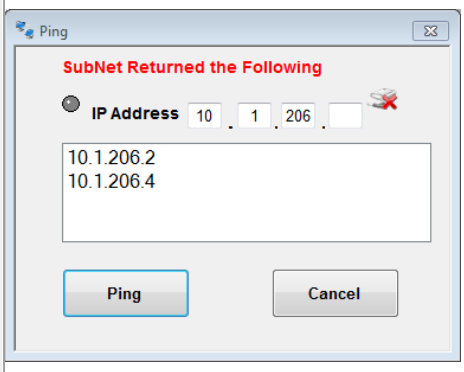


Figure 46 Ping Network Screen

Pos	Name	Description
1	**Ping Status**	**Status** / **Description** **IP Address Found** — The IP Address was found on the network **IP Address Not** — The IP Address was not found on the

		Found — network
		Pinging Subnet — A status to state that the current subnet is being pinged.
		Subnet returned the following — This is the list of subnet IP Addresses that have been returned
		 — This icon states that there is a drive associated with the IP Address.
		 — This icon states that there is **NOT** a drive associated with the IP Address
		 — The IP Address was found on the network.
		 — The IP Address was not found on the network.
2	**IP Address**	Enter in the IP Address. When searching for a **subnet**, leave the last octet blank. A list of IP Addresses found on the subnet is returned. 

3	**Buttons**	**Button**	**Description**
		Ping	Pings the network.
		Cancel	Closes this window

Network Options

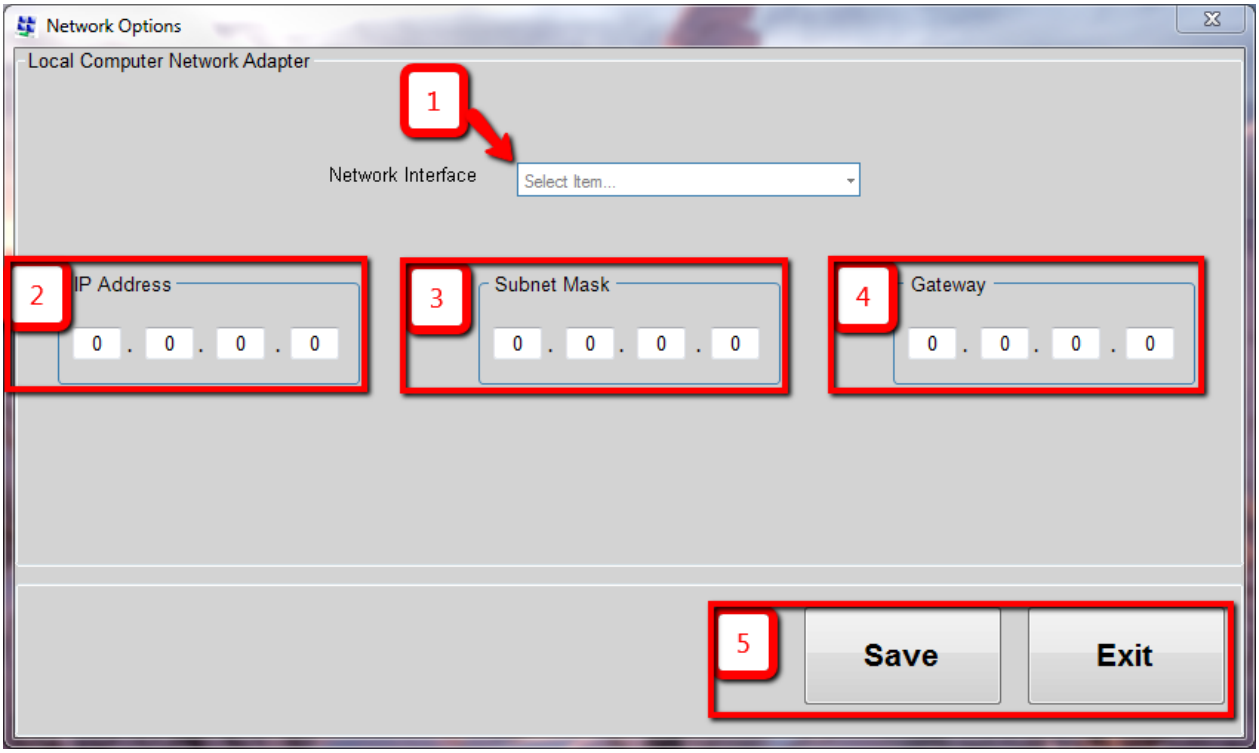


Figure 47 Network Options

Pos	Topic	Description
1	**Network Interface**	A list of every network adapter present on your computer.
2	**IP Address**	The IP Address for each of the network adapters present on your computer.

3	**Subnet Mask**	The subnet mask for each of the network adapters present on your computer.
4	**Gateway**	The gateway for each of the network adapters present on your computer.
5	**Save / Exit**	**SAVE –** Save changes and exit **EXIT –** Exit without saving changes

Copy Files Import

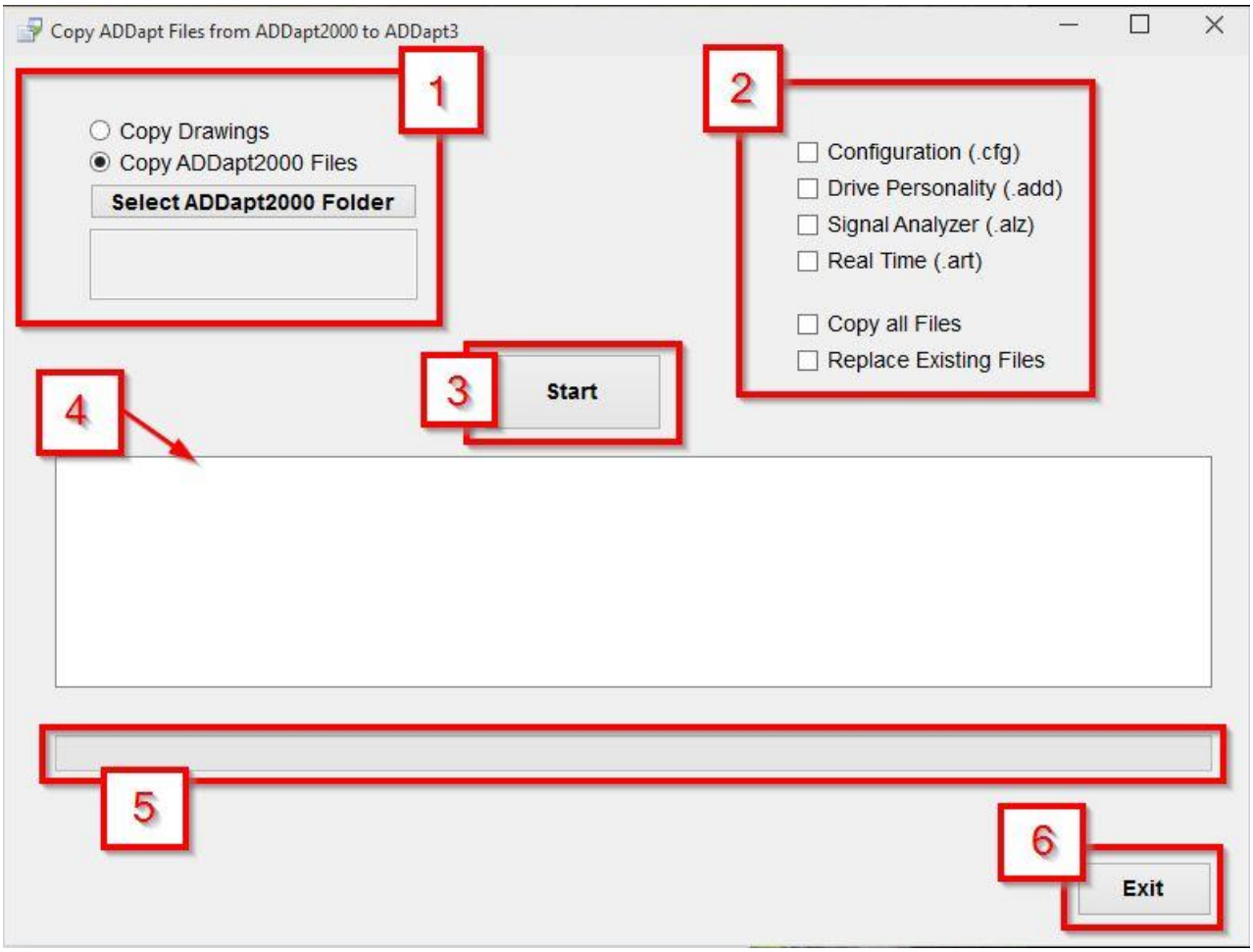


Figure 48a Copy ADDapt Files from ADDapt2000 to ADDapt 3

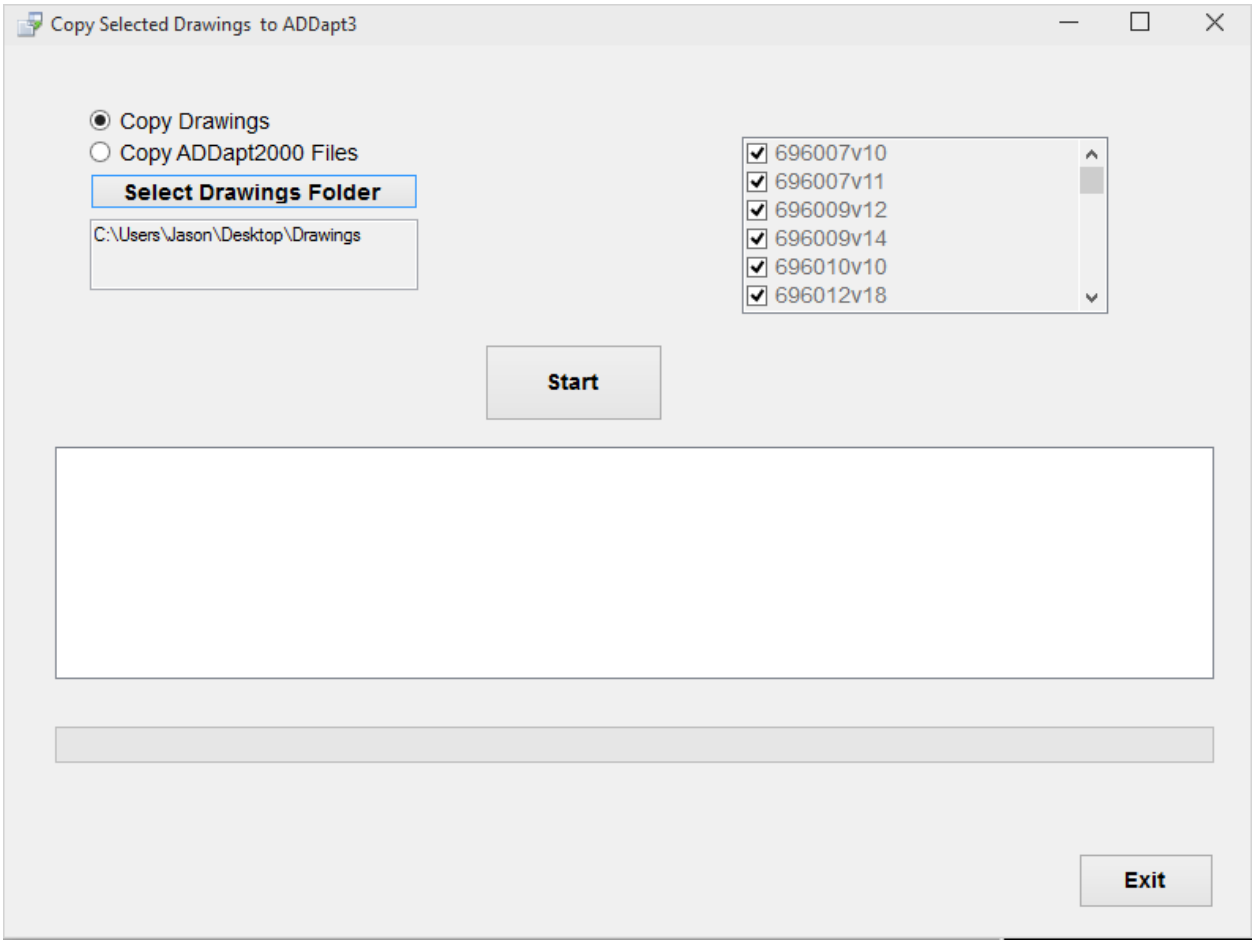


Figure 48b Copy Blockviewer Drawings to ADDapt 3

Pos	Topic	Description
1	**Select ADDapt 2000 Files or Copy Drawings**	• Displays a dialog box which allows selection of the source (ADDapt2000) main folder. The default folders in the ADDapt 3 are used as target locations. *(See Figure 48a)* • Select the location of the folder which contains the drawings that are desired to be imported. Once this is done and "Start" is pressed, the rest of the process is automated. *(See Figure 48b for screenshot)*

<table>
<tr><td></td><td></td><td><u>See Figure 48c below for typical use case</u>.</td></tr>
<tr><td>2</td><td>Check Boxes (Does not apply to "Copy Drawings" process)</td><td>
<table>
<tr><th>Selection</th><th>Description</th></tr>
<tr><td>Configuration (.cfg)</td><td>Copies the configuration files stored in the ADDapt2000 folder to ADDapt 3 Default folder. When selected, it copies all sub directories.</td></tr>
<tr><td>Drive Personality (.add)</td><td>Copies the Add files stored in the ADDapt2000 folder to ADDapt 3 Default folder. When selected, it copies all sub directories.</td></tr>
<tr><td>Signal Analyzer (.alz)</td><td>Copies the analyzer files stored in the ADDapt2000 folder to ADDapt 3 Default folder. When selected, it copies all sub directories.</td></tr>
<tr><td>Real-time (.art)</td><td>Copies the Real-Time files stored in the ADDapt2000 folder to ADDapt 3 Default folder. When selected, it copies all sub directories.</td></tr>
<tr><td>Copy all</td><td>Copies the Configuration, Personality, Signal Analyzer and Real-Time files stored in the ADDapt2000 folder to ADDapt 3 Default folder. By default, all of the file types are selected.</td></tr>
</table>
</td></tr>
</table>

		Replace Existing Files — Replaces the Configuration, Personality, Signal Analyzer and Real-Time files stored in the ADDapt 3 Default folder(s). The algorithm identifies the match and once found it's copied to the new location and overwrites the file if there is a match.
3	**Start Button**	After a directory and selection has been made, Click to start the copy process.
4	**Copy Display**	This section displays the files as they are being copied from one location to another.
5	**Progress Bar**	The progress of the files being copied from the source folder to the target.
6	**Exit**	Closes the copy files window.

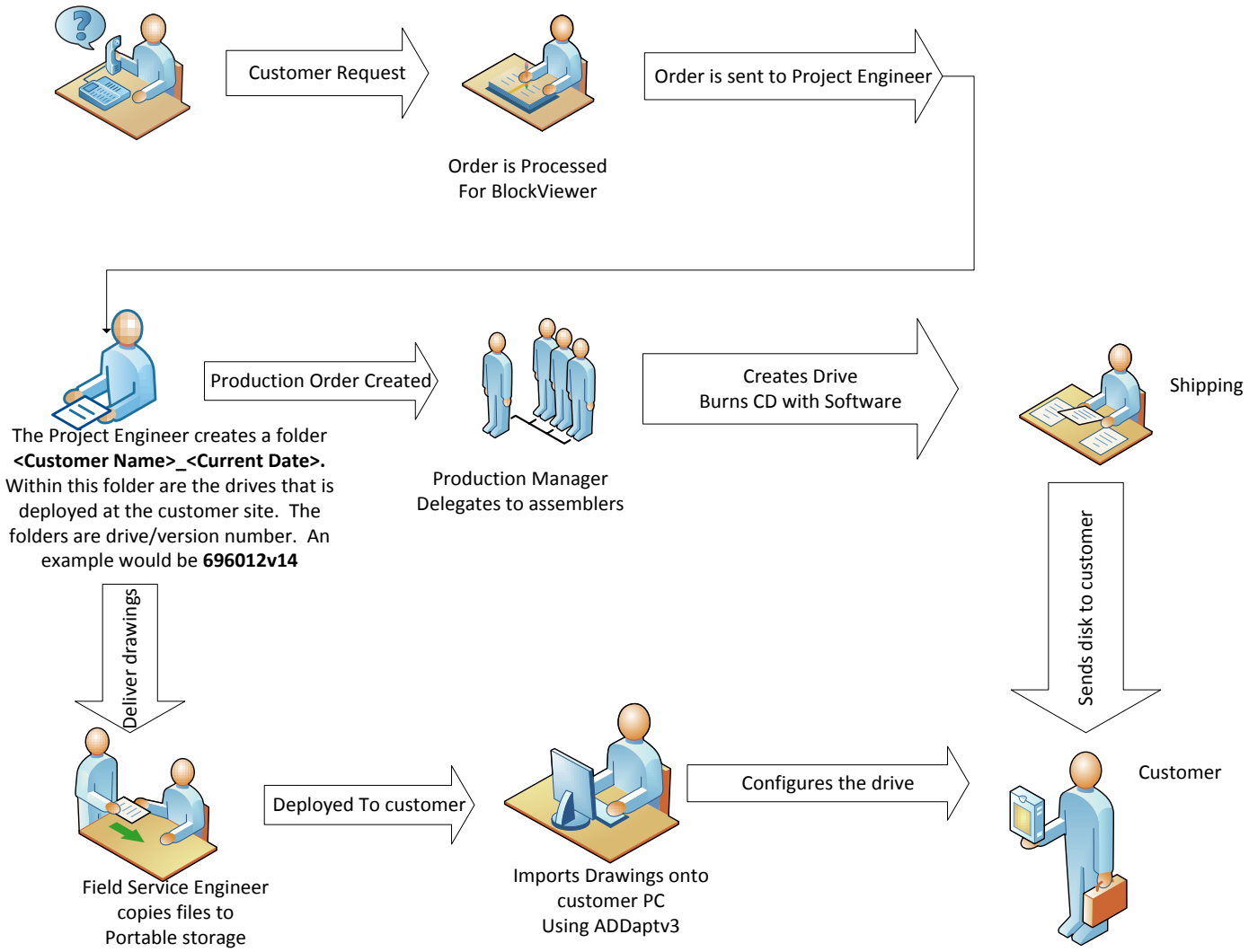


Figure 48c Use case for importing drawings

Add32 Com Tuning

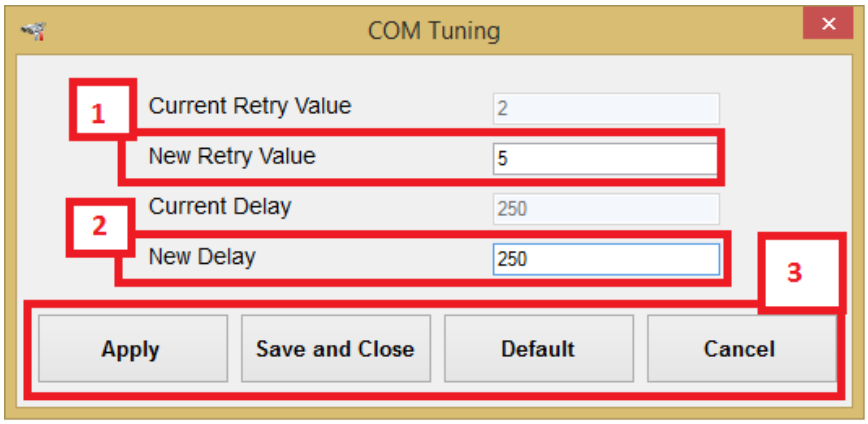


Figure 49 COM Tuning

Pos	Topic	Description
1	**New Retry Values**	If the drive communication returns false, this number entered is the number of retries to communicate to the drive.
2	**New Delay**	The delay, in milliseconds, between retries.
3	**Buttons**	**Apply** — Save changes without exiting **Save and Close** — Save changes and exit **Default** — Apply the default settings **Cancel** — Cancel changes and exit

Help

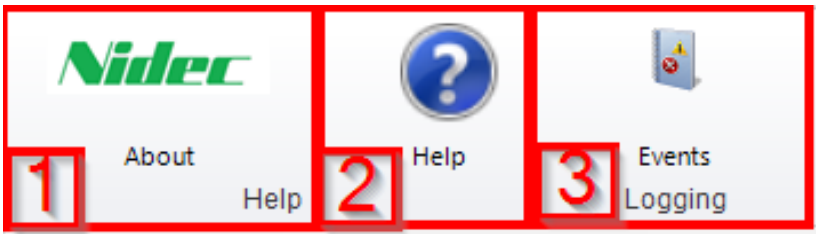
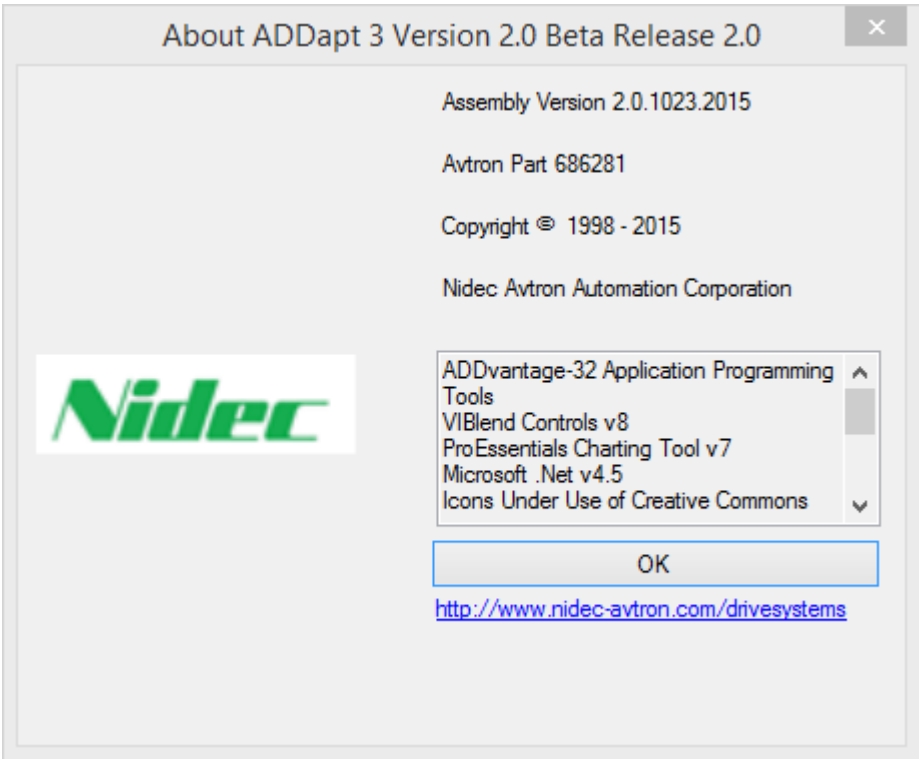
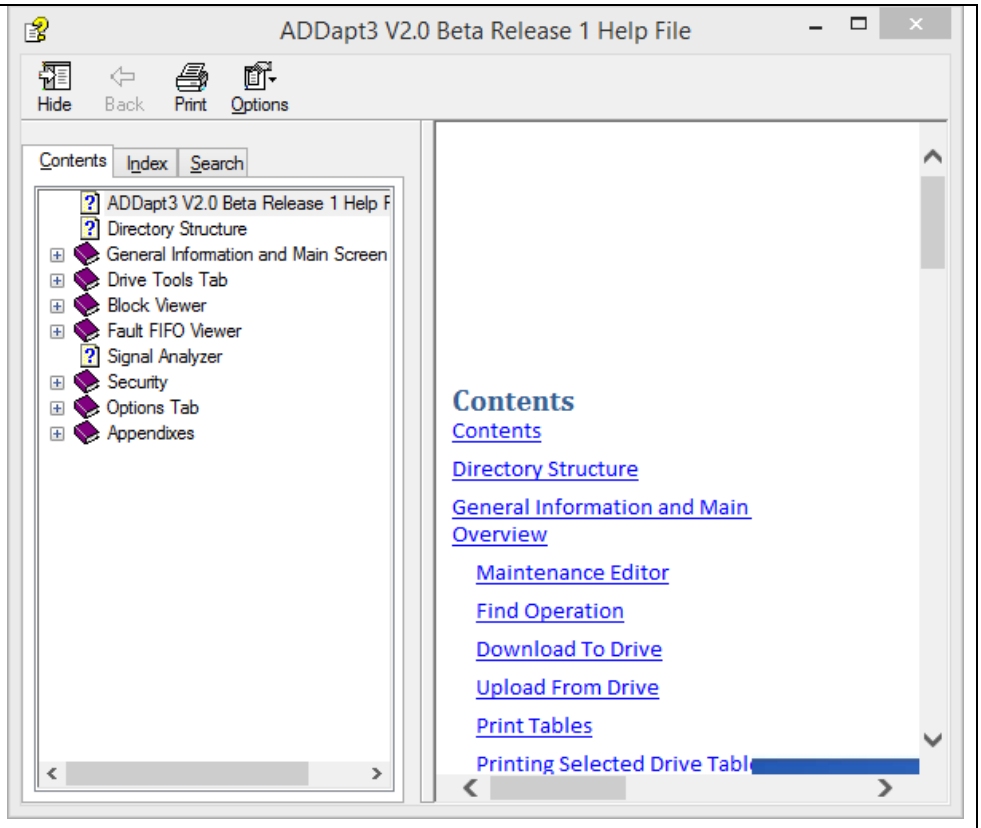


Figure 50 Help Ribbon

Pos	Topic	Description
1	**About**	Brings up a floating window displaying software version and manifest information, as well as a link to the Nidec-Avtron website. 
2	**Help**	Brings up the Help file as a Microsoft Compiled HTML file

		
3	**Events Logging**	Refer to the next section on "Event Viewer"

Event Viewer

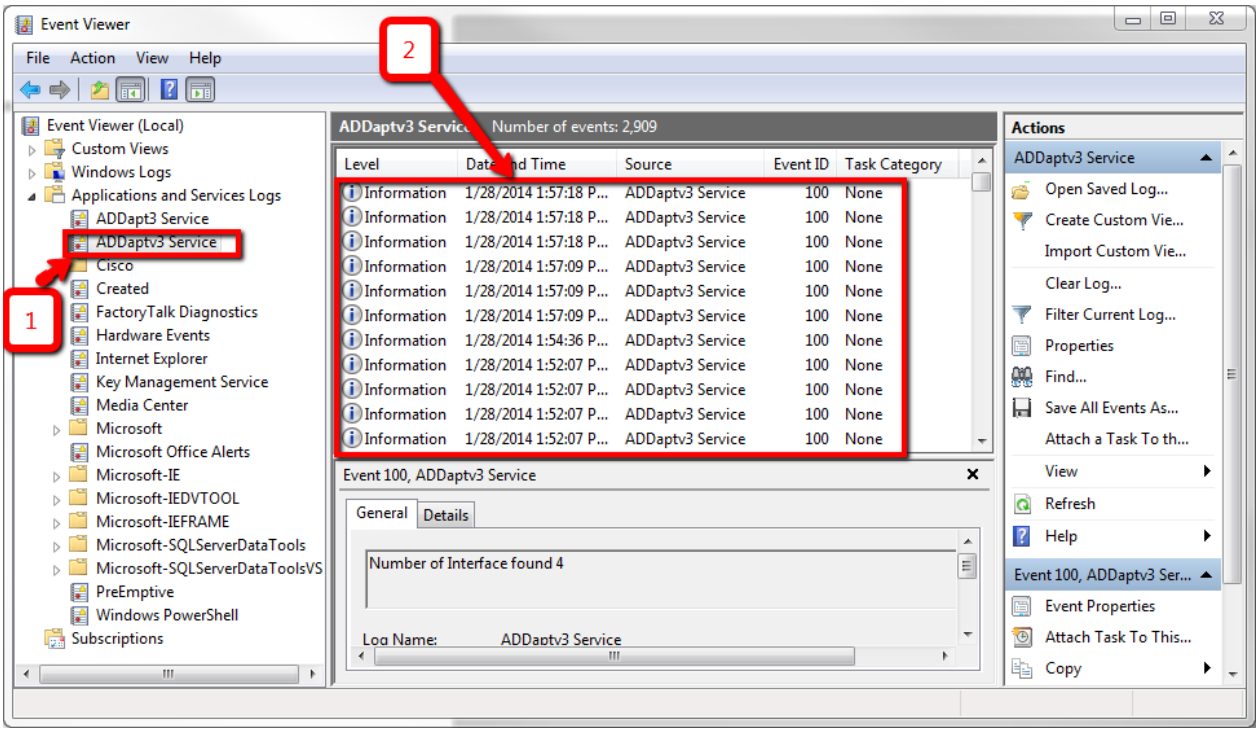


Figure 51 Event Viewer

Pos	Topic	Description
1	**ADDaptv3 Service**	After the menu selection is pressed, the Event Viewer screen will appear. Please Note: If the drilldown button does not appear right away, press the refresh [F5] button a few times. Once it appears, click on **ADDaptv3 Service**. The middle screen displays all of the events that have happened with ADDaptv3.
2	**ADDaptv3 Number of Events**	This section lists all of the events that have happened during ADDapt.

Appendixes

Appendix A: ADDapt3 and ADDapt2000 co-existence

When installing ADDapt3 on the same computer as ADDapt2000, realize that both versions of ADDapt use their own COM Server, Add32.exe. In ADDapt3, this file is located in C:\AIA\ADDapt3\bin. These COM Servers are NOT compatible.

A message will display if the proper ADD32.exe COM Server is not correctly registered.

Register ADDapt2000 COM Server

For ADDapt2000 to use its own COM Server, then it must be registered with the Windows OS so that it knows which version of the COM Server to use. To register the ADDapt2000 COM server, follow these steps:

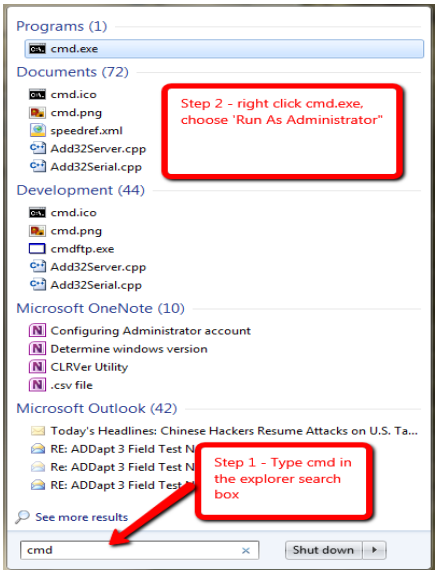


Figure 52 Start

- Start the command prompt as Administrative
- Change directory to ADDapt2000. In this example, the directory is set to ADDapt2000 v13

- Issue the follow command: **add32.exe /regserver**

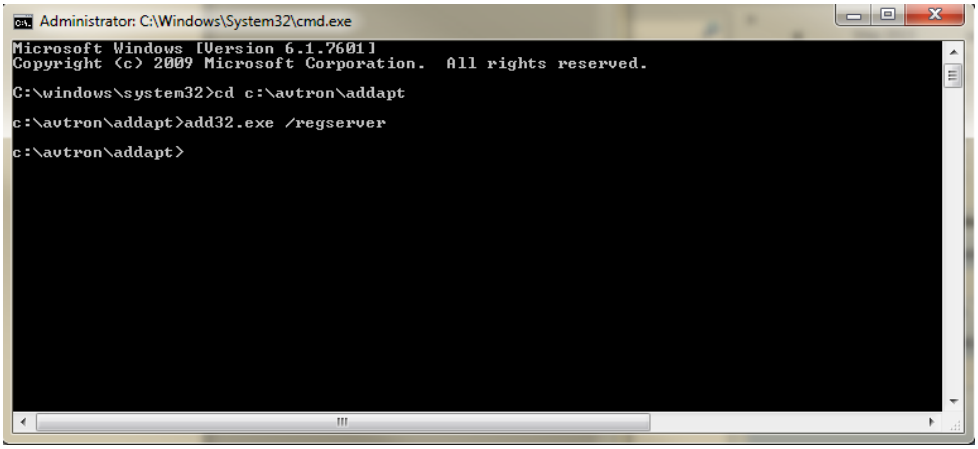


Figure 53 DOS Window

Register ADDapt 3 COM Server

Just like ADDapt2000, ADDapt3 must use its own COM Server. To register the ADDapt 3 COM Server, run the batch procedure **Register_Add32.bat** by double-clicking it from Windows explorer. This is found in the directory *C:|AIA|ADDapt 3|bin*.

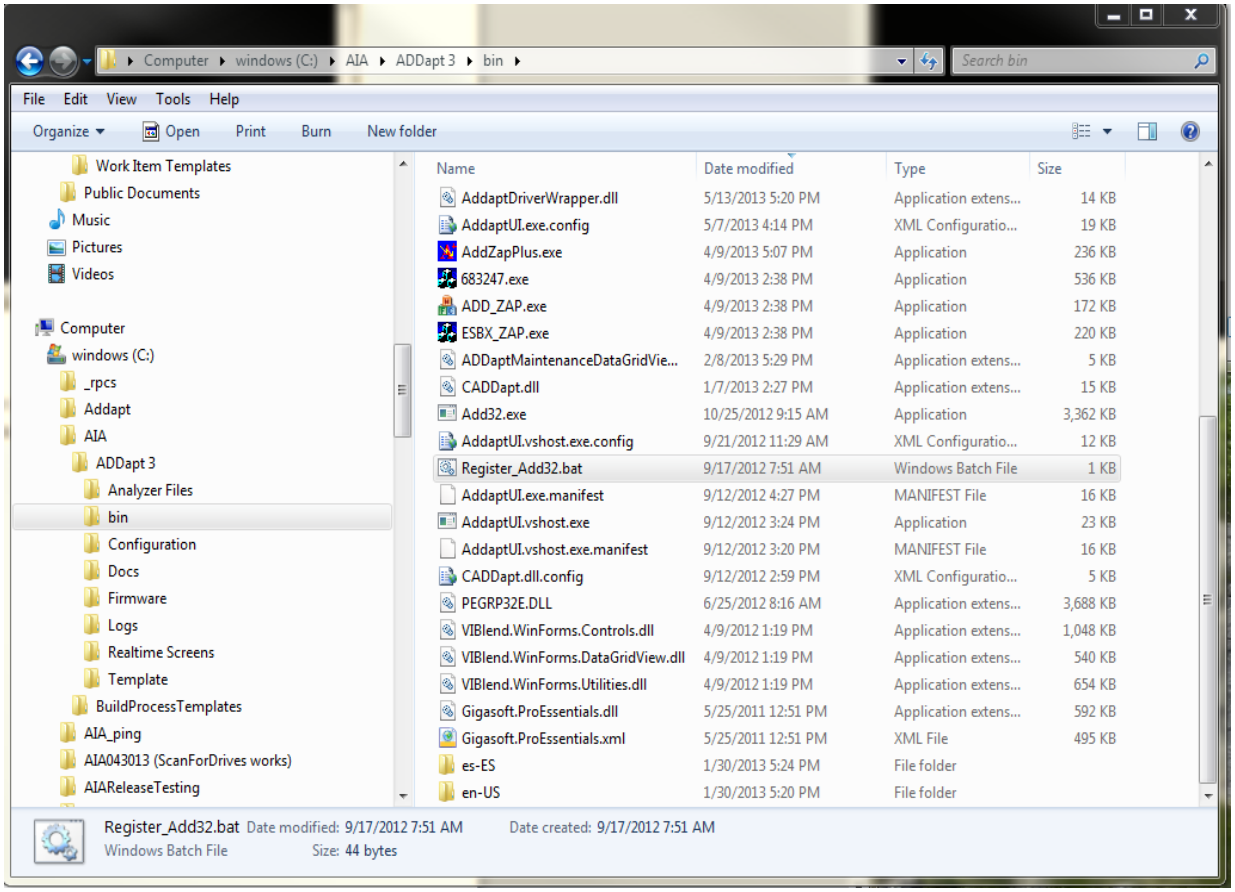


Figure 54 ADDapt 3 Default Bin Folder

Once either the ADDapt 3 or ADDapt2000 COM Server is register, start ADDapt 3. With ADDapt 3 running, start task manager to verify that the version of the COM Server just registered is really being used.

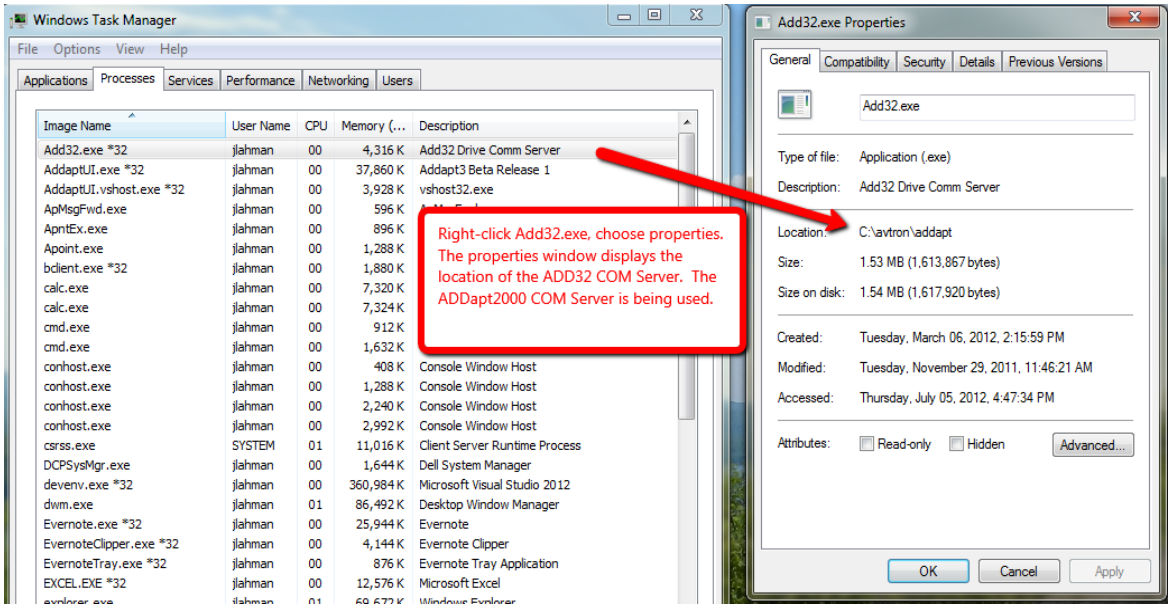


Figure 55 Windows Task Manager

Appendix B: Notes on Versioning

Software versioning is the process of assigning version numbers to unique states of computer software that can be tracked to the build of the application.

Using assembly versions effectively enables various team members to identify deployed assemblies and helps troubleshoot problems that may occur in a particular environment (e.g. Development, Test, or Production).

ADDapt 3 uses a four-part assembly string with this format:
<major version><minor version><build number><revision>
For example, ADDapt 3 v1.1 would indicate this is the 1st major version and this is the 1st version to the public.

Major Version

To indicate that this a major release of the product indicating significant jumps in functionality. This version also indicates that it is not backward compatible with any previous versions.

Minor Version

This is incremented for every version that goes public. It indicates that significant bug fixes have been made or minor features have been added.

Build Number

These increments every time a development milestone is met releasing the product Field Service for testing. This resets to 0 when the product goes public

Revision

This is indicative of minor bug fixes or hot fixes for this build.

Appendix C: Using Custom DPI

For those times when the standard screen resolution is not enough and you require a larger scale, use the custom DPI setting tool found in the Display screen. To find the Display screen, type *display* in the windows search box and choose *Display* in the Control Panel section of the results.

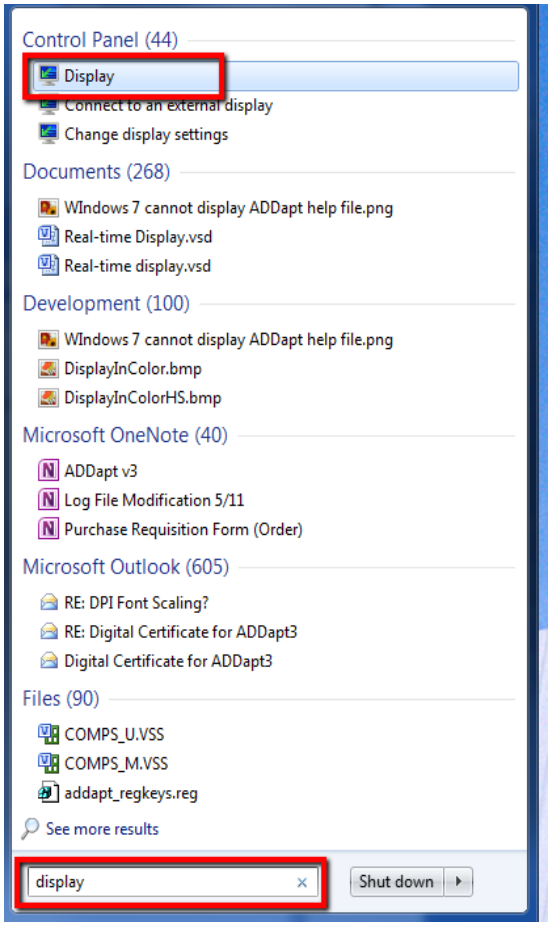


Figure 56 Windows 7 Start Menu

Once you see the Display screen, you will notice the default setting is set at Smaller - 100%. To make the text and forms larger, choose *Set custom text size (DPI)*. For ADDapt 3 purposes do not choose any of the pre-selected custom sizes such as 125% or 150%; they will make the text and images run together.

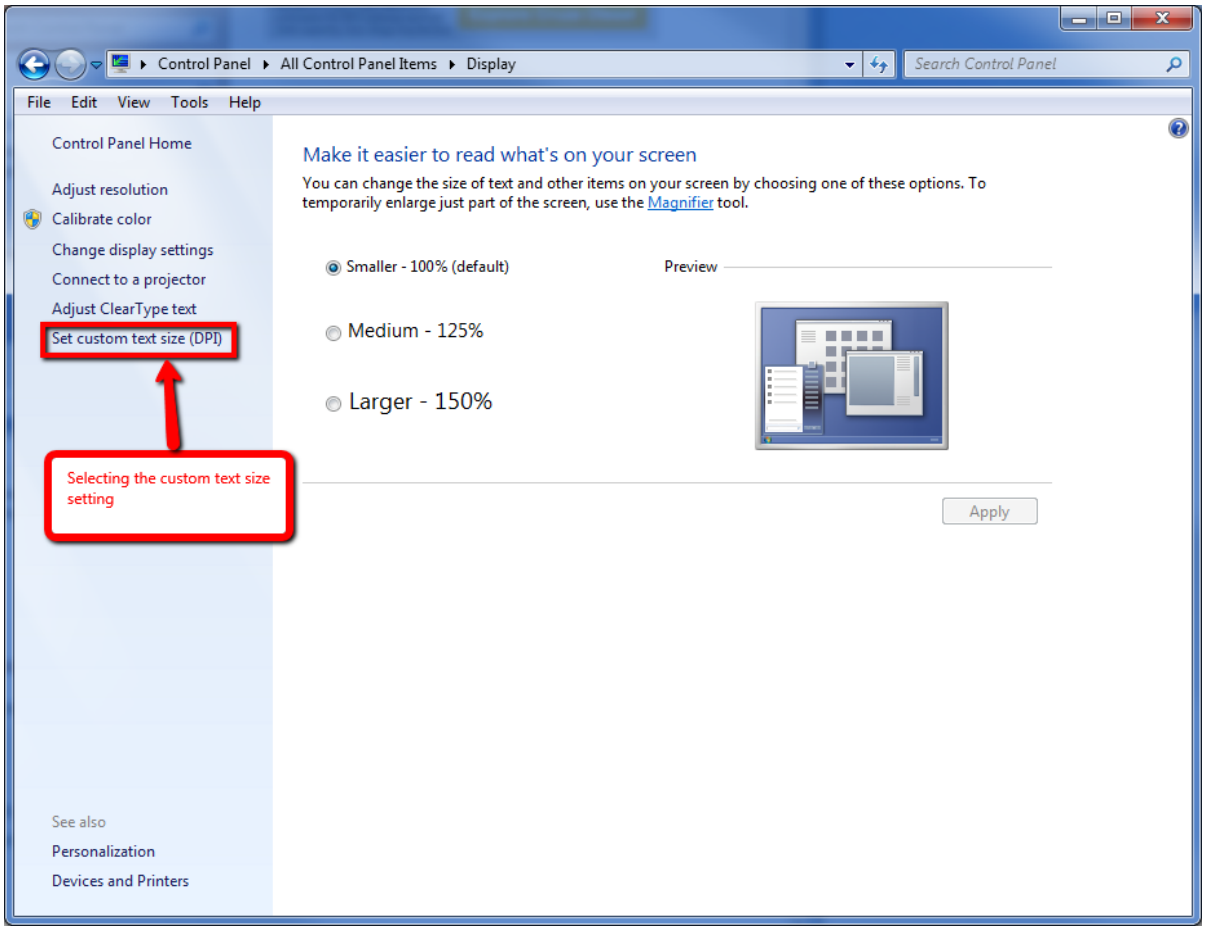


Figure 57 Custom DPI Setting screen

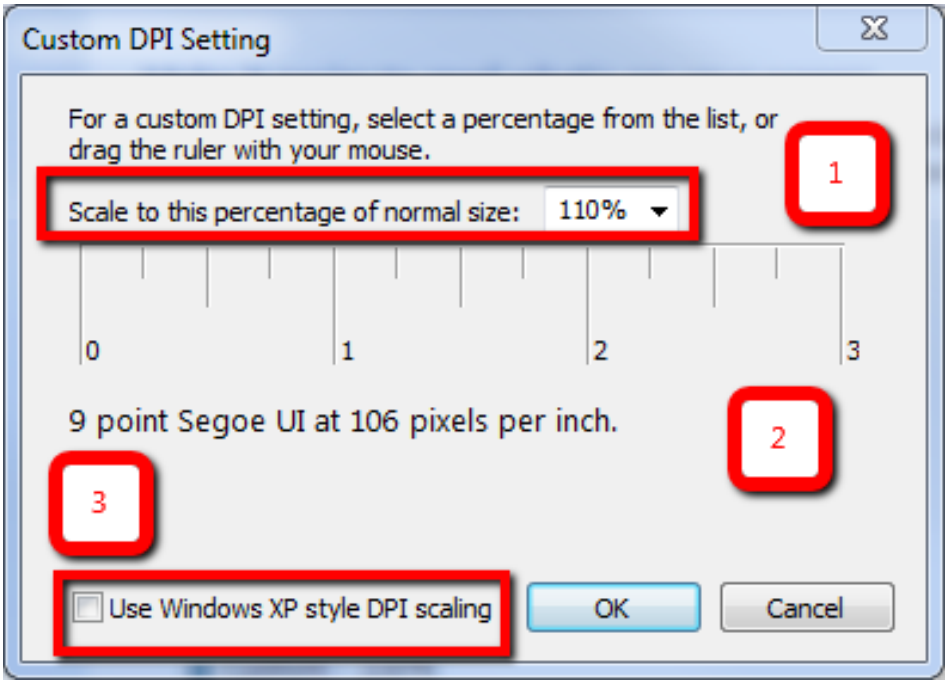


Figure 58 Custom DPI Settings

Click OK to create the custom DPI which will appear on the Display screen.

Pos	Name	Description
1	**Scale of normal size**	Either chose a preset percentage from the drop-down box or type in a custom size between 100% and 500%. In this example, a custom size of 110% is entered.
2	**Ruler**	Another method to change the font size is to click and drag the ruler to increase the DPI to your desired percentage
3	**Windows XP DPI style**	This must be unchecked to enable the windows 7 and windows 8 virtual DPI. If the text become too blurry (may occur when DPI is set at 144% or higher), then check this box.

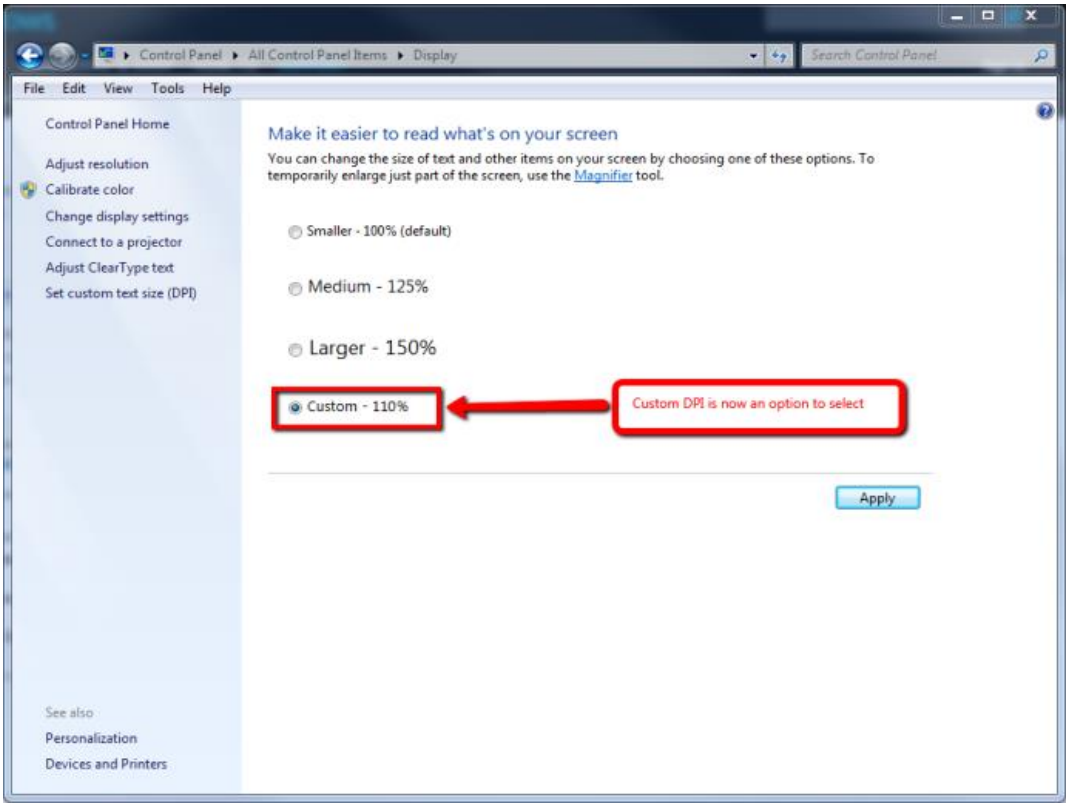


Figure 59 Display Settings

To see the changes made, close all the programs and log off Windows. The change will take effect the next time you log in.

Appendix D: Using ADDapt 3 with RSLinx

A common problem with ADDapt 3 is a conflict with other programs using the same listening port.
If another service as e.g. the Rockwell RSLinx service starts before ADDapt 3, this third party service will already be listening on the port before ADDapt 3.

You have to stop the RSLinx service before executing the ADDapt 3 application. All ADDapt 3 functionality will be disabled if the RSLinx service is running before the program is started!

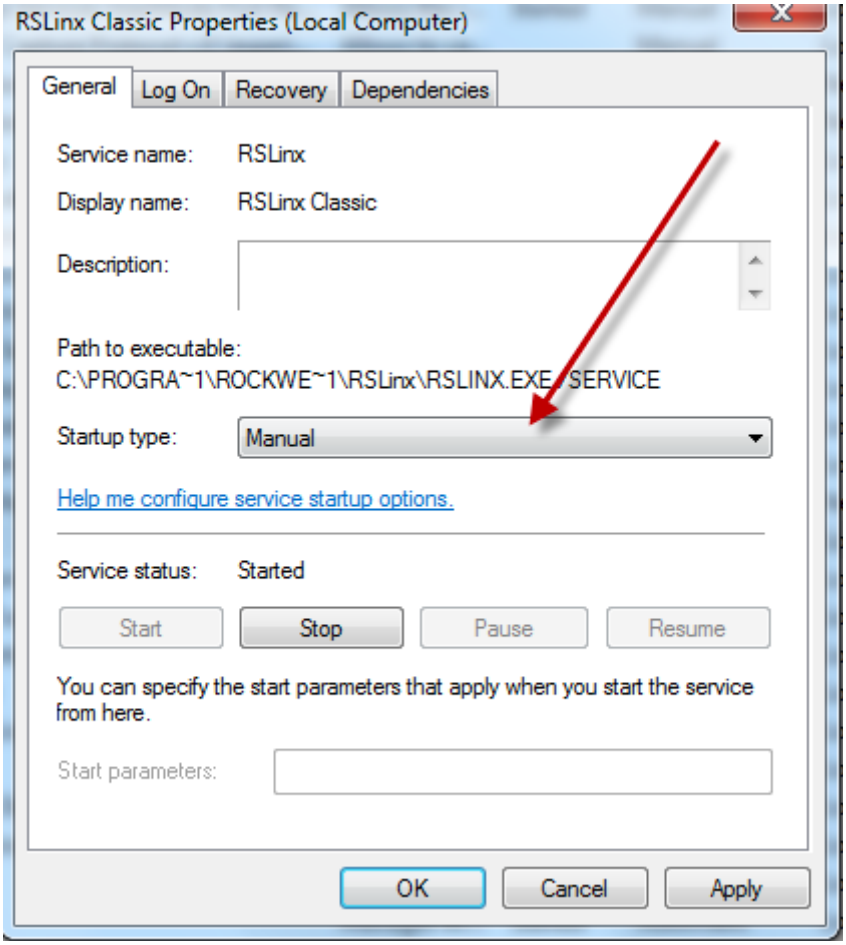


Figure 60 RSLinx Properties

Appendix E: Optimization Tips

There are a few ways to improve the performance of ADDapt 3. Keeping in mind some of these steps can significantly improve the efficiency of the software.

Tip#1- Offline Drives:

Do not work with an offline drive in the maintenance tree. The software will continually try to communicate with this offline drive and cause communication delays. If you have a known offline drive in the tree, it is best to simply disable or delete it.

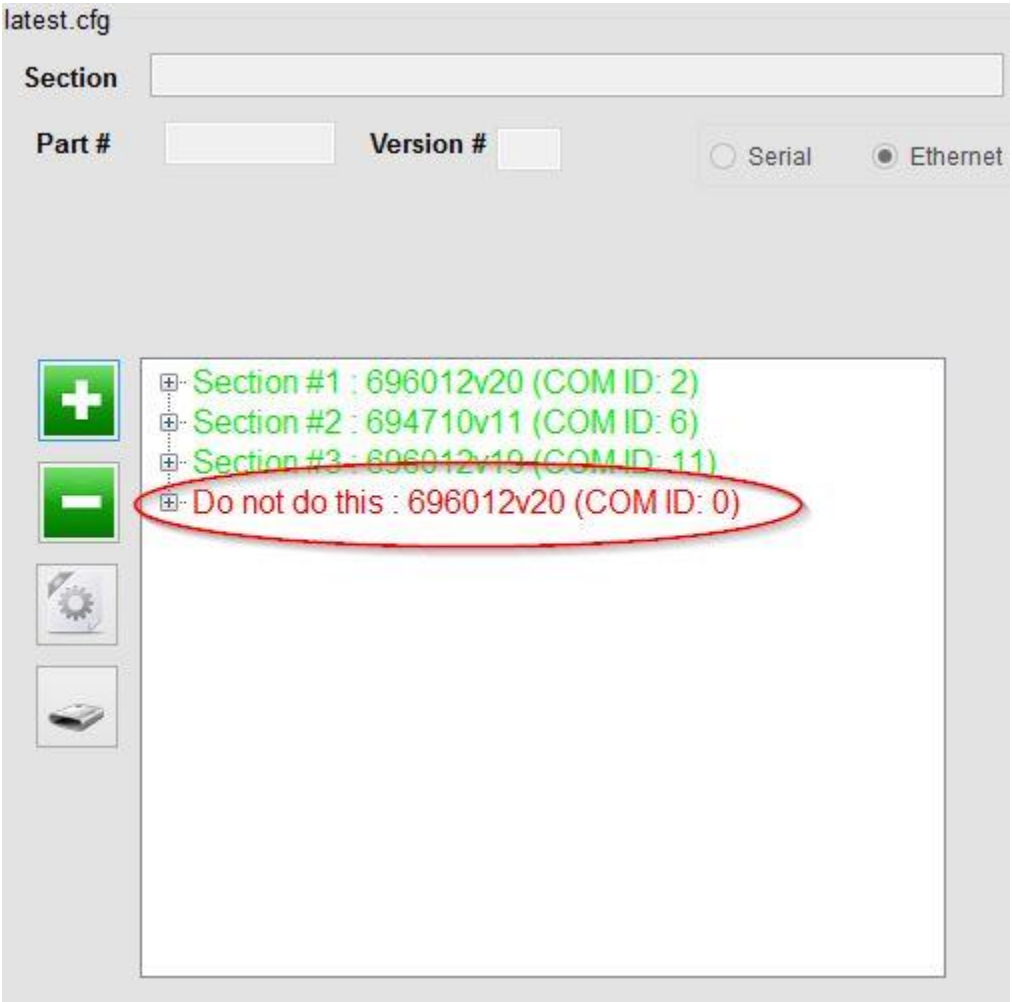


Figure 61 Disabled drive in maintenance screen

Tip #2 - Maintenance Tree:

If you need to work with one or more maintenance screens open while using other features of the software (i.e. Block Viewer, Real-Time screen, Trending, etc.), set the maintenance screen to the (ZX) Analyzer Calibration tab. This tab has the least overhead and you will see a significant performance increase in communications. This is especially effective for serial communications.

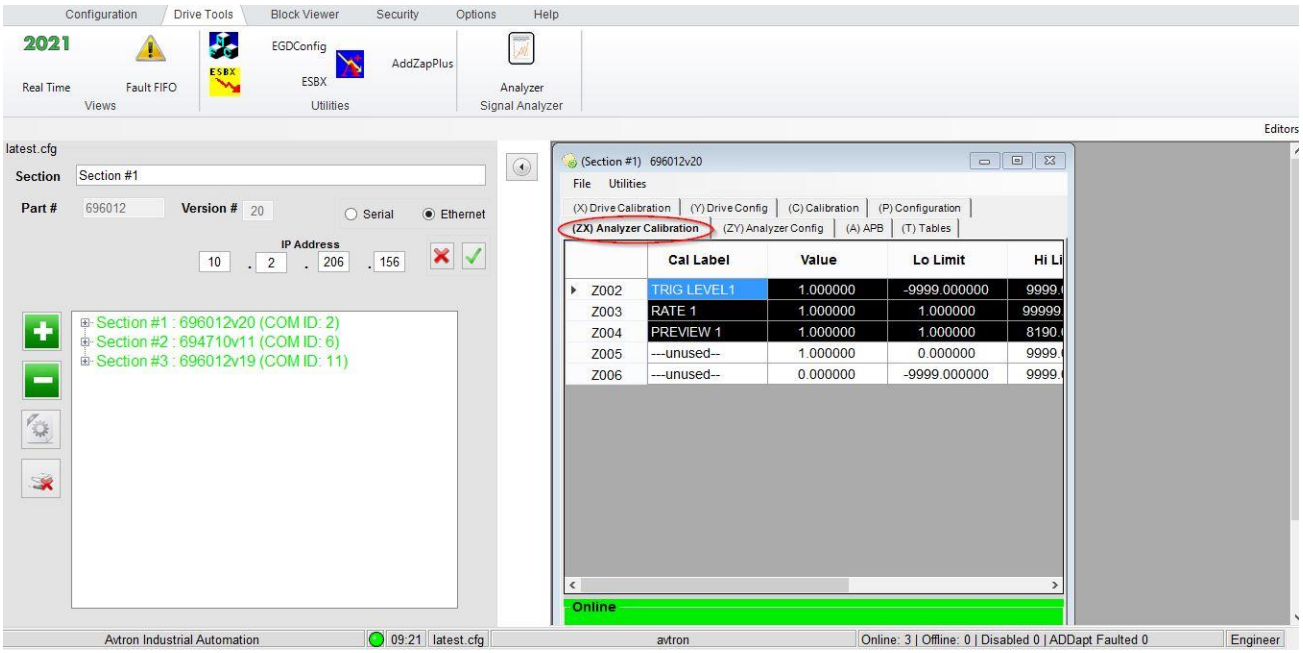
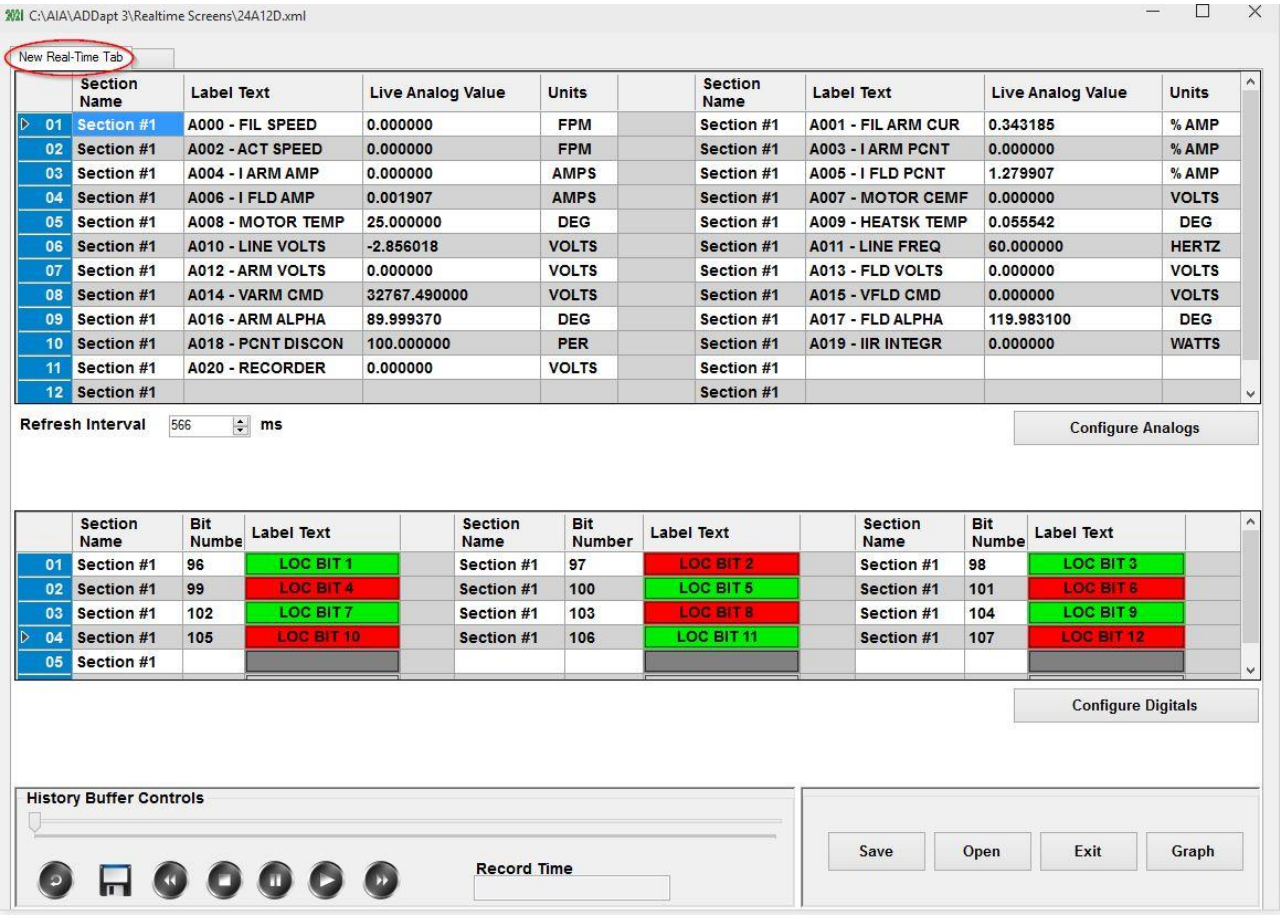


Figure 62 (ZX) tab selected in maintenance screen

Tip #3 – Real-Time screen:

If you need to monitor a significant amount of analog elements in the Real-Time screen as shown below in figure 64, it is not the most efficient to do it all on one tab:



	Section Name	Label Text	Live Analog Value	Units	Section Name	Label Text	Live Analog Value	Units
01	Section #1	A000 - FIL SPEED	0.000000	FPM	Section #1	A001 - FIL ARM CUR	0.343185	% AMP
02	Section #1	A002 - ACT SPEED	0.000000	FPM	Section #1	A003 - I ARM PCNT	0.000000	% AMP
03	Section #1	A004 - I ARM AMP	0.000000	AMPS	Section #1	A005 - I FLD PCNT	1.279907	% AMP
04	Section #1	A006 - I FLD AMP	0.001907	AMPS	Section #1	A007 - MOTOR CEMF	0.000000	VOLTS
05	Section #1	A008 - MOTOR TEMP	25.000000	DEG	Section #1	A009 - HEATSK TEMP	0.055542	DEG
06	Section #1	A010 - LINE VOLTS	-2.856018	VOLTS	Section #1	A011 - LINE FREQ	60.000000	HERTZ
07	Section #1	A012 - ARM VOLTS	0.000000	VOLTS	Section #1	A013 - FLD VOLTS	0.000000	VOLTS
08	Section #1	A014 - VARM CMD	32767.490000	VOLTS	Section #1	A015 - VFLD CMD	0.000000	VOLTS
09	Section #1	A016 - ARM ALPHA	89.999370	DEG	Section #1	A017 - FLD ALPHA	119.983100	DEG
10	Section #1	A018 - PCNT DISCON	100.000000	PER	Section #1	A019 - IIR INTEGR	0.000000	WATTS
11	Section #1	A020 - RECORDER	0.000000	VOLTS	Section #1			
12	Section #1				Section #1			

	Section Name	Bit Numbe	Label Text	Section Name	Bit Number	Label Text	Section Name	Bit Numbe	Label Text
01	Section #1	96	LOC BIT 1	Section #1	97	LOC BIT 2	Section #1	98	LOC BIT 3
02	Section #1	99	LOC BIT 4	Section #1	100	LOC BIT 5	Section #1	101	LOC BIT 6
03	Section #1	102	LOC BIT 7	Section #1	103	LOC BIT 8	Section #1	104	LOC BIT 9
04	Section #1	105	LOC BIT 10	Section #1	106	LOC BIT 11	Section #1	107	LOC BIT 12
05	Section #1								

Figure 63 Twenty-One analogs and twelve digitals on one tab

It is much more efficient to split the analogs across several Real-Time tabs. Note that the amount of digitals does not affect the performance and can be copied across all screens if desired. **<u>This is especially important if using a serial connection!</u>** Note figure 65 below:

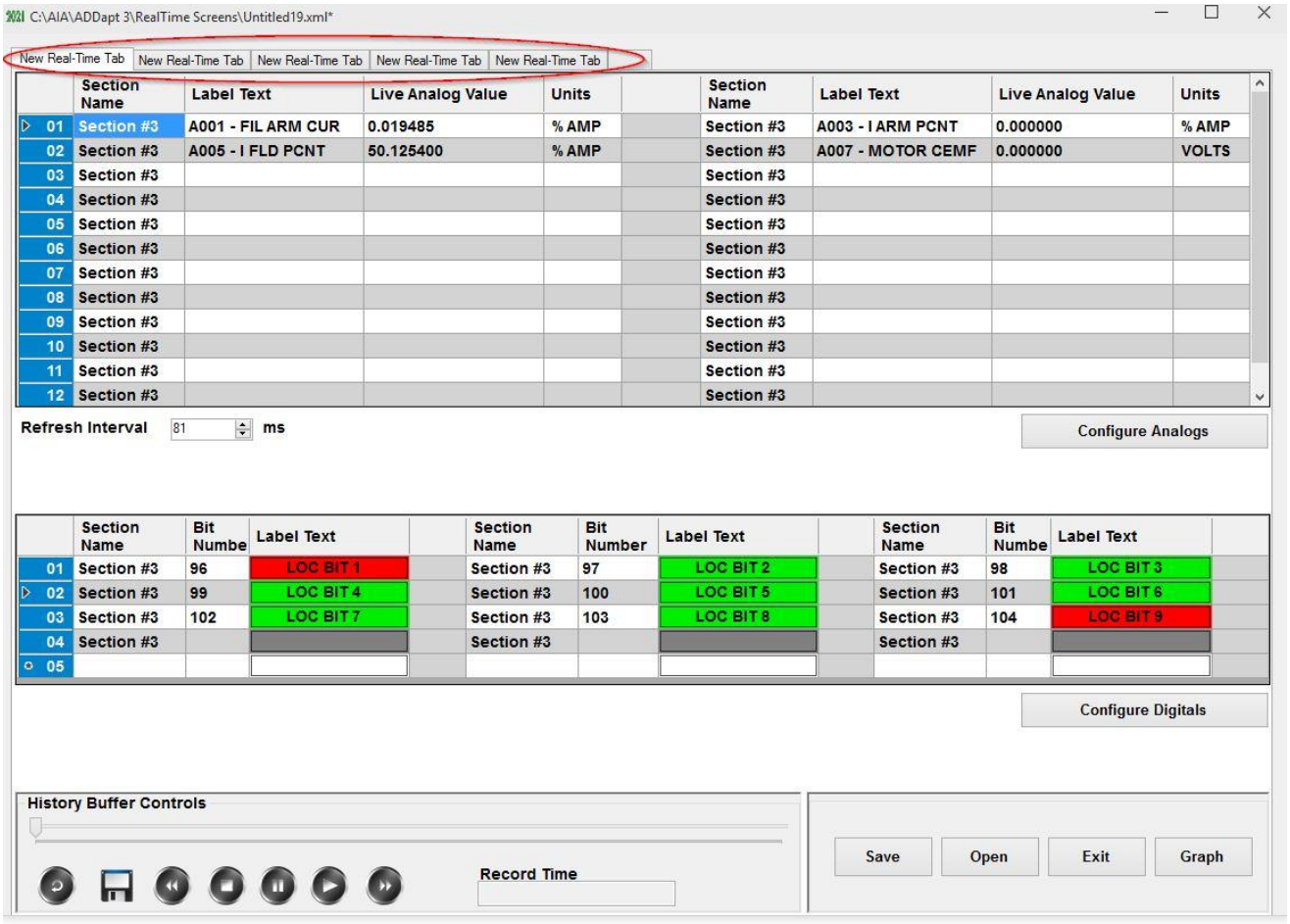


Figure 64 Four analogs and nine digitals spread across five tabs

Tip #4 – Block Viewer:

When using Block Viewer, you can have as many elements polling as you want. However, it is optimal to poll them manually if there are other software modules running (Real-Time Screen, etc.) It is also advisable to keep the maintenance screen closed or on the (ZX) tab while polling automatically. This will give the optimally best refresh rate in Block Viewer.

Tip #5 – ADD32 COM Tuning:

ADD32 COM tuning is a very powerful and useful feature for optimizing communications. The default settings are best for networks with moderate to heavy traffic, but lighter traffic networks can be tweaked to run faster. If there are communications errors or faults, this is the first place to check. Use longer delays and more retries in the event communication problems occur. On simple (or less noisy) networks, use shorter delays and retries than the default for increased performance.

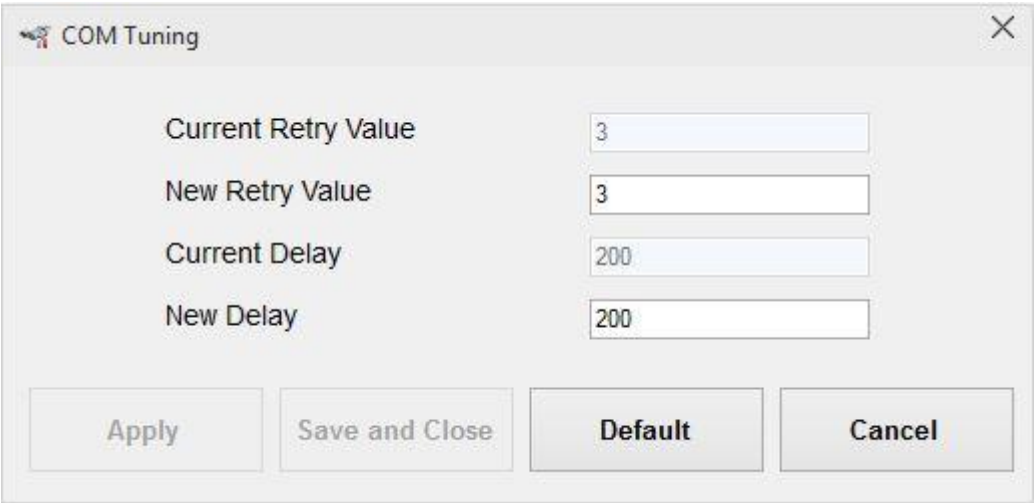


Figure 66 Example COM tuning set for a simple 3 drive network

Tip #6 Serial Connections:

There are several things to keep in mind when using a serial connection:

- Communication is limited to 9600 baud. It is imperative to have as little communication going on as possible. **Do not leave several screens polling at the same time.**
- When using the Real-Time screen, if many analogs and digitals are needed it is necessary to spread them across several tabs. This cannot be stressed enough. Failure to do so can result in buffer overflow resulting in the program freezing.
- Polling in Block Viewer is best when set to manually poll individual elements. Polling many elements automatically can result in drastic performance decrease.
- Using signal analyzer with a serial connection can cause significant delays. It is also **necessary** to have the drive in ADD32 compatibility mode for all ADD32+ drives; otherwise signal analyzer will not work.
- Real-Time graphical trending is not possible when using a serial connection and is not a selectable option in the screen. Notice figure 68 below.
- Editable digital element communication has been significantly improved in the latest version of ADDapt 3, but it is still best to use the most minimal analogs needed. Refer to figure 68 below as well.

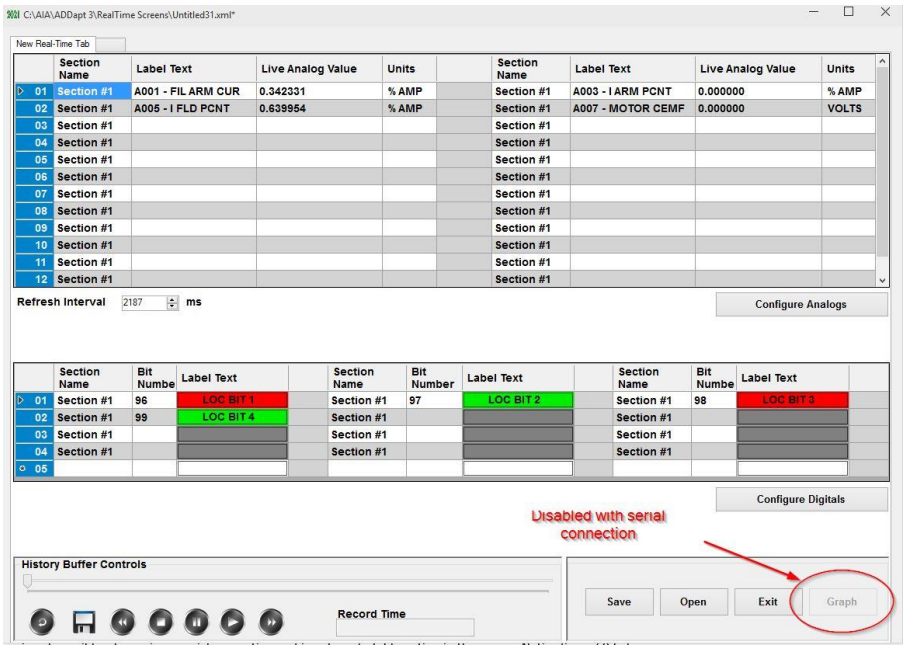


Figure 67 Serial connection disables trend graphing

Appendix F: Processing a converted drive personality file with ADDapt 3

1. Converted ADD32 drive personality file created by the ConvertToAdd32Plus Utility are not compatible with ADDapt2000 v12.
2. The Convert utility is made to convert 694xxx.add to 696xxx.add files (ADD32 → ADD32+).
3. When converting a 694xxx.add using the ConvertToAdd32Plus Utility, the resultant converted file only has four (4) analyzer channels defined as opposed to eight (8) channels as supported by the ADD32+ drive. When opening this converted file with a 696xxx.tem template file, ADDapt20000 v12 will crash since the template file has eight channels defined but only four channels exist in the converted file.
4. Before using the converted file, follow these steps:
    a. Open it using ADDapt 3.
    b. Save the converted file using ADDapt 3. This step adds the analyzer channels 5 thru 8 in the file.

Appendix G: ConvertToADD32+ Log File Description

ConvertToADD32+ utility now generates a log file to report on the conversion process.

The location of the log file can now be changed. By default, the log files are created in c:\avtron\addapt\logs; however, it can easily be changed to another directory that is more useful to your situation. Any change made to the log file directory persists between sessions as it is stored in the application settings. If the directory does not exist, it will be created

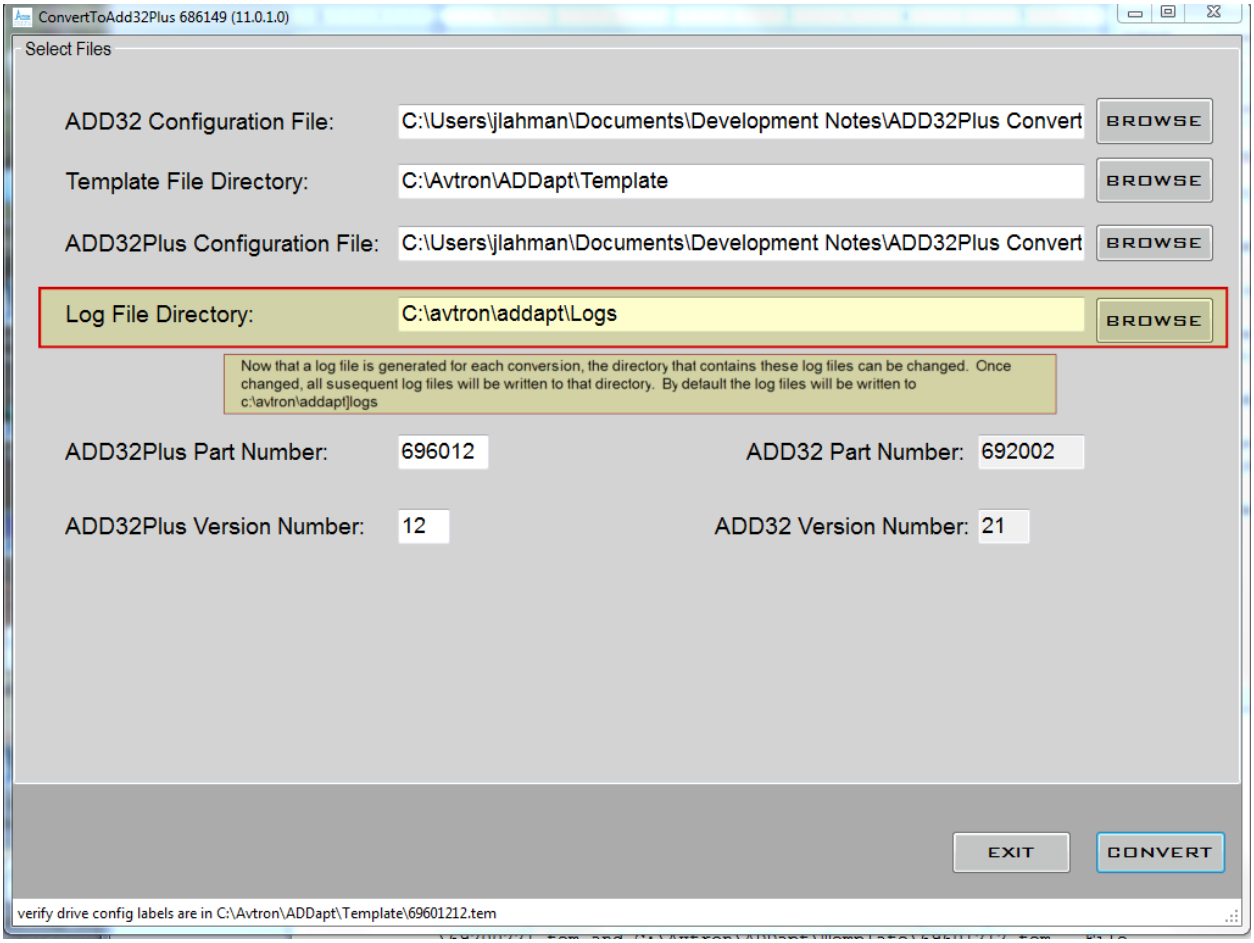


Figure 68 ConvertToAdd32+ UI now includes LOG file directory

Location of Log Files

To change the location of the directory where the log files are stored, select the 'Browse' button

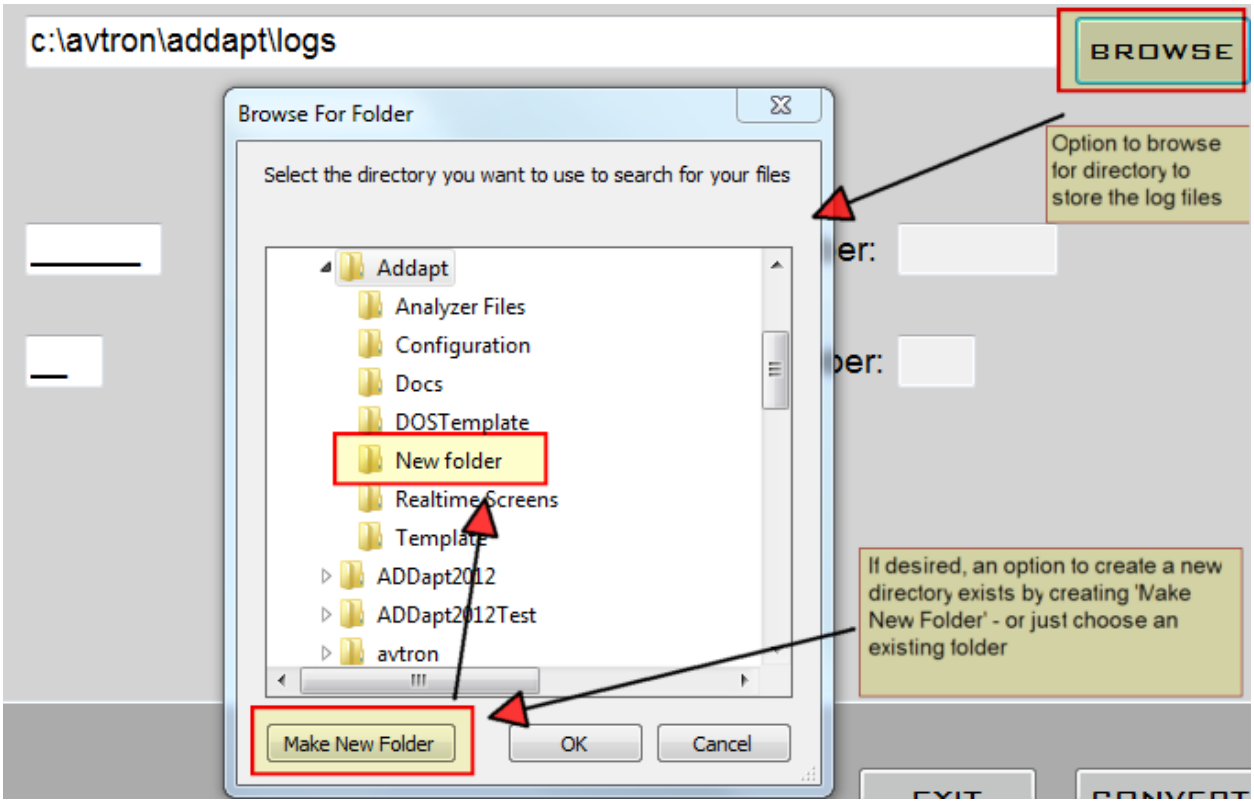
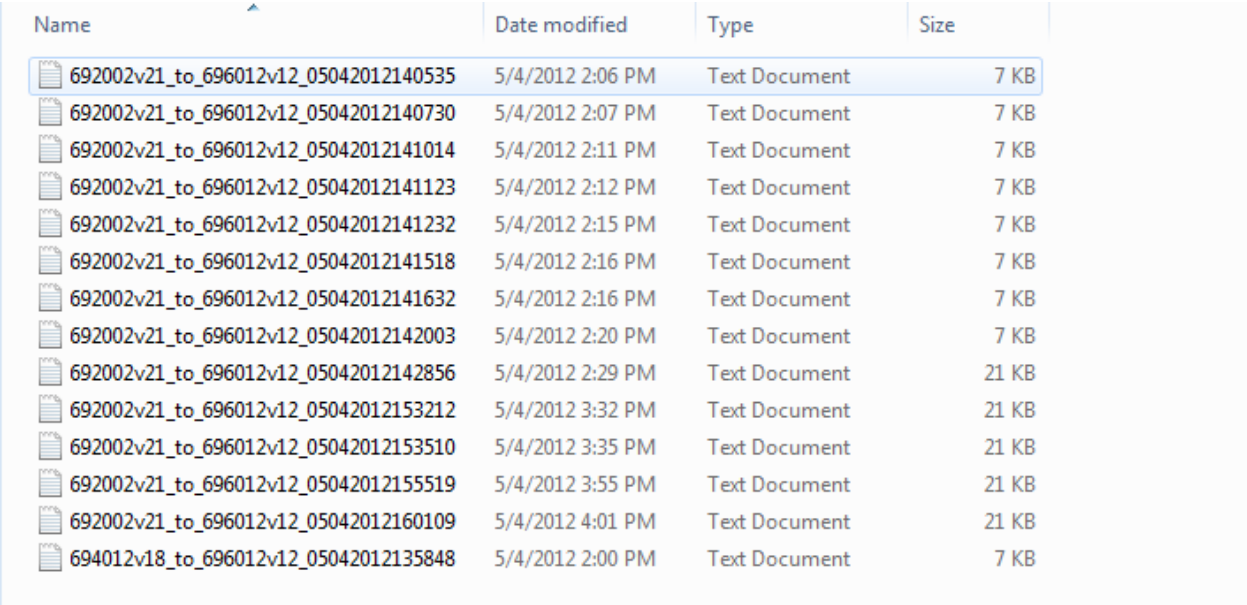


Figure 69 Browse for log directory

Format of Log Files

The format of the generated log file is <ADD32 part and version>_to_<ADD32+ part and version>_<current time>.txt. For example, if you are converting from 694012v18 to 696012v12 at 5/2/12 at 4:14:32, the log file name will be 694012v18_to_696012v12_05012012161432.txt.



Name	Date modified	Type	Size
692002v21_to_696012v12_05042012140535	5/4/2012 2:06 PM	Text Document	7 KB
692002v21_to_696012v12_05042012140730	5/4/2012 2:07 PM	Text Document	7 KB
692002v21_to_696012v12_05042012141014	5/4/2012 2:11 PM	Text Document	7 KB
692002v21_to_696012v12_05042012141123	5/4/2012 2:12 PM	Text Document	7 KB
692002v21_to_696012v12_05042012141232	5/4/2012 2:15 PM	Text Document	7 KB
692002v21_to_696012v12_05042012141518	5/4/2012 2:16 PM	Text Document	7 KB
692002v21_to_696012v12_05042012141632	5/4/2012 2:16 PM	Text Document	7 KB
692002v21_to_696012v12_05042012142003	5/4/2012 2:20 PM	Text Document	7 KB
692002v21_to_696012v12_05042012142856	5/4/2012 2:29 PM	Text Document	21 KB
692002v21_to_696012v12_05042012153212	5/4/2012 3:32 PM	Text Document	21 KB
692002v21_to_696012v12_05042012153510	5/4/2012 3:35 PM	Text Document	21 KB
692002v21_to_696012v12_05042012155519	5/4/2012 3:55 PM	Text Document	21 KB
692002v21_to_696012v12_05042012160109	5/4/2012 4:01 PM	Text Document	21 KB
694012v18_to_696012v12_05042012135848	5/4/2012 2:00 PM	Text Document	7 KB

Figure 70 Directory list of conversion logs

Layout of Log File

The log file is divided into these sections: Header, list of CAL and CFG labels from both template files, CFG, CAL, DCFG, DCAL section equivalency report, Label comparison report.

The header section contains basic items such as run date/time, template version and names

```
ADD32 to ADD32+ Conversion Report

Time of conversion: 05/04/2012 16:01:09
From Drive: 692002v21
To Drive: 696012v12
Old Template file is: C:\Avtron\ADDapt\Template\69200221.tem
New Template file is: C:\Avtron\ADDapt\Template\69601212.tem
```

Figure 71 Conversion log file header

Next, the labels from both template files are reported in case there are any discrepancies. This list can be used to compare the two files. The labels from the ADD32 template file are reported followed by the labels from the ADD32+ template file.

```
C:\Avtron\ADDapt\Template\69200221.tem CAL labels

1: ZERO ANALOG
2: ONE ANALOG
3: ONE/PI
```

Figure 72 Example of listed labels in log file

Next, a report is generated logging any byte discrepancies between the templates' CFG, CAL, DCFG, DCAL sections. The report for each section scanned contains the full windows template filename, the offset of that section in the template file and the number of elements defined for that section. If a discrepancy is found, the first is reported (that is where the scanning stops) as follows:

ADD32+ template file name

- ADD32+ template file name
- The byte position in the ADD32+ template file where the discrepancy occurred
- ADD32 template file name
- The byte position in the ADD32 template file where the discrepancy occurred
- Element number containing the discrepancy so that the offending element can easily be found

```
 C:\Avtron\ADDapt\Template\69601212.tem CFG section: Offset
26780; Nbr Elements: 255
 C:\Avtron\ADDapt\Template\69200221.tem CFG section: Offset
22808; Nbr Elements: 255
MISMATCH!  Section CFG are not byte equavilent. C:\Avtron\ADDapt
\Template\69601212.tem at byte pos 68b6  C:\Avtron\ADDapt
\Template\69200221.tem at byte pos 5932 Element 0
```

ADD32+, ADD32 files

Mismatch reported

Figure 73 Example of a section byte equivalency report

Next, any CFG or CAL missing labels are reported to the log file. If all labels are in both template files, that will be reported as well

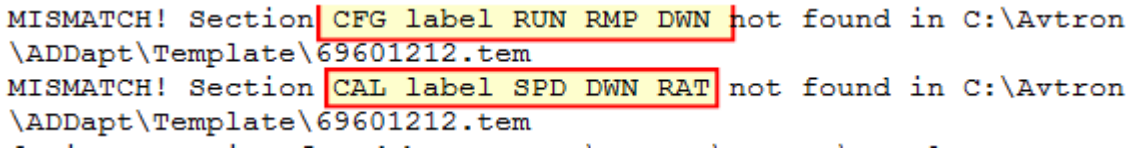


Figure 74 Example of report of missing labels between the two template files

Finally, the number of discrepancies is reported. If there are none, that is reported as well.

```
6 Discrepencies found between C:\Avtron\ADDapt\Template
\69200221.tem and C:\Avtron\ADDapt\Template\69601212.tem.
File not converted
```

Figure 75 Discrepancies reported

Appendix H: Configure Moxa Serial Connection

Required Hardware

- MOXA UPort 1100 Series USB-to-Serial Connector (Avtron part #D45784)
- Available USB 2.0 or 3.0 port
- MOXA Software CD (install driver from this CD)

Connect MOXA USB-to-Serial Connector on Windows

- Before connecting the MOXA connector to the laptop, install the MOXA driver on the Windows OS in an account that has local Administrative privileges or installing the driver under elevated Administrative privileges for normal accounts.

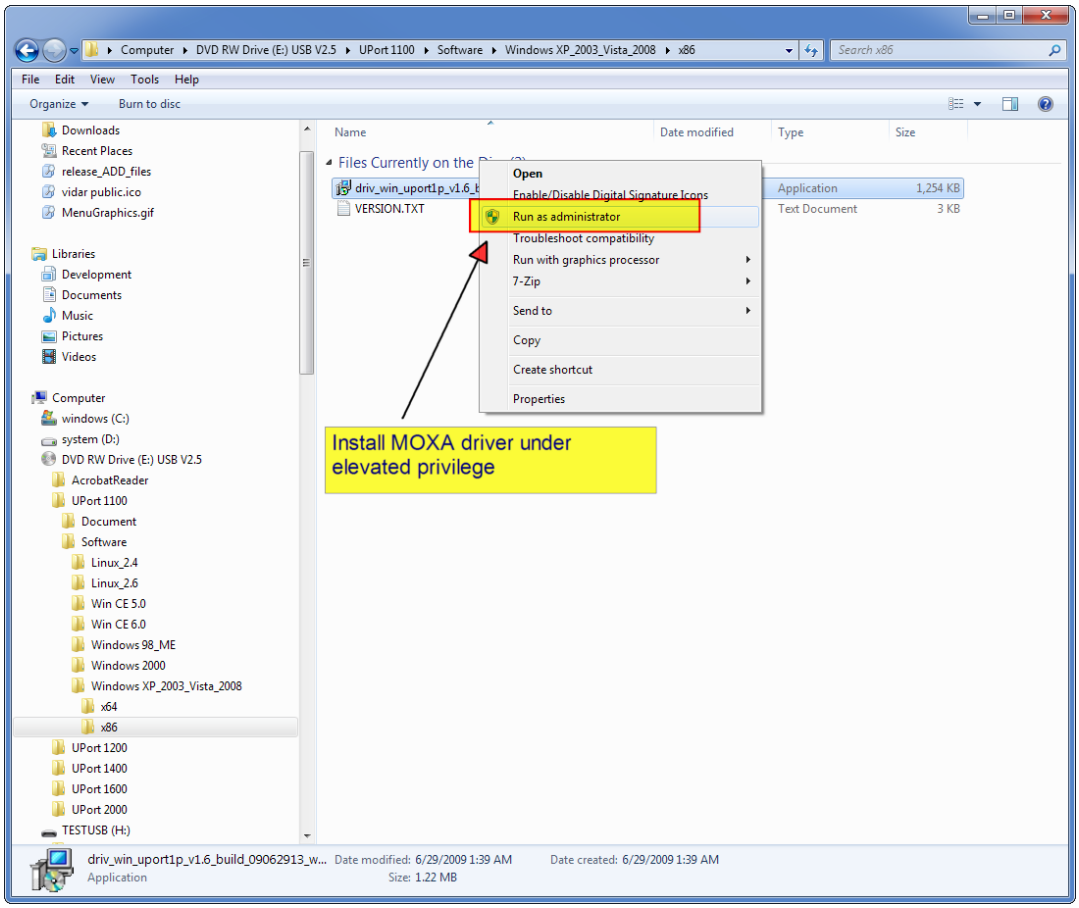


Figure 76 Install MOXA driver under normal account

- Connect the MOXA connector to an available USB port (or a USB hub with USB 2.0 or 3.0 ports). This will activate the driver and assign a COM port on the Windows OS. This can be seen in the device manager.

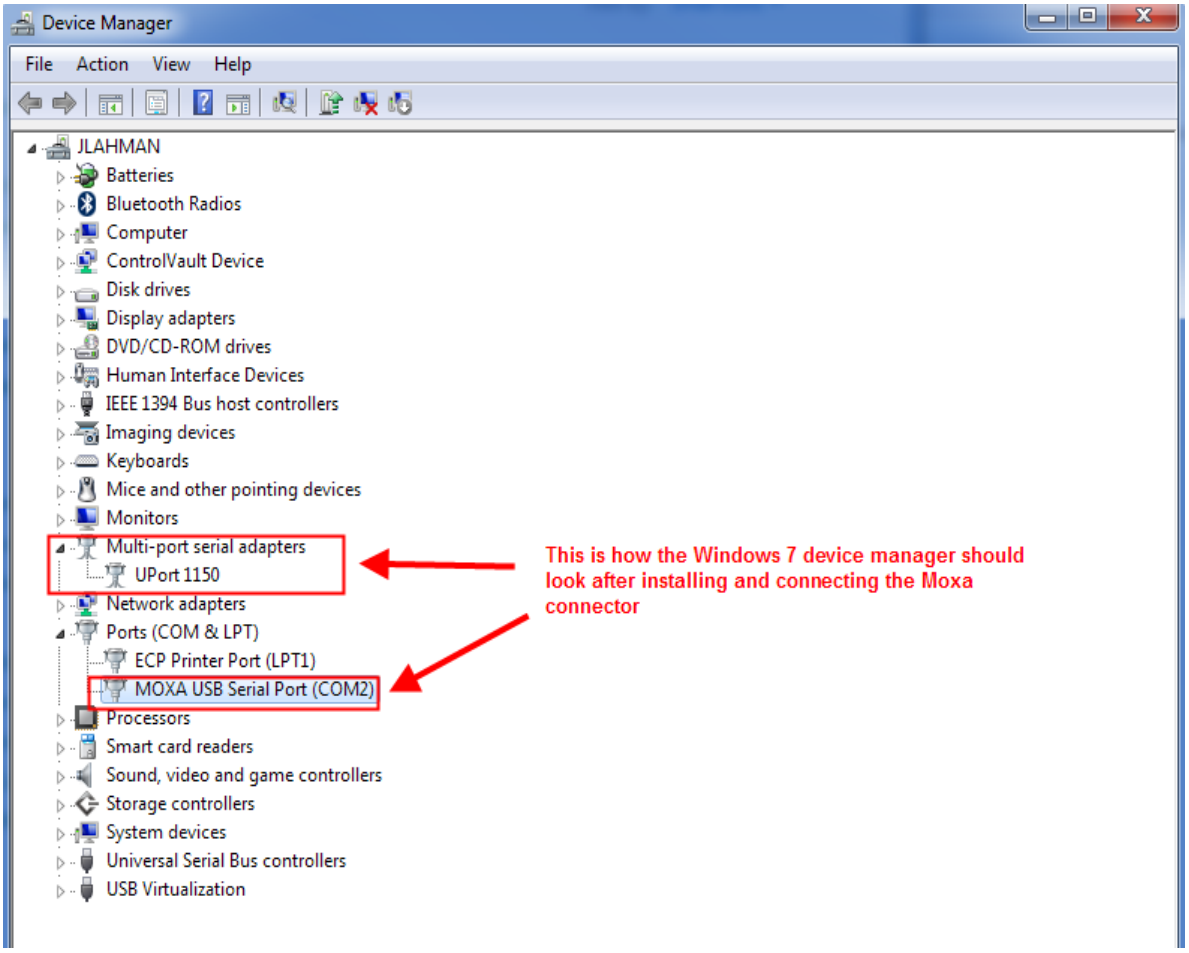


Figure 77 MOXA as seen in device manager

- Define UPort1150 port settings as RS-485 4W

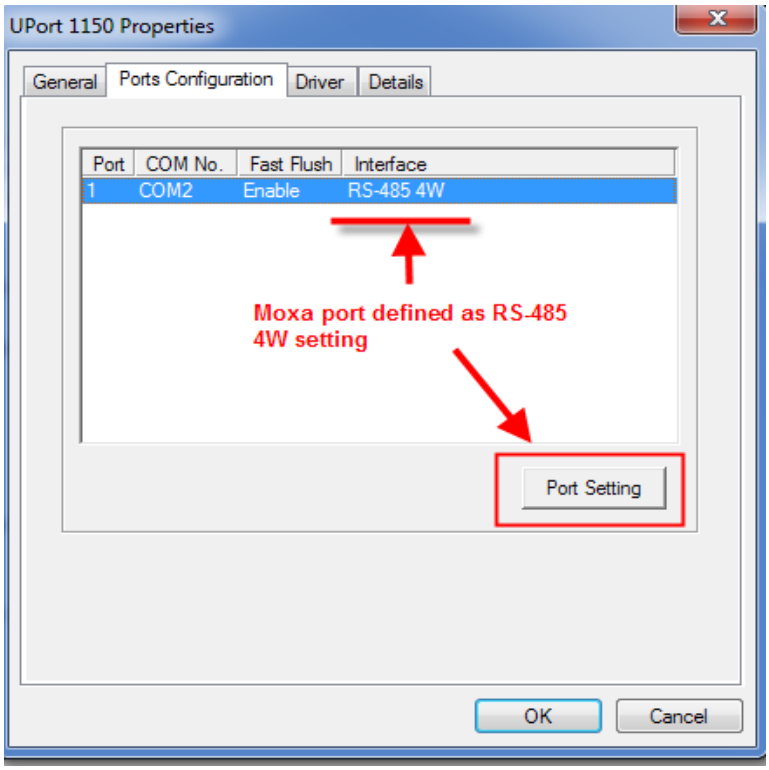


Figure 78 Setting UPORT configuration

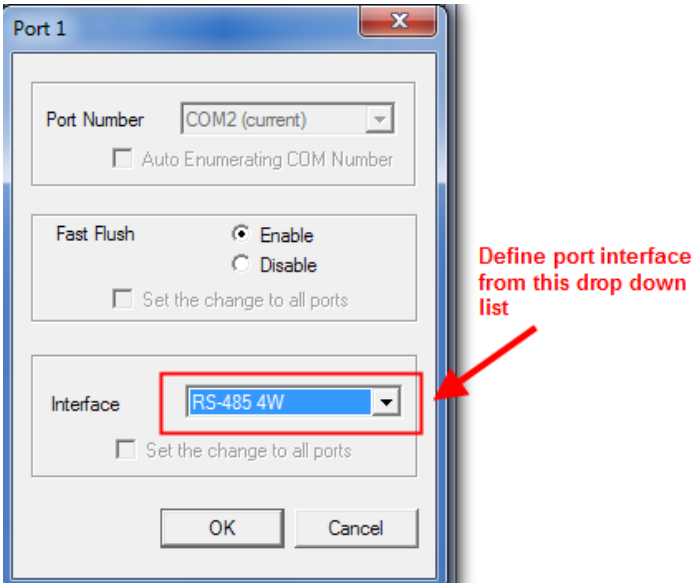


Figure 79 Setting UPORT interface to RS-485 4W

- Define the MOXA COM port setting

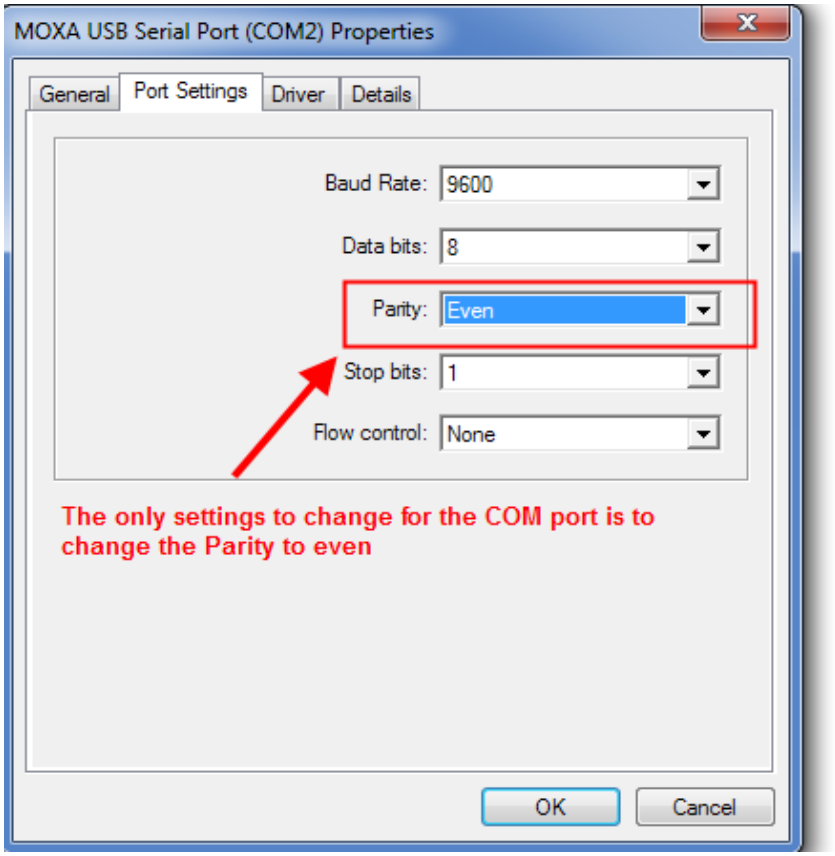


Figure 80 Setting UPORT COM Properties

Appendix I: ADDapt2000 v12 and ADDapt 3 compatibility issues

COM Server

Be aware that there are compatibility issues when running both ADDapt2000 v12 and ADDapt 3 on the same computer. These issues arise over the use of the COM Server (Add32.exe) which requires appropriate registration in the system registry. Two command procedures are provided in which to accomplish the task. Run **registerADDapt3ComServer.bat** to register the ADDapt 3 COM Server. Run **registerADDapt2000v12ComServer.bat** to register the ADDapt2000 v12 COM Server. A scenario for using these COM servers are as follows: if ADDapt 3 is currently being used but ADDapt2000 v12 needs to be used to attach to a drive, first register the ADDapt2000 v12 COM Server by executing the batch procedure **registerADDapt2000v12ComServer.bat**.

Both batch procedures must be run with elevated privileges by right clicking the desired batch file and choosing 'Run As Administrator'

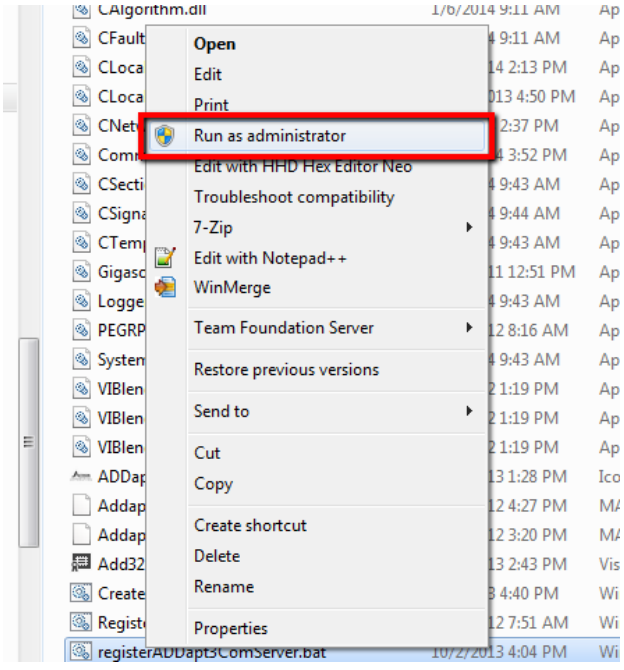


Figure 81 Run COM Server batch file with elevated privileges

Downloading ADDapt2000v12 cal/cfg file using ADDapt 3

When opening a cal/cfg file (*.add) created by ADDapt2000 v12, be aware that there are four (4) analyzer tables defined in this file. When downloading this file to an ADD32+ drive, which has eight (8) analyzer tables, an error will occur during the download because of this mismatch. Before downloading a cal/cfg file created by ADDapt2000 v12 to an ADD32+ drive, the file must first be saved in ADDapt 3 format which has the additional four analyzer channels defined with default values for a total of eight (8) analyzer channels. It is this file that is downloaded to the ADD32+ drive.

For example:

- A2Test.add is a cal/cfg file for 696012v12 created by ADDapt2000 v12.
- A2Test.add is opened in ADDapt 3 and is saved as A3Test.add
- A3Test.add is opened by ADDapt 3 and downloaded to the drive with 696012v12 software.

Appendix J: Network Configuration Notes

Properly setting network adapter settings

When running ADDapt 3 through a wired connection with wireless turned on, be aware that on some computers and laptops, the wireless connection (or another connection) has the priority connection. This will degrade ADDapt 3 performance. Setting the wired connection as the priority connection is done through the **Change adapter settings**. The only way to access it is to go to the *Network and Sharing Center*.

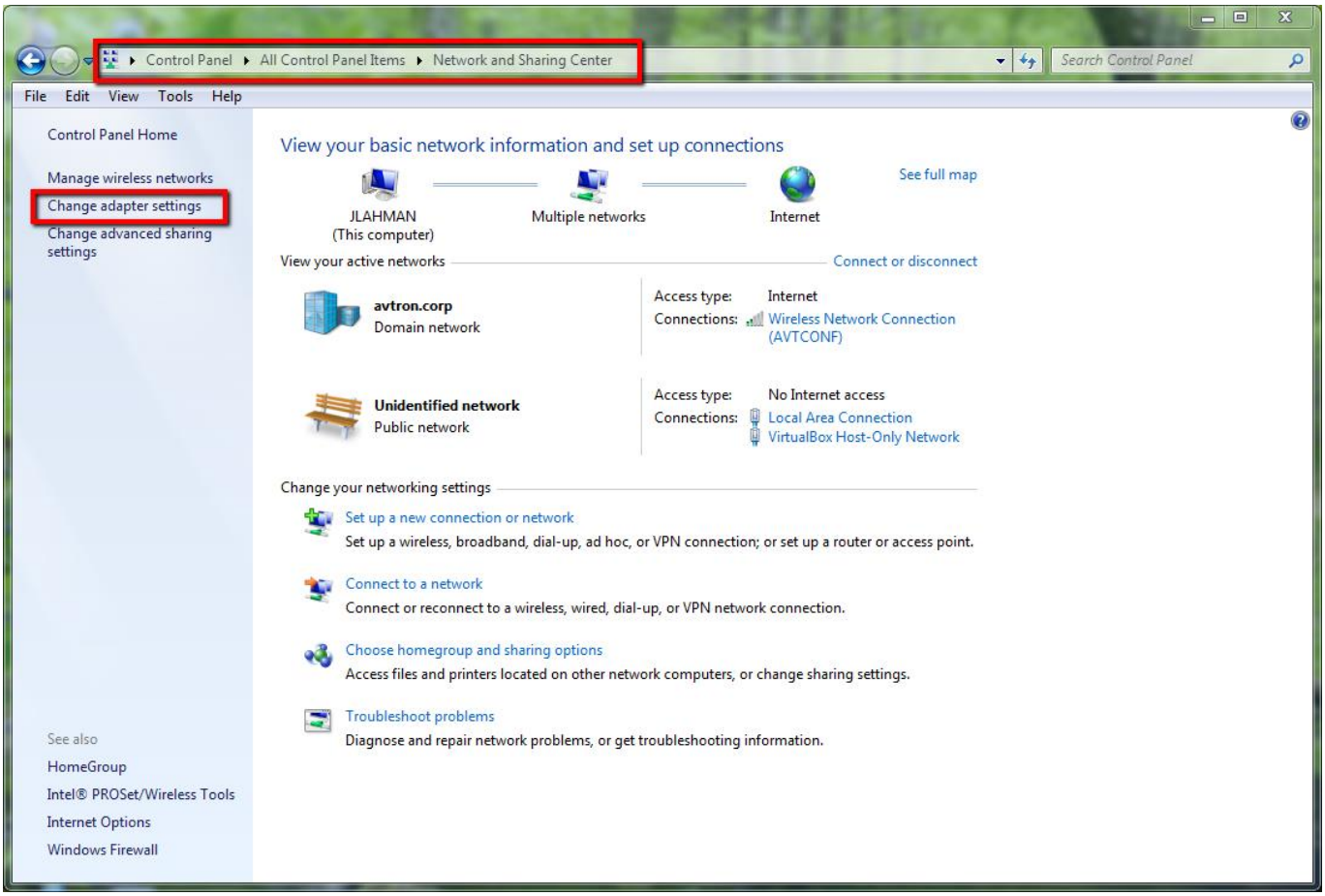


Figure 82 Selecting 'Change adapter settings'

Click on *Change adapter settings*, and then press the ALT key to show the menu bar. Go to *Advanced* and, finally, *Advanced Settings*.

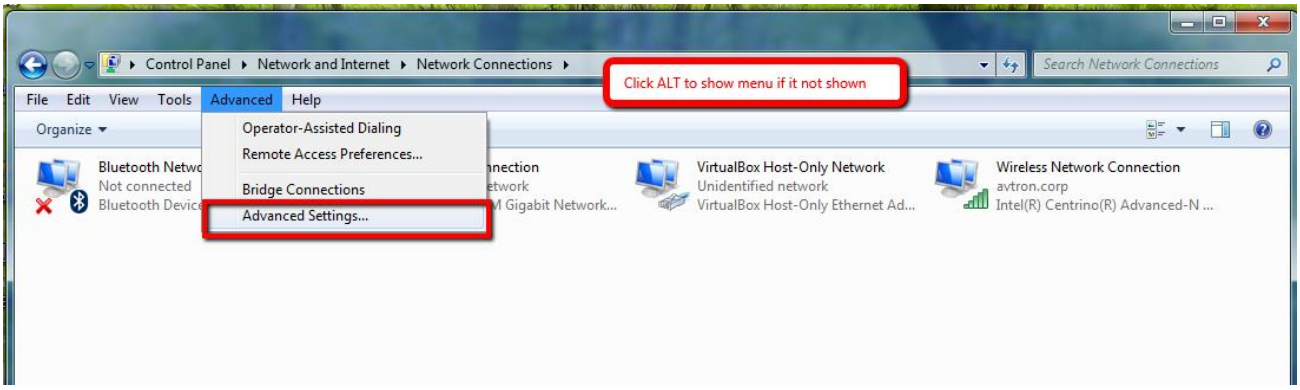


Figure 83 Selecting 'Advanced Settings'

This will display the *Change Adapter Settings* dialog box. Look at the Connections. If the Local Area Connection – this is the wired connection – is not listed on the list, it must be moved to the top of the list. To do this, select *Local Area Connection* followed by the green up arrow button. Press this button until *Local Area Connection* is on top of the list. Verify that both *Internet Protocol Version 6* items are unchecked. Select **OK** and reboot the computer.

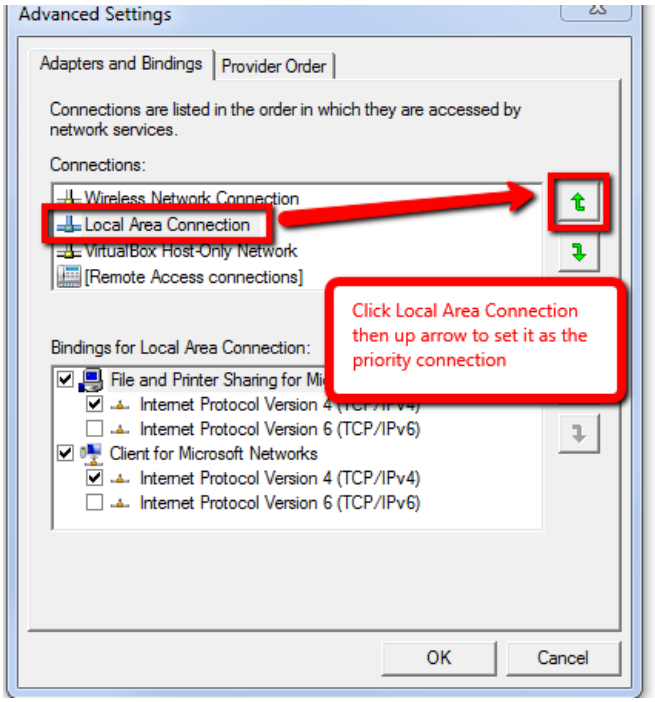


Figure 84 Moving Local Area Connection to top of list

Network Metrics

In addition to properly configuring the network adapter order, the network metrics – adapter preference - may have to be tweaked as well. When more than one network connection is available, Windows uses the one with the lowest metric value as the priority networking route. By default, Windows automatically assigns a metric value based on the network connection's rated speed.
When using a wired connection in a multiple network computer, set the wired connection to the lowest metric setting. For example, when using a laptop with both a wired and wireless connection, follow this table:

Network Connection	Metric
Local Area Connection (Wired)	10
Wireless Network Connection	20

Figure 85 Network connections metric values

To force Windows to use a specific network connection, assign a metric to each network connection giving the lowest value to the desired connection.

Open the Change Adapter Settings in the *Network and Sharing Center* found in Control Panel (see Figure 83).

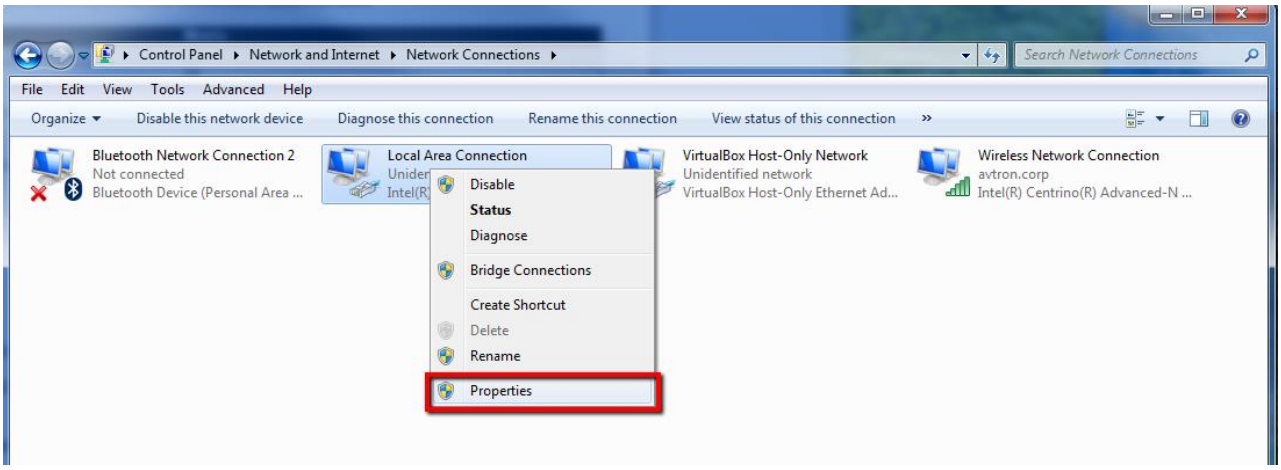


Figure 86 Choosing Connection Properties

Right click the desired connection. Choose Properties.

Click Internet Protocol 4 and choose Properties

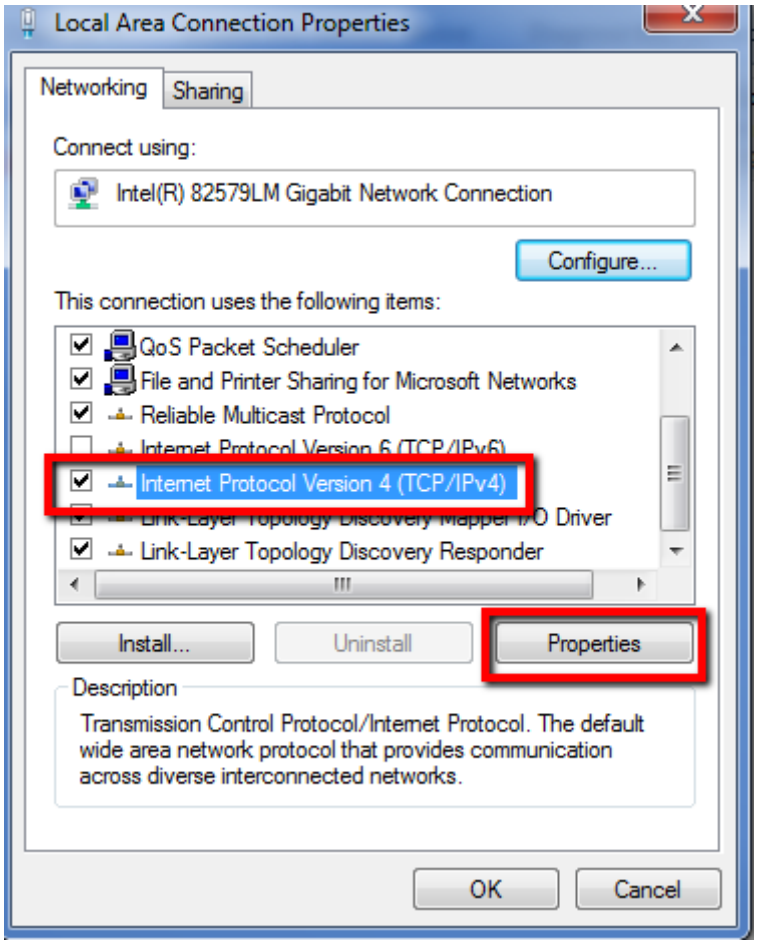


Figure 87 Choose IPv4 properties

Next, choose Advanced where the metric value is set

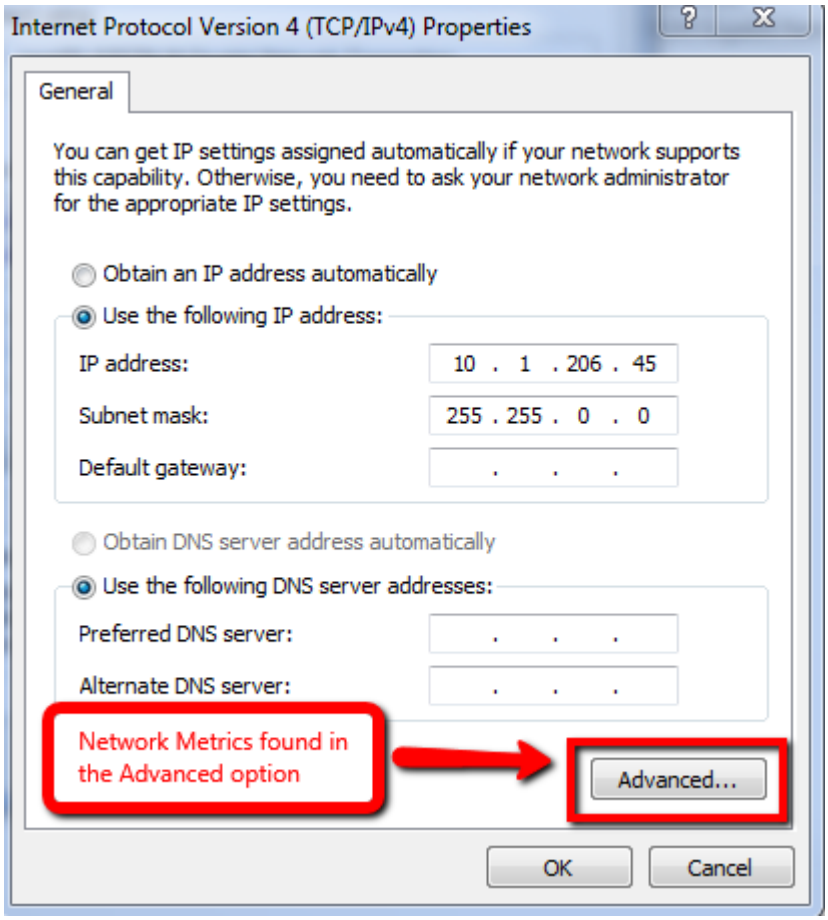


Figure 88 Select IPv4 Advanced Properties

Now, set the network metrics by un-checking *Automatic metric* and entering a number between 1 and 9999 for the *Interface metric*.

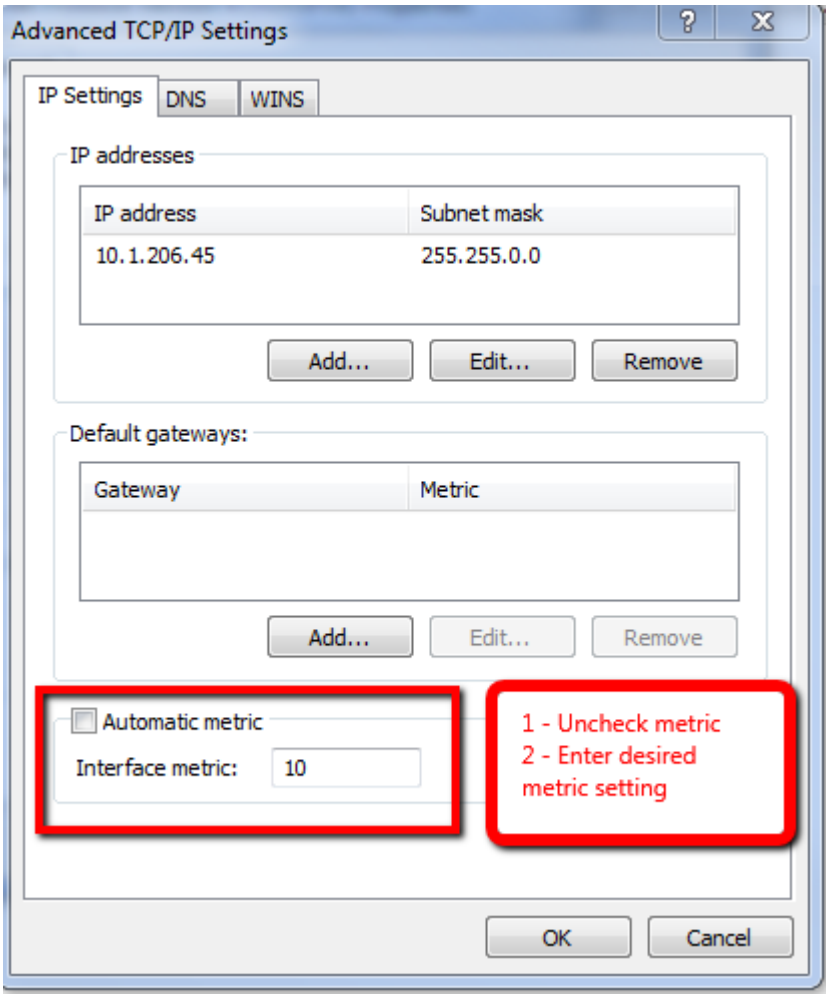


Figure 89 Changing network metric

Appendix K: Recommended Network Configuration

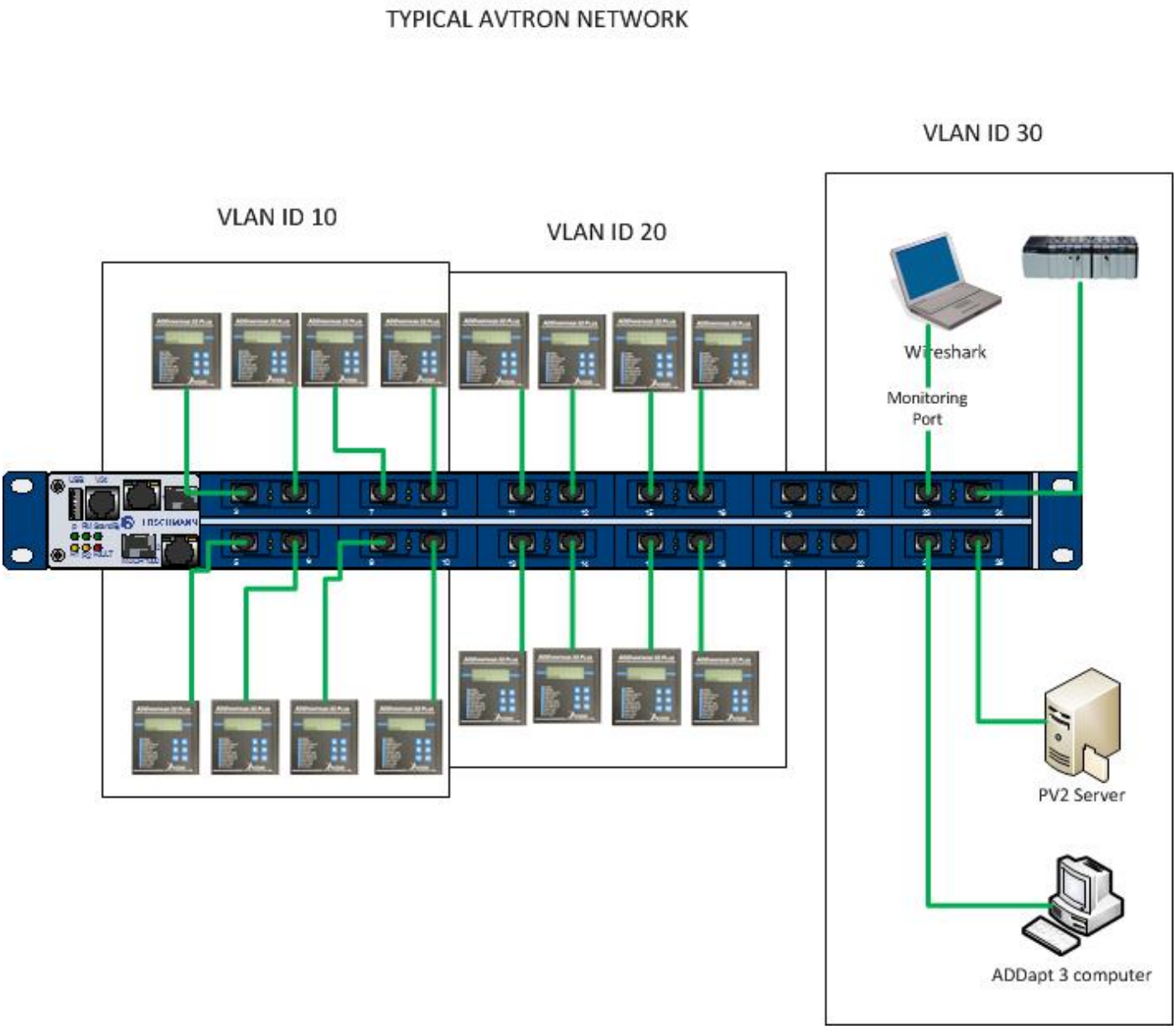


Figure 90 Recommended Network Configuration

Appendix L: Enable trend chart in Virtual Box guest Windows machine

To enable proper rendering of the real-time trend graph in Virtual Box Windows guest, DirectX must be enabled by using the Virtual Guest Additions ISO image. This document explains how to enable DirectX in a Virtual Box Windows guest.

Step 1 - Enable 3D acceleration in a Windows guest environment

Configure the virtual machine settings, under **Display**

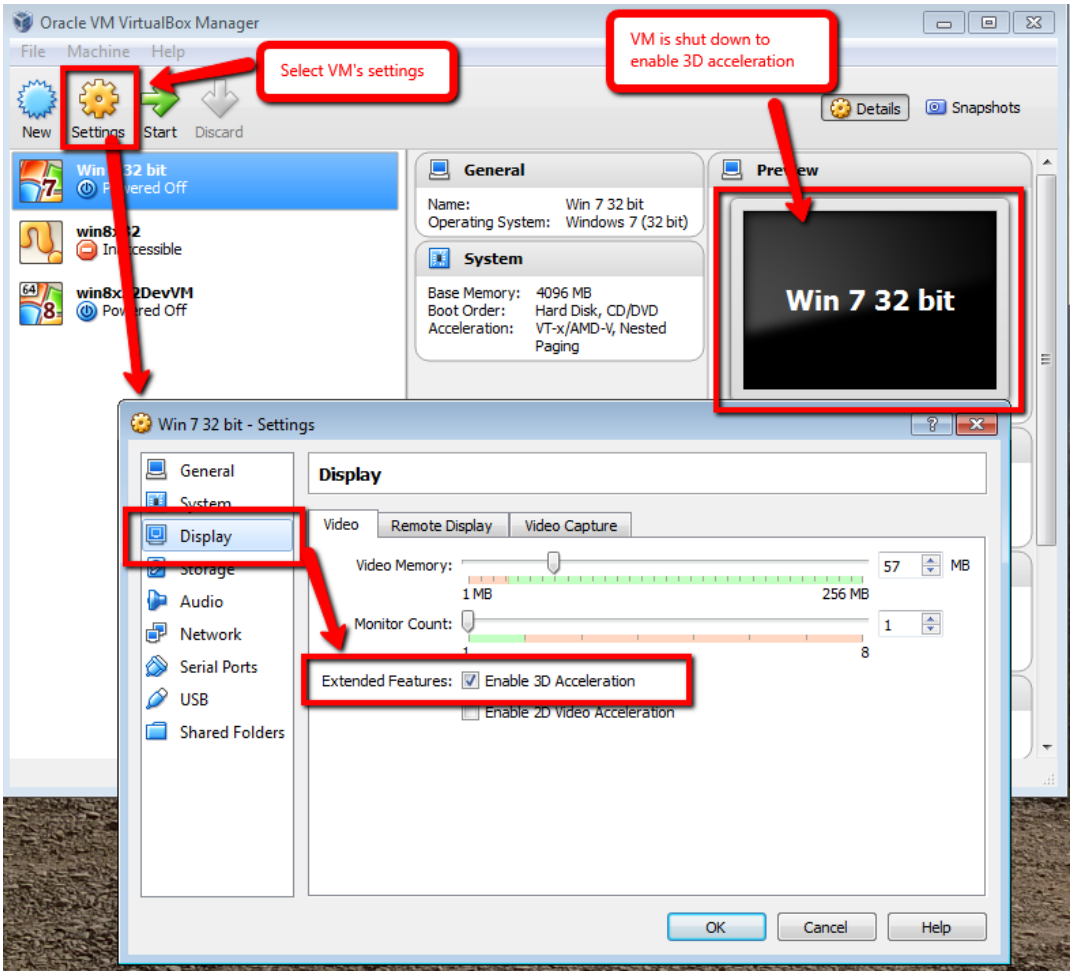


Figure 2 Enable 3D Acceleration

Step 2 – Install Guest Additions in safe mode

To get DirectX support on a Windows guest, it needs to be installed in **safe mode**. When the Windows guest is booting, tap **F8** and select **Safe Mode**. The Windows guest will boot in **safe mode.**

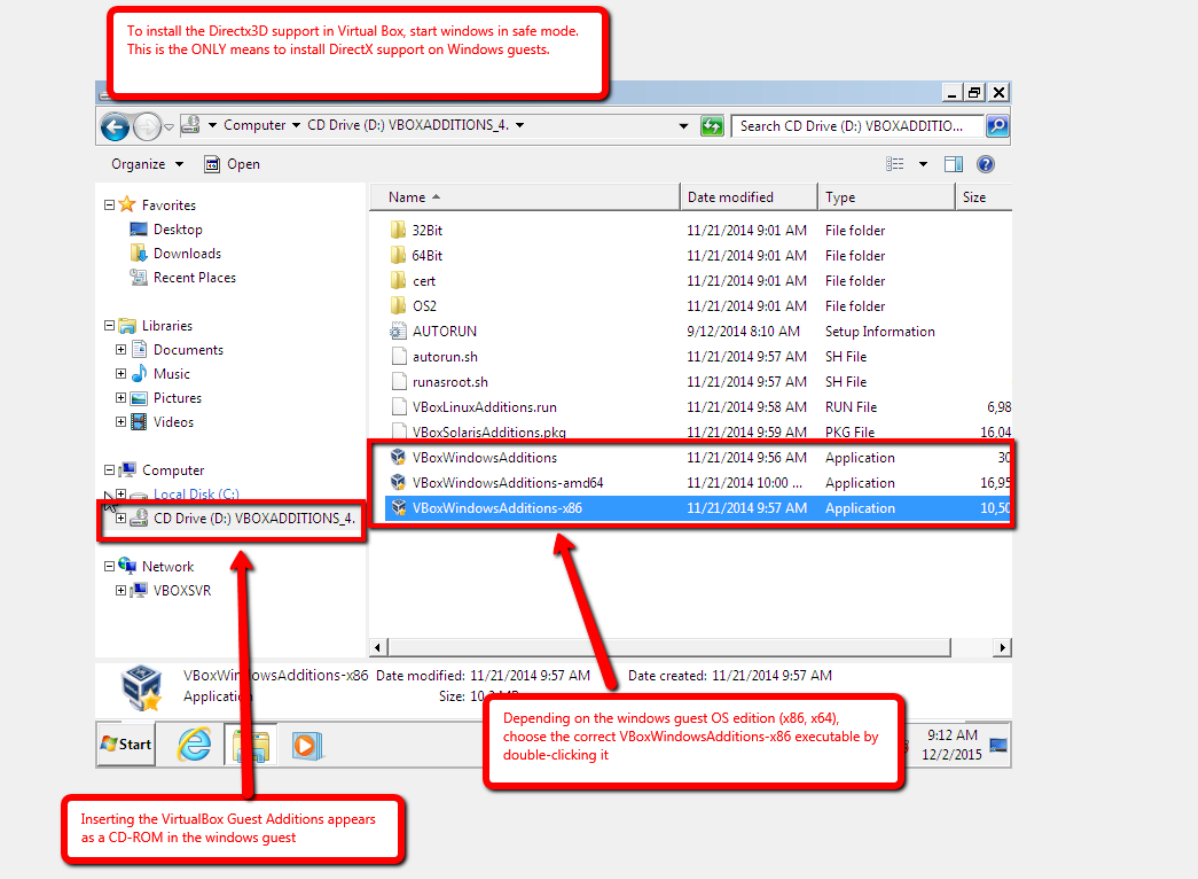


Figure 3 Start Windows Guest in safe mode

Step 3 – Start Virtual Box Guest Additions

Select the proper Guest Additions executable depending if the Windows guest is either 32-bit or 64-bit editions. When started, follow the prompts. Choose the default location for the Guest Installation files.

Step 4 – Select Direct3D Support

Select the Direct3D Support from the Virtual Box Guest Addition. The Virtual Box drivers may have to be approved; they have not been signed. Reboot windows guest after installing the Direct3D support component.

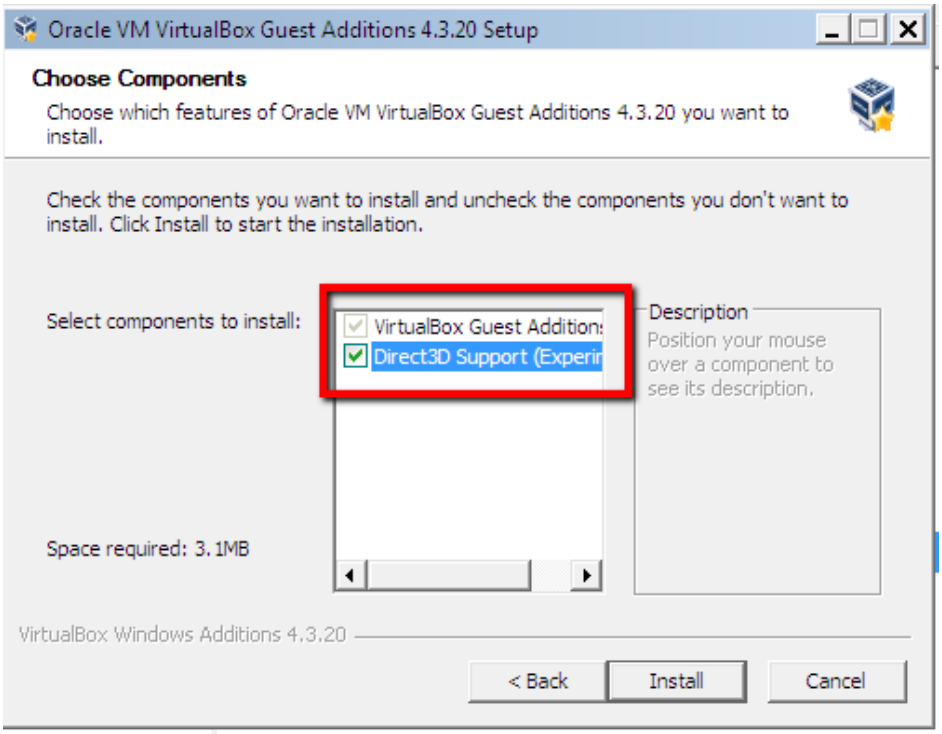


Figure 4 Select Direct3D support component

Step 5 – Verify 3D acceleration is enabled

After rebooting the Windows guest normally, start a CMD prompt window to check if the 3D acceleration is enabled by running **dxdiag**. The screen shot below shows that Direct3D acceleration is enabled.

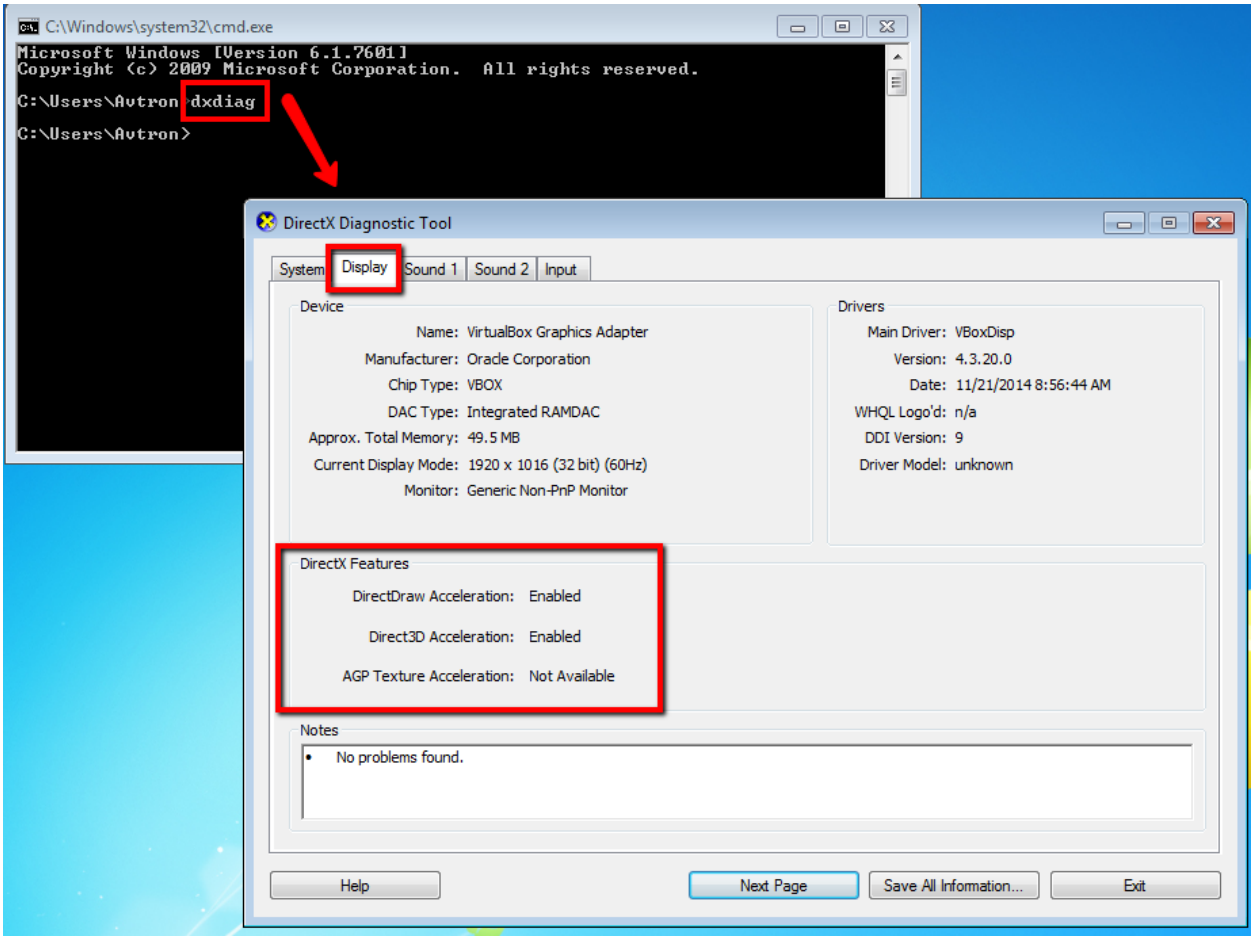


Figure 5 Verify Direct3D acceleration is enabled

Appendix M: Known Bugs and Issues

TFS ID	Description	Workaround
1094	Prompt to save changes in Security Manager when 'Exit' button is selected	This is a mere annoyance. Hit the “Enter” button for each saved file
1096	Prompt to save changes when exiting Network Options	
1340	Signal Analyzer: Saving configuration file while disconnected from the network (after channel is triggered) causes extreme delay	
1679	Block viewer - Q Parameter produces dialog box on first invocation	This is a mere annoyance; the error can safely be ignored
1824	File Maintenance - Opening an ADDapt2000 v12 configuration file while connected serially	If canceled, the existing configuration file disappears. The serial connection still shows.
1632	Offline Drive causes significant slow down	When offline, ADDapt attempts to establish communication with the drive. The retry and delay values are tunable through the COM Tuning option
1884	Analyzer channel numbers on file maintenance screen does not align with drive channel numbers	The ADD32+ analyzer tables use the ADD32 analyzer numbering
1905	Multiple drives can be selected in the block viewer drive selection	Even though multiple drives can be selected in the block drive selection list box, only the first drive’s software blocks are displayed
1908	Block viewer closes before confirming closure of application	Selecting Red 'X' in main ADDapt form closes any open block viewer windows.