SCR Control Board Configuration & Control Tool

User's Manual

UM-0041

About Oztek

Oztek Corp. is proven innovator of power, control, and instrumentation solutions for the most demanding industrial applications. Oztek products include variable motor drives, grid tie inverters, frequency converters, stand alone inverters, DC/DC converters, and DSP based control boards for power control applications.

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Exclusion for Documentation

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1.   Introduction

This document is intended to provide instruction on how to use the SCR Configuration & Control Tool (SCC) with an Oztek OZSCR control board. It describes installation and use of the Graphical User Interface (GUI). The tool provides a simple method for configuring an OZSCR control board, as well as in system programming and monitoring.

1.1   Referenced Documents

Ref.	Document	Description
[1]	UM-0040	OZSCR1x00 User's Manual
[2]	DR-0015	OZSCR1000 Quick Start Guide

1.2   Definitions

GUI	Graphical User Interface
HMI	Human Machine Interface
ISP	In System Programming
SCC	SCR Control Board Configuration Tool
SCR	Semiconductor (or Silicon) Controlled Rectifier

2.   System Requirements

- Microsoft Windows (XP or newer) based PC with either an available Serial Port or USB Port
- .NET Runtime 3.5 or higher (available from http://www.microsoft.com)
- RS-232 to RS-485 Logic Level converter
  ---- OR ----
  USB to RS-485 transceiver (Oztek recommends B & B Electronics' USPTL4-LS, http://www.bb-elec.com)

The SCR Configuration & Control tool uses Microsoft Windows Serial Ports to communicate with OZSCR boards. A converter must be used to communicate with the board via its RS-485 interface.

3. Installation Procedure

Before installing the SCR Configuration & Control tool, be sure to install any necessary drivers for the chosen RS-485 transceiver adapter. For instruction on how to install the drivers, please refer to the product manufacturer's documentation.

After the drivers are installed, the SCC can be installed as follows:

1. Download the SCC setup program, *SW90142_setup_version.exe*, from http://www.oztekcorp.com/product-support/Product-Literature-Technical-Documents (*version* is a string of numbers indicating the version of SCC that will be installed).
2. Double click on *SW90142_setup_version.exe* to open the installer wizard, shown in Figure 1

Figure 1 – SW90142_setup.exe Welcome Screen

3. Pressing the **Next** button will bring up the second screen of the Installer, shown in Figure 2. This lets the user specify the install location's Destination Folder.
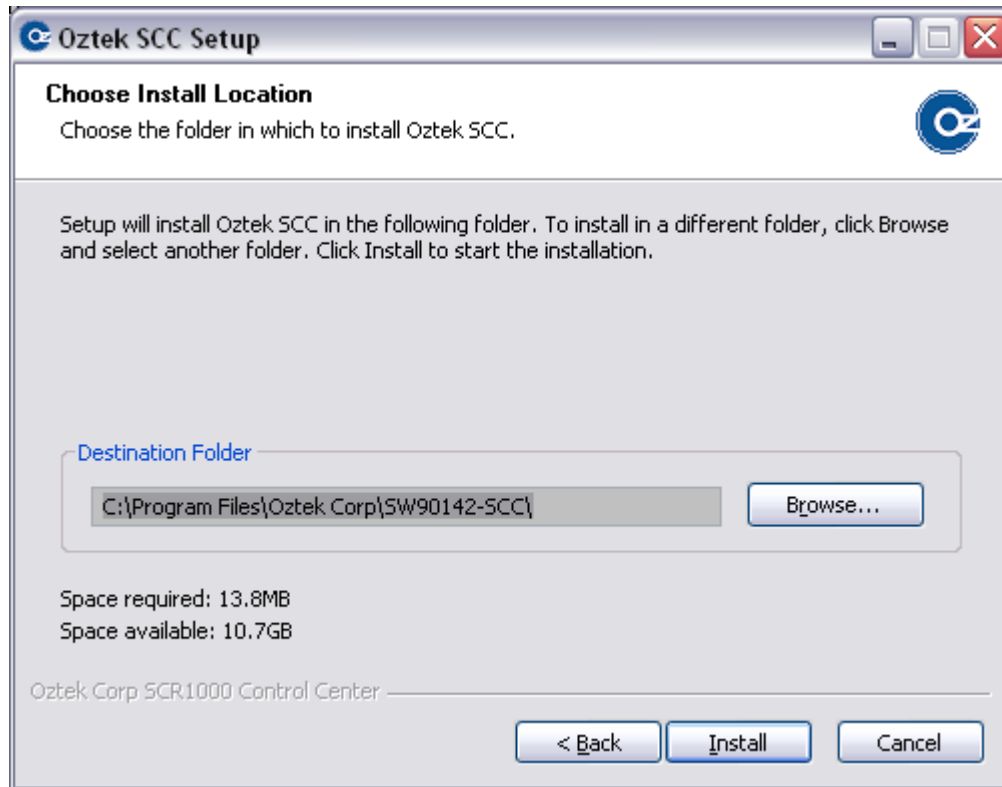
Figure 2 – Specify Installation Folder

4. After specifying the Destination Folder, press **Install** to load the SCC onto the computer. After the installation is completed, the user has the option of running SCC immediately, as shown in Figure 3. The default behavior is to run SCC after a successful install.

Figure 3 – Installation Complete

5. The installation can be canceled at any time by pressing **Cancel**.
6. The installer will place a shortcut on the User's Desktop and create a START menu group called *Oztek Corp -> Oztek SCC*.

The installer will also install an Uninstall application that can be used to later remove SCC. The Uninstaller is located in the Destination Folder, and is called *uninstall.exe*. The Uninstaller can also be accessed via the START menu folder. The user is not required to uninstall a previous version before updating to a newer version of the tool.

4. Using the SCR Configuration & Control Tool

The SCC Tool can be launched by clicking on the Shortcut on the Desktop or in the START menu folder. When SCC is launched, the window shown in Figure 4 will be shown. SCC consists of this Main Window, and several child windows that can be opened within the Main Window. The menu bar and tool bar at the top of the window can be used to access any of the SCC functions. The status bar at the bottom of the window displays useful information to the user.
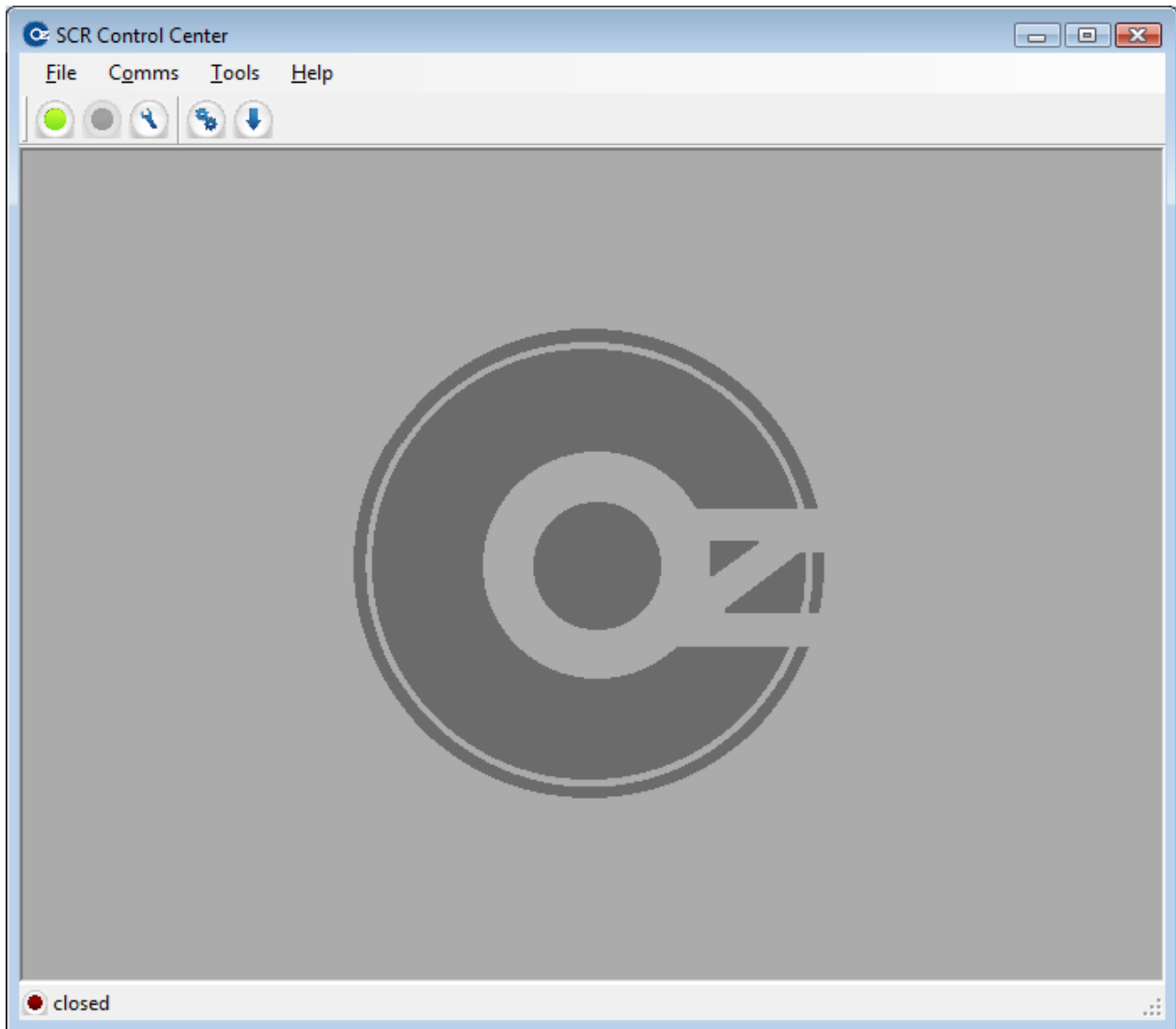
Figure 4 – SCC Default View

4.1   Configuring the Communications Bus

The communications bus can be configured, opened, or closed from either the menu bar or the tool bar.

4.1.1   🔧 Configure Communications

To change the serial port used by SCC, the serial baud rate, or the SCR board's device address, select the *Comms -> Properties* menu item or press the blue wrench 🔧 button on the tool bar. The Communication Properties Dialog window, shown in Figure 5, will be shown.
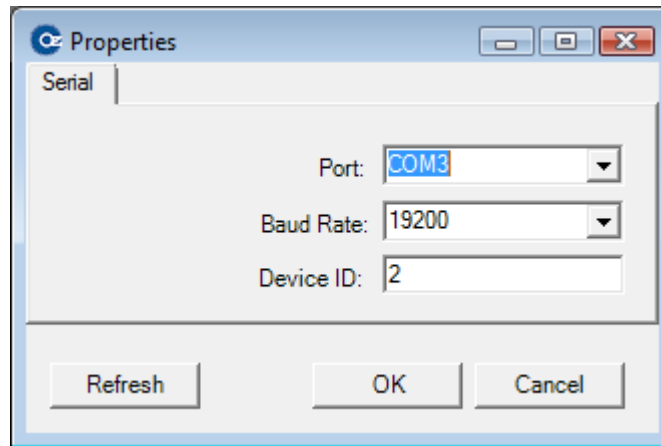
Figure 5 – Communication Properties Dialog

The serial port and baud rate can be changed by selecting from the drop down menus. If the desired serial port is not displayed, insure that your adapter is connected to the computer and press the **Refresh** button to update the list.

The Device ID is a unique identifier used to identify an OZSCR board in a Modbus System. ***By default, every OZSCR has a Device ID of '2'***. The primary reason to change Device ID is to support a system configuration that requires communication with more than one OZSCR board on the same RS-485 network.

Pressing **OK** will save the settings to SCC and reopen the Communications Port if it was previously opened. Pressing **Cancel** will abort any changes made and have no affect on the communications port settings.

4.1.2   Connect Communications

Before using any of the tools in the SCC, communications must be established with the SCR board. This can be done by selecting the *Comms -> Connect* menu item or by pressing the green circle button on the tool bar.

4.1.3   Disconnect Communications

To close the connection to the target board and stop all tools from communicating with the targe , select the *Comms -> Disconnect* menu item or press the red circle button on the tool bar. The target board is automatically disconnected when the program is closed.

4.2   Opening Tools

The various tools that SCC provides can be accessed by either the menu bar's *Tool* item, or by pressing one of the buttons on the tool bar.

4.2.1   Opening the Configuration Tool

The Configuration Tool can be used to modify various settings on the OZSCR board. This tool can be opened by either selecting the *Tools -> Configuration* menu item or by pressing the blue gears button on the tool bar. For more information on the Configuration Tool, see section 5.

4.2.2   Opening the Programming Tool

The Programming Tool can be used to update the OZSCR's Bootloader, PLD Image, or Application Image. This allows the OZSCR board's functionality to be updated in the field. To access the Programming Tool, select the *Tools -> Program* menu item or press the blue down arrow button on the tool bar.

4.3   The Help Menu

The *Help* menu item provides links to the SCC User's manual as well as other literature related to Oztek's SCR controller products. Selecting the *Help -> About* menu item will display version information about SCC. Selecting the *Help -> Target Revision Information* menu item will display information about the target's software when connected.

5.   Using the Configuration Tool

The Configuration Tool can be used to read or modify the various parameters used by the SCR board's application software. These parameters are non-volatile so that once modified, the new value will persist even when power is removed from the SCR board. The ability to easily change these configuration values allows a single SCR board to be adapted to numerous different system topologies. For more details on the various configuration parameters for the SCR board, consult the OZSCR1X00 User's Manual (UM-0040).

When opening the Configuration Tool for the first time after installing the SCC, the tool will display the following message:
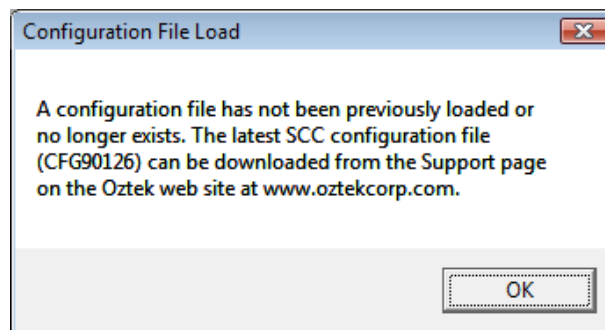
Figure 6 – Running the Configuration Tool for the First Time

As the message indicates, the user must download the latest SCC configuration file from
http://www.oztekcorp.com/product-support/Product-Literature-Technical-Documents.

After clocking the **OK** button, the Configuration Tool will open with no parameters listed as
shown in the following figure:
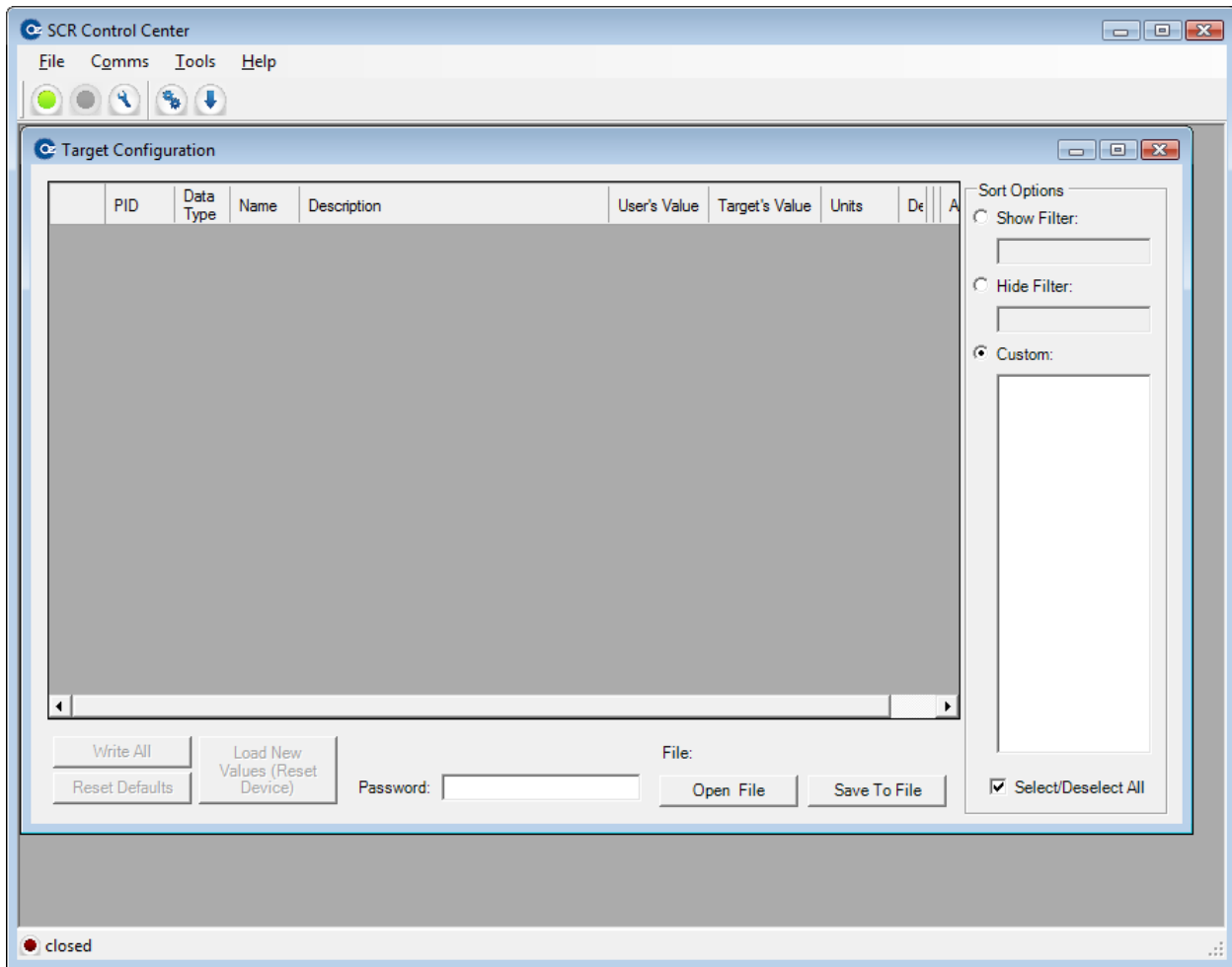
Figure 7 – Configuration Tool Default View

After downloading the latest SCC configuration file (CFG90126), click the **Open File** button on
the bottom of the window to navigate to the location of the desired file. When opened, the
configuration file contents will be displayed as shown in Figure 8.
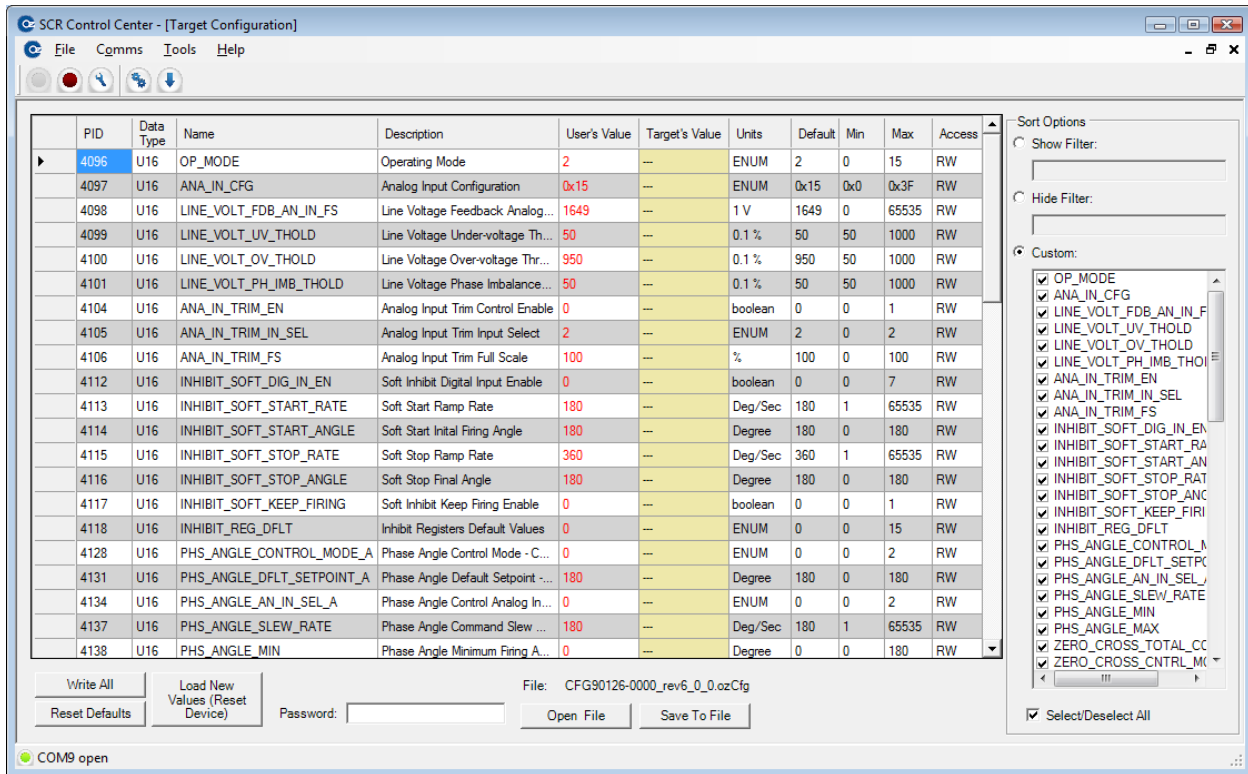
Figure 8 – Parameter Display in the Configuration Tool

As seen in the above figure, the Configuration Tool consists of three sections, the main parameter table, a *Sort Options* section on the right, and a set of control actions at the bottom of the display.

5.1   Configuration Parameter Files

The Configuration Tool uses "Oztek Parameter Config Files" (*.ozCfg*) to store parameter settings. As was described above, the latest factory default file (CFG90126) can be downloaded from the Oztek web site. Once loaded into the Configuration Tool, the parameters may be changed and then saved to a new user-specified file. This allows the system designer to save a set of custom configuration parameter settings that can then be loaded onto other boards at a later time.

5.1.1   Loading a Configuration File

To load a configuration file into the Configuration Tool, press the **Open File** button. A File Dialog Window will be opened. Navigate to the *.ozCfg* file to be loaded, and press **OK**. Once a configuration file is loaded, the Configuration Tool will initially only display the user settings contained in the file. Then the Configuration Tool will attempt to read the corresponding actual parameter values stored on the Target. If successful, the data read from the board will be displayed in the Target's Value column. This process takes a couple of seconds to complete,

during which the data in the User's Value column will be highlighted in red and the Target's Value column will be highlighted in yellow indicating that the Configuration Tool has not completed reading the Target (as seen in Figure 8).

No data is written to the SCR Control board when loading a configuration file. Once the target values are initially read back, any user's value that doesn't match the target's value will be highlighted in RED indicating that this data does not match the target and has not yet been written (see "Write All" operation described later in this document).

5.1.2   Saving a Configuration File

Creating a new custom configuration file is simple: load an existing file, modify the User's Values in the Configuration Tool, and then press the **Save To File** button. A *Save File* dialog will ask what file name and directory to save to. All data in the *User's Value* column in the Configuration Tool will then be saved to the specified file.

> ⚠ **ATTENTION:** Saving to a file only saves what is displayed in the *User's Value* column, not necessarily the actual values on the target OZSCR board.

5.2   The Parameter Table

The parameter table lists the individual parameters and their associated attributes. This section will give a brief description of each of the parameter table columns.

5.2.1   PID

The PID, or Parameter Identifier, is a unique identifier for each parameter. Parameters that have data types of 32-bits actually have two PIDs, one for the least significant word and one for the most significant word. However, the user does not need to be concerned with both PIDs, as the Configuration Tool handles all 32-bit accesses internally.

The user can display the PIDs as either integers (default) or hexadecimal strings. Right-clicking on any PID will display a context menu with the option to *Show Hex*. The menu is shown in Figure 9. Clicking the menu item will change the PID display state.
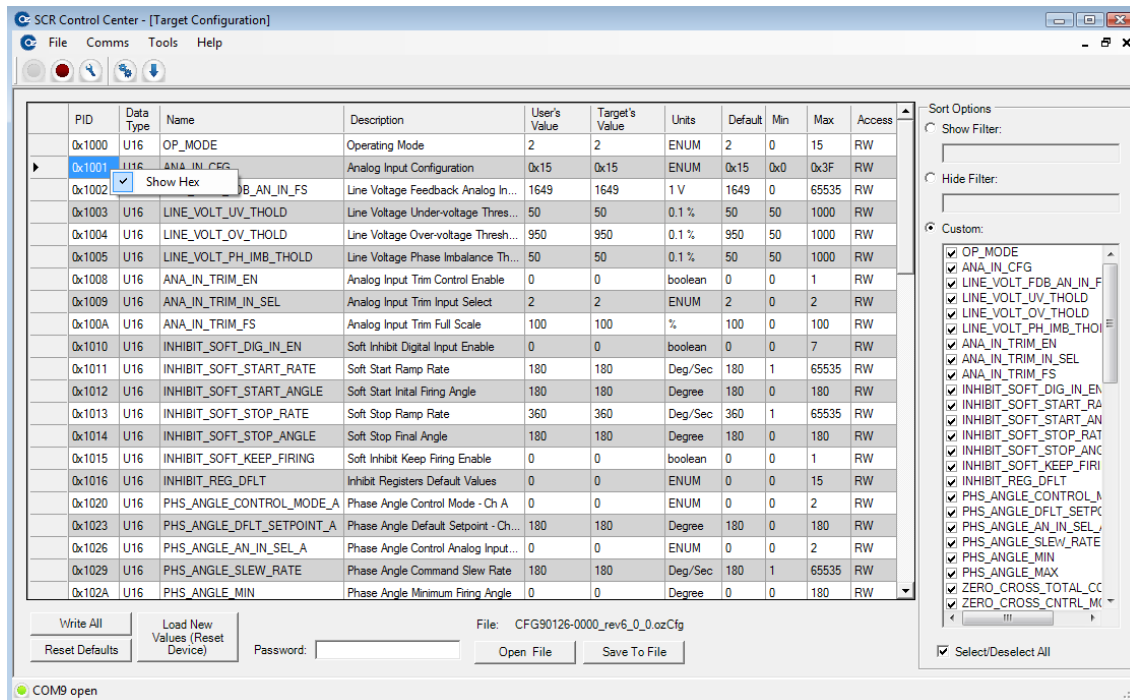
Figure 9 – Changing PID Display to Hexadecimal

5.2.2   Data Type

The Data type specifies the size and type of data for the parameter as follows:

- U16 – unsigned 16-bit value
- S16 – signed 16-bit value
- U32 – unsigned 32-bit value
- S32 – signed 32-bit value

5.2.3   Name

The Name is a unique text identifier given to a parameter. The name is often descriptive to imply its function in the SCR application.

5.2.4   Description

This column gives a brief description of how the parameter is used by the SCR Controller.

5.2.5   User's Value

The *User's Value* column is the only field that can be edited by the user. These cells are limited to numbers in the form of integers, real numbers (with fractional amounts), or hexadecimal characters. Hexadecimal values must be preceded by an 'x' or '0x'. If an invalid value is entered, the field will return to the last valid value.

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Additionally, the Configuration Tool will check to make sure that the entered value falls into the legal range defined by the *Min* and *Max* columns. If the user enters a valid greater than the *Max* value specified, the tool will enter the *Max* value. Likewise, if the user enters a value less than the *Min* value specified, the tool will enter the *Min* value.

When entering a new value for a parameter, ***it is automatically written*** to the target. The tool then reads the parameter back from the target and updates the "Target's Value" cell to confirm that the new value was stored correctly.

The text in the *User's Value* cell will be red whenever the value does not match the target's value with one exception. Parameters that are stored as S32 Q16 numbers contain 16-bits of integer data and 16-bits of fractional data. When the user enters their desired real number, the value loaded into the target will set to the nearest value with a resolution of 2^{-16}. For this reason, the value that is read back may not exactly match the user's value. For example, if the user enters a value of "1.13", this will be stored and read back as "1.129989".

5.2.6   Target's Value

This column displays the value that is stored in the target OZSCR board's non-volatile memory. When a configuration file is first loaded, all parameters will display a "---" in this column indicating that the tool has not yet read these values from the OZSCR board. The tool will then automatically read the target's values and populate this column with actual data. This process may take a couple of seconds when first starting up the tool.

5.2.7   Units

The Units column gives information about the scaling and legal values that a user may enter. Typical units include volts, degrees, amps, percentages, Boolean numbers, etc.

As described earlier, some values have units of Q16. A Q16 value is a method used to store a real number with a fractional amount as a fixed point number. Q16 numbers allocate the most significant 16 bits as the signed integer part of the number and the least significant 16 bits as the fraction part of the number. The Configuration Tool handles all scaling so that the user needs only enter in a real number (i.e. 3.14); the conversion to a fixed point 32-bit Q16 number will be handled internally. Similarly, when displaying the Target's Value, the tool will display the real number for the user.

5.2.8   Default

The *Default* column is used for informational purposes only. It shows the factory default value that is loaded when the user presses the **Reset Defaults** button.

5.2.9   Min

The *Min* column shows the minimum allowed value for a particular parameter. If a user tries to enter a value less than the minimum, the minimum value will be used instead. When the minimum value is enforced, the Error Field (see section 5.2.12) will be temporarily illuminated to inform the user that they entered an illegal value.

5.2.10 Max

The *Max* column shows the maximum allowed value for a particular parameter. If a user tries to enter a value greater than the maximum, the maximum value will be used instead. When the maximum value is enforced, the Error Field (see section 5.2.12) will be temporarily illuminated to inform the user that they entered an illegal value.

5.2.11 Access

The *Access* field indicates whether a parameter is readable or writable. Most parameters are RW, or Read/Write. Some may be Read Only (R) or Write Only (W). Password protected parameters will display a (P) in this column.

5.2.12 Error Field

If an error occurs during data entry or target communication, a red circle ( ) will be temporarily displayed to the left of the PID.

5.3   Sorting Parameters

Because there can be a large number of configuration parameters, there are several methods available to help the user filter which parameters are displayed in the Configuration Tool.

5.3.1   Show Filter

The user can select this filter method by clicking on the radio button labeled *Show Filter*. The text box will now be enabled. Only configuration parameters that contain the text typed into this box will be shown in the window. If no text is entered, all configuration parameters will be displayed. The value entered is case insensitive, so entering "DFLT" or "dflt" will create the same filter.

5.3.2   Hide Filter

The user can select this filter method by clicking on the radio button labeled *Hide Filter*. The text box will now be enabled. Only configuration parameters that do *not* contain the text typed into this box will be shown in the window. If no text is entered, all configuration parameters will be displayed. The value entered is case insensitive, so entering "DFLT" or "dflt" will create the same filter.

5.3.3   Custom Filter

The user can select this filter method by clicking on the radio button labeled *Custom*. The list box will now be enabled. Only configuration parameters that are checked will be displayed. If no boxes are checked, no parameters will be shown in the window. A **Select/Deselect All** option is available at the bottom of the list to aid in quickly selecting all or none.

5.4   Accessing Parameters on the OZSCR Board

Before reading or modifying the OZSCR board's configuration parameters, the communications bus must be opened. If the bus is disconnected, the **Write All, Reset Defaults,** and **Load New Values (Reset Device)** buttons will be disabled.

5.4.1   Writing All Parameters

When the **Write All** button is pressed, the Configuration Tool will attempt to write all of the parameters shown in the parameter table to the OZSCR board's non-volatile memory. This feature is useful when first opening a configuration file that contains several user values that differ from the actual target values. Using this button will force the tool to write every parameter shown in the list to the target board. A typical use for this button is when the user has a custom configuration file that they want to load on multiple boards that were previously loaded with the factory defaults.

The **Write All** operation only updates the non-volatile memory; it does not put the new values into use immediately. The user must press the **Load New Values (Reset Device)** button in order to force the OZSCR controller to use the new values. To help the user remember this step, the **Load New Values (Reset Device)** button will change to red following a **Write All** operation, as shown in Figure 10.
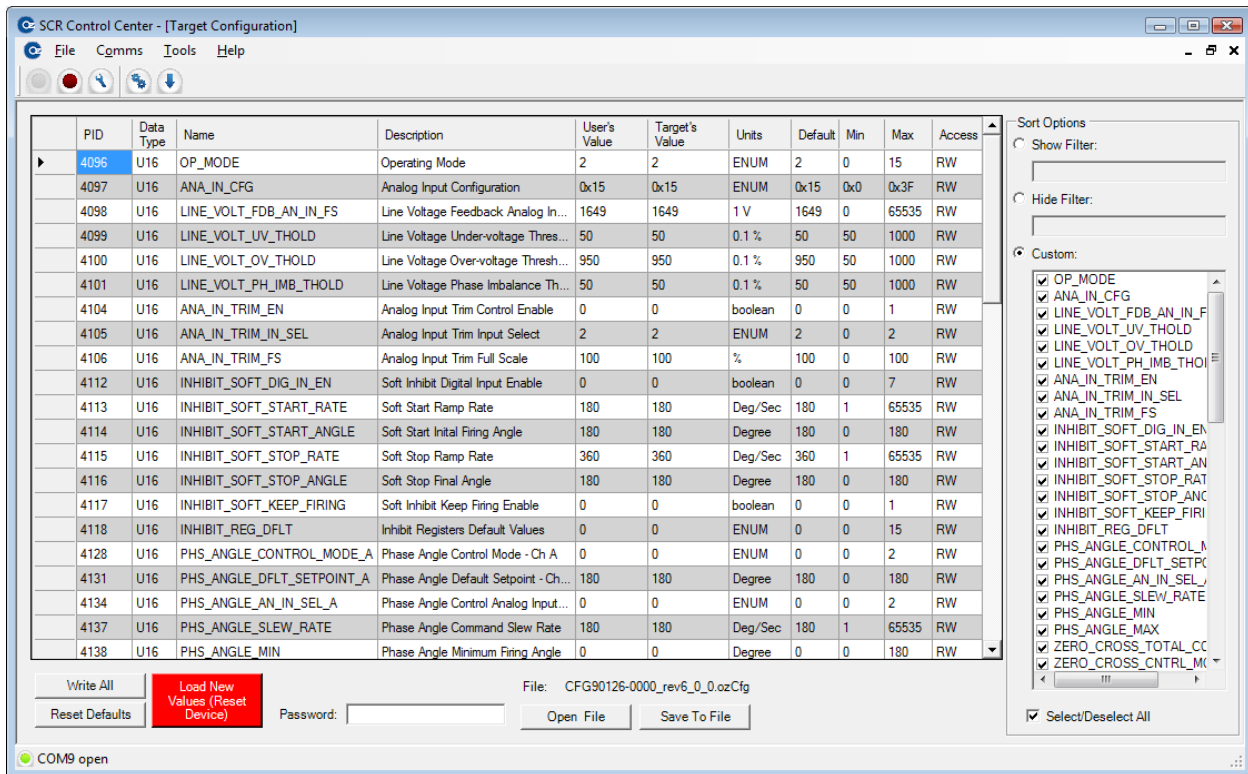
Figure 10 – Configuration Tool Write All "Reload" Reminder

5.4.2   Loading New Target Parameter Values

The **Load New Values (Reset Device)** button causes the OZSCR controller to perform a soft reset. This forces the application to re-read all of the parameters stored in non-volatile memory. This button should be used after the user enters one or more new values in the *User's Value* column, after a **Write All** operation, or after a **Reset Defaults** operation. If the **Load New Values** operation is not used, any changes to non-volatile memory will *not* affect operation until the next time the OZSCR board is powered up. If the **Load New Values** button was previously highlighted in red, it will return to normal following a successful reload operation.

> ⚠ **ATTENTION:** The **Load New Values** operation will only be executed by the target OZSCR board if it is not presently operating (i.e. firing is INHIBITED) – otherwise the command is ignored.

5.4.3   Reset to Factory Default Parameters

The **Reset Defaults** button allows the user to return all parameters to their specified factory defaults. Factory reset requires the user to enter a password in order to avoid unintentionally

resetting the configuration parameters to the factory default values. Before pressing the **Reset Defaults** button, enter the value **"795A"** in the text box labeled *Password*.

The **Reset Defaults** operation only updates the non-volatile memory; it does not put the new values into use immediately. To load the new values, the user must press the **Load New Values** button. To help the user remember this step, the **Load New Values** button background will change to red, as shown in Figure 10.
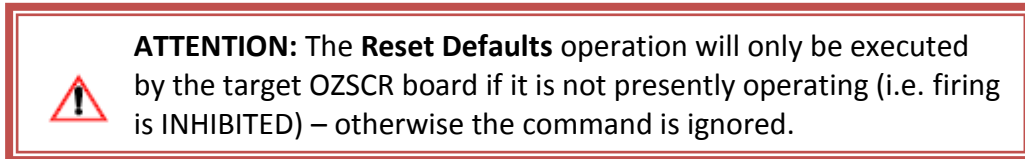
> ⚠️ **ATTENTION:** The **Reset Defaults** operation will only be executed by the target OZSCR board if it is not presently operating (i.e. firing is INHIBITED) – otherwise the command is ignored.

6.   Using the Programming Tool

The Programming Tool provides in-system programming of the various embedded applications on the OZSCR Control Board:

- FW90147 – OZSCR Programmable Logic Device Image
- SW90126 – OZSCR Main Application Image
- SW90139 – OZSCR Embedded Bootloader

The Programming Tool is displayed by selecting the *Tools -> Program* menu item or by hitting the Program Device toolbar button (⬇). The programming window is shown in the figure below.
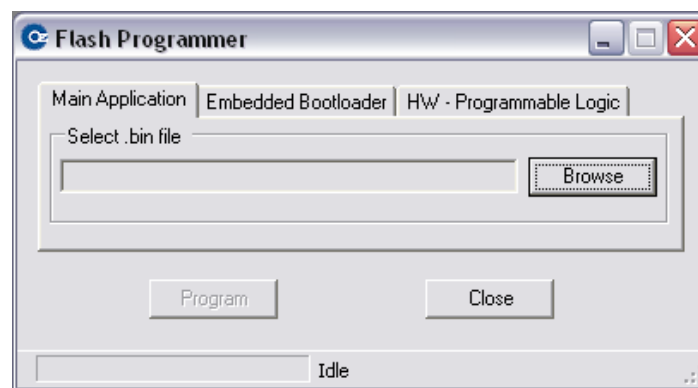
Figure 11 – Programming Tool Window

When the Programming Tool is launched, it disables all other features of the SCC main window. This is to prevent any accidental communications from any of the other SCC tools while the controller is being reprogrammed. The communication properties are also disabled, therefore it

is very important to configure the Serial Port and Device ID prior to launching the Programming Tool.

To exit the Programming Tool, press the **Close** button when the programming operation is complete. The tool automatically remembers the files that were previously chosen to simplify configuration the next time the tool is used.

6.1   Main Application Programming Instructions

To reprogram the main OZSCR application (SW90126), follow these instructions:

1. Configure the communication settings.
2. Power up the OZSCR board.
3. Open the Programming Tool.
4. Select the *Main Application* Tab.
5. Press the **Browse** button - this will open a File Dialog Window. Navigate to the *SW90126_revMM_mm.bin* file (available from the Oztek web site). After selecting the file, press **OK**.
6. Verify that the OZSCR board is powered.

> ⚠ **ATTENTION:** It is extremely important to not remove power from the OZSCR board during the reprogramming operation.

7. Press the **Program** button. The Tool will connect to the embedded bootloader and begin the operation of updating the main application. The status will be displayed at the bottom of the window, as shown in the figure below. The OZSCR board will also blink an LED to indicate that programming is in process. The update will take a few minutes to complete.
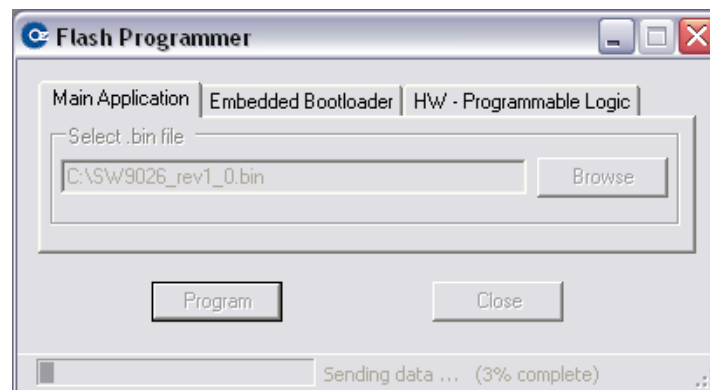
Figure 12 – In System Programming in Process

8. If no errors occur, a message box will be displayed indicating that reprogramming was a success. The application is automatically restarted after a successful reprogramming

attempt. If an error occurs while downloading, a message box will be displayed with a brief description of the problem. If downloading fails, the SCR image will most likely be invalid and the bootloader will not allow execution of the new image. In this case, the user should double check their connection with their target board and attempt to reload the application.

> ⚠️ **ATTENTION:** To avoid communications errors during the downloading process, it is critical that the RS-485 bus connected to the target OZSCR board be properly terminated at both ends. See the OZSCR1x00 User's Manual (UM-0040) for further details

6.2   Embedded Bootloader Programming Instructions

Field updates to the embedded bootloader (SW90139) are expected to be very infrequent. In the event that the bootloader does need to be updated, follow these instructions:

1. Configure the communication settings.
2. Power up the OZSCR board.
3. Open the Programming Tool.
4. Select the *Embedded Bootloader* Tab.
5. Press the **Browse** button. This will open a File Dialog Window. Navigate to the *SW90139_revMM_mm.bin* file (available from the Oztek web site). After selecting the file, press **OK**.
6. Verify that the OZSCR board is powered.

> ⚠️ **ATTENTION:** It is extremely important to not remove power from the OZSCR board during the reprogramming operation.

7. Press the **Program** button. The tool will connect to the embedded bootloader and begin the operation of updating the bootloader itself. The status will be displayed at the bottom of the window. The OZSCR board will also blink an LED to indicate that programming is in process. The update will take several seconds to complete.
8. If no errors occur, a message box will be displayed indicating the reprogramming was a success. After the Bootloader is successfully, programmed, the OZSCR board will jump to its main application. ***If an error occurs during the bootloader update, the bootloader itself will likely be invalid and your board may fail to start up. If this occurs, the board will need to be sent to the factory to be erased and reprogrammed. Therefore it is absolutely critical that the RS-485 bus be properly terminated, that the controller's***

power remain ON, and that the SCC Programming Tool not be interrupted during the bootloader update.

6.3   PLD Hardware Programming

Updating the PLD on the OZSCR controller is not yet supported by the Programming Tool.

Warranty and Product Information

Limited Warranty

What does this warranty cover and how long does it last? This Limited Warranty is provided by Oztek Corp. ("Oztek") and covers defects in workmanship and materials in your OZSCR controller. This Warranty Period lasts for 18 months from the date of purchase at the point of sale to you, the original end user customer, unless otherwise agreed in writing. You will be required to demonstrate proof of purchase to make warranty claims. This Limited Warranty is transferable to subsequent owners but only for the unexpired portion of the Warranty Period. Subsequent owners also require original proof of purchase as described in "What proof of purchase is required?"

What will Oztek do? During the Warranty Period Oztek will, at its option, repair the product (if economically feasible) or replace the defective product free of charge, provided that you notify Oztek of the product defect within the Warranty Period, and provided that through inspection Oztek establishes the existence of such a defect and that it is covered by this Limited Warranty.

Oztek will, at its option, use new and/or reconditioned parts in performing warranty repair and building replacement products. Oztek reserves the right to use parts or products of original or improved design in the repair or replacement. If Oztek repairs or replaces a product, its warranty continues for the remaining portion of the original Warranty Period or 90 days from the date of the return shipment to the customer, whichever is greater. All replaced products and all parts removed from repaired products become the property of Oztek.

Oztek covers both parts and labor necessary to repair the product, and return shipment to the customer via an Oztek-selected non-expedited surface freight within the contiguous United States and Canada. Alaska, Hawaii and locations outside of the United States and Canada are excluded. Contact Oztek Customer Service for details on freight policy for return shipments from excluded areas.

How do you get service? If your product requires troubleshooting or warranty service, contact your merchant. If you are unable to contact your merchant, or the merchant is unable to provide service, contact Oztek directly at:

> USA
> Telephone: 603-546-0090
> Fax: 603-386-6366
> Email techsupport@oztekcorp.com

Direct returns may be performed according to the Oztek Return Material Authorization Policy described in your product manual.

What proof of purchase is required? In any warranty claim, dated proof of purchase must accompany the product and the product must not have been disassembled or modified without prior written authorization by Oztek. Proof of purchase may be in any one of the following forms:

• The dated purchase receipt from the original purchase of the product at point of sale to the end user
• The dated dealer invoice or purchase receipt showing original equipment manufacturer (OEM) status
• The dated invoice or purchase receipt showing the product exchanged under warranty

What does this warranty not cover? Claims are limited to repair and replacement, or if in Oztek's discretion that is not possible, reimbursement up to the purchase price paid for the product. Oztek will be liable to you only for direct damages suffered by you and only up to a maximum amount equal to the purchase price of the product. This Limited Warranty does not warrant uninterrupted or error-free operation of the product or cover normal wear and tear of the product or costs related to the removal, installation, or troubleshooting of the customer's electrical systems. This warranty does not apply to and Oztek will not be responsible for any defect in or damage to:

a) The product if it has been misused, neglected, improperly installed, physically damaged or altered, either internally or externally, or damaged from improper use or use in an unsuitable environment

b) The product if it has been subjected to fire, water, generalized corrosion, biological infestations, or input voltage that creates operating conditions beyond the maximum or minimum limits listed in the Oztek product specifications including high input voltage from generators and lightning strikes

c) The product if repairs have been done to it other than by Oztek or its authorized service centers (hereafter "ASCs")

d) The product if it is used as a component part of a product expressly warranted by another manufacturer

e) The product if its original identification (trade-mark, serial number) markings have been defaced, altered, or removed

f) The product if it is located outside of the country where it was purchased

g) Any consequential losses that are attributable to the product losing power whether by product malfunction, installation error or misuse.

Disclaimer

Product

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Return Material Authorization Policy

Before returning a product directly to Oztek you must obtain a Return Material Authorization (RMA) number and the correct factory "Ship To" address. Products must also be shipped prepaid. Product shipments will be refused and returned at your expense if they are unauthorized, returned without an RMA number clearly marked on the outside of the shipping box, if they are shipped collect, or if they are shipped to the wrong location.
When you contact Oztek to obtain service, please have your instruction manual ready for reference and be prepared to supply:

> • The serial number of your product
> • Information about the installation and use of the unit
> • Information about the failure and/or reason for the return
> • A copy of your dated proof of purchase

Return Procedure

Package the unit safely, preferably using the original box and packing materials. Please ensure that your product is shipped fully insured in the original packaging or equivalent. This warranty will not apply where the product is damaged due to improper packaging. Include the following:

> • The RMA number supplied by Oztek clearly marked on the outside of the box.
> • A return address where the unit can be shipped. Post office boxes are not acceptable.
> • A contact telephone number where you can be reached during work hours.
> • A brief description of the problem.

Ship the unit prepaid to the address provided by your Oztek customer service representative.

If you are returning a product from outside of the USA or Canada - In addition to the above, you MUST include return freight funds and you are fully responsible for all documents, duties, tariffs, and deposits.

Out of Warranty Service

If the warranty period for your product has expired, if the unit was damaged by misuse or incorrect installation, if other conditions of the warranty have not been met, or if no dated proof of purchase is available, your unit may be serviced or replaced for a flat fee. If a unit cannot be serviced due to damage beyond salvation or because the repair is not economically feasible, a labor fee may still be incurred for the time spent making this determination.

To return your product for out of warranty service, contact Oztek Customer Service for a Return Material Authorization (RMA) number and follow the other steps outlined in "Return Procedure".

Payment options such as credit card or money order will be explained by the Customer Service Representative. In cases where the minimum flat fee does not apply, as with incomplete units or units with excessive damage, an additional fee will be charged. If applicable, you will be contacted by Customer Service once your unit has been received.