EASYPRO1GEVB

EasyPro 3.2 Evaluation Board User's Manual

ON Semiconductor®

http://onsemi.com

EVAL BOARD USER'S MANUAL

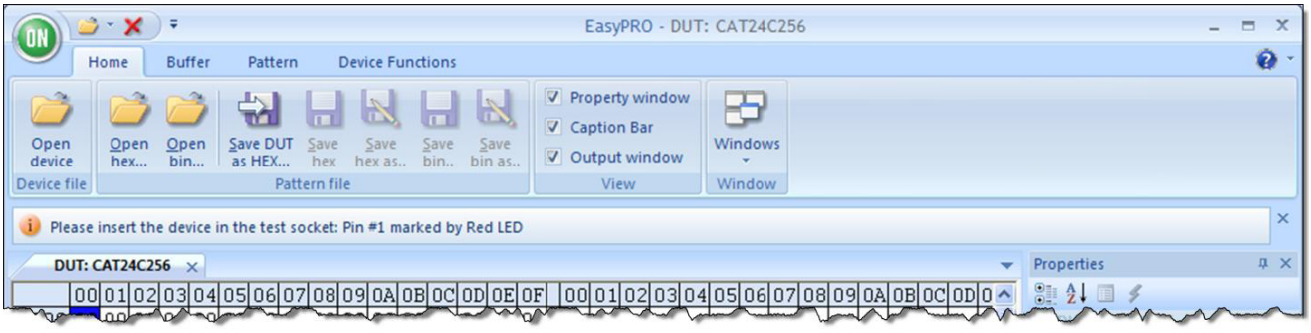
Programming and Evaluation Tool for Serial EEPROMs

What is EasyPRO?

EasyPRO is an easy-to-use, software-driven device programmer that is controlled and powered from the standard USB port of a PC. Designed as an extremely portable module (no bigger than a cell phone), the programmer provides a user-friendly tool for designers, service professionals and dealers.

How easy is it to use?

The new EasyPRO user interface provides a much easier way to find buttons and options required to run the test.



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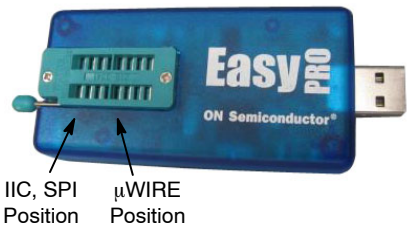
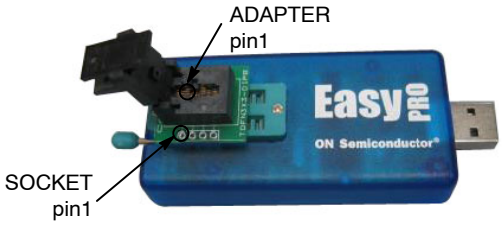
How can EasyPRO help me?

EasyPRO allows you to write and read the content of the memory device (IIC, SPI and uWIRE) with either predefined patterns or your custom patterns.



What devices can EasyPRO support?

EasyPRO supports ON Semiconductor serial EEPROM devices, as well as competitor-equivalent products. The programmer is designed to support 8-pin devices in PDIP package. Other packages are supported using the appropriate test socket adapter.



What features are available?

EasyPRO programs and reads the content of the memory device for ON Semiconductor serial EEPROMs. Choose and open the device file from the list available in “Devices” folder.

To write or verify the data to or from the memory, an internal data ***Buffer*** is available. The buffer size is equal to the memory size of the selected device. The buffer content is shown in hexadecimal format in the left panel and as ASCII characters in the right panel, under DUT / Buffer tab. The buffer content is user editable or can be loaded with a specific data file (predefined or custom pattern).

To program data into the memory or to verify memory content, the “Write”, “Read” and “Verify” functions are available under ***Device Functions*** menu.

By clicking the “Write” button, the data previously loaded in the buffer will be written into the memory device under test. By clicking the “Read” button, the data read from the memory under test will be loaded into the data buffer.

The “Verify” function is used to verify that programming has been correctly performed and that the memory content is identical to the data buffer. The total number of errors will be displayed in the “Output” messages window and the failed locations are marked in red in the buffer window. If the data read from the memory is identical to the data buffer, the message “Done with no differences” will be displayed.

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INSTALLATION

Program Installation

Do not connect the EasyPRO tester to the computer prior to installing the application software.

EasyPRO 3.2 software requires the following system configuration:

- Microsoft Windows XP or above
- 20 MB of available hard disk space to install and run EasyPRO software
- USB 1.1 or USB 2.0 port interface

In order to install the program, click on the **Install Software** button from the EasyPRO Quick-Start Kit CD-ROM or double click on the Setup file found in the installation kit.

It is possible that you will be asked if it is safe to run this program. Choose **Run** and the setup process begins. If you change your mind and you want to cancel the setup process, choose **Cancel** (this can also be done in any screen) and the installation will be terminated after your choice. If you want to continue, choose **Next**.

In the next screen you can edit some of the installation parameters, such as the location for the program. You can browse for a new location or type it in the corresponding field. By default the program will be installed and available only for the current user of the computer. It is possible to change this setting if desired. Also you can see the disk requirements to install this program. Choose **Next**.

The next screen asks you if you want to start the installation. If you want to change some parameters, hit **Back** and change them. If everything was setup ok, choose **Next** and the installation process begins.

If during this process you are prompted to accept the installation (because the driver is not digitally signed) choose **Continue Anyway**.

The installation is now complete and you may attach the tester to the computer. *The program is also running without the device attached to the computer.*

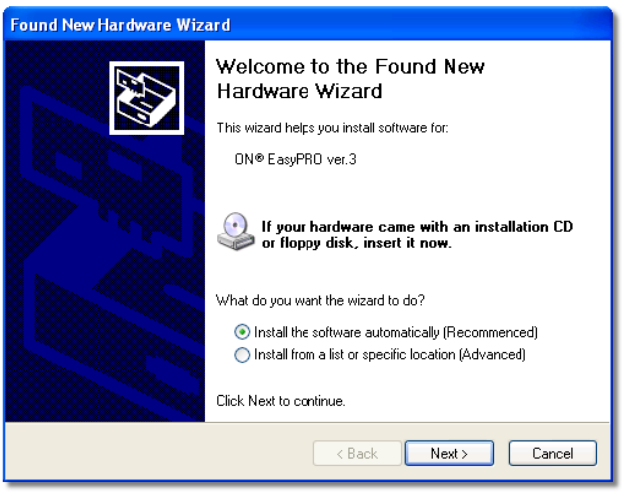
Driver Installation

The EasyPRO tester may be plugged directly into the USB port or connected by USB cable.

Once the EasyPRO tester is connected to the computer, the **Found New Hardware** wizard will appear on the computer.

Choose the **automatic** installation or **install from a list or a specific location**.

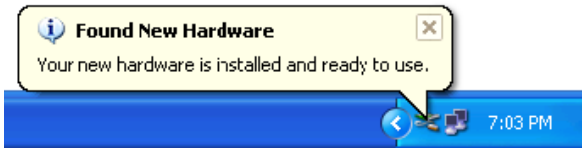
If you wish to use this option, you can find the driver in the location where your program is installed, in the Driver folder.



If you choose the automatic installation, hit **Next** and the wizard begins searching for available drivers. A screen may appear telling you that the driver is not digitally signed. Choose **Continue Anyway**.

The driver will be installed. In the last screen just hit **Finish**.

The EasyPRO tester and the computer are now ready to be used.



FIRMWARE

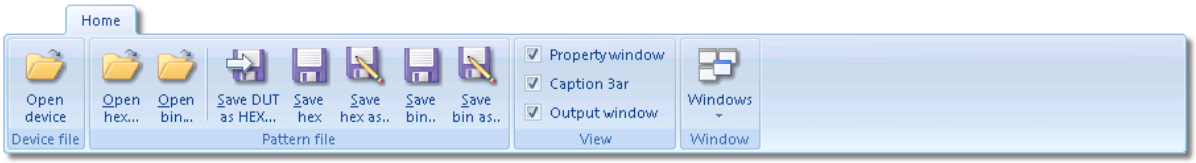
In order to start the EasyPRO program, you can either **double click the desktop icon**, or go to the **Start menu > Programs > ON Semiconductor > EasyPRO 3.2 > EasyPRO.**

If this is the first time you use the EasyPRO, it is very possible that the firmware needs to be updated. Whenever a new version of the software kit comes out, the tester firmware is updated. When launched, the program automatically searches if new firmware is on the computer, and, if there is, prompts you to agree with the update.

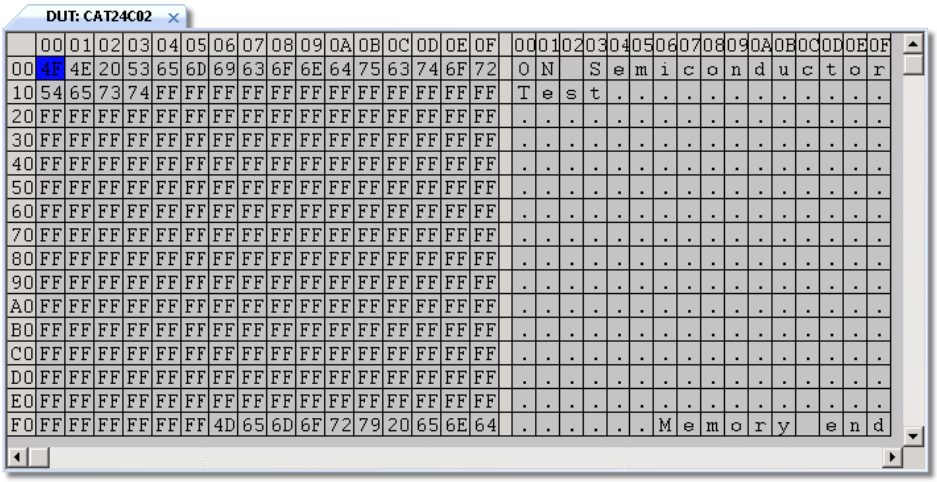
Hit **YES** and the program automatically updates the firmware. In the output window you can follow the update progress. If you do not update the firmware, the EasyPRO may not work correctly.

OVERVIEW

EasyPRO

1.


2.

3.


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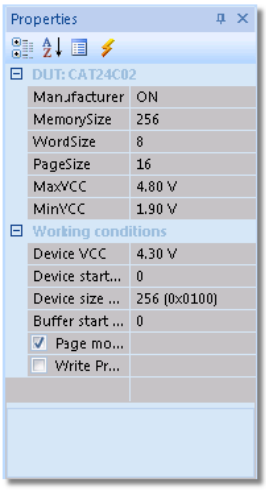
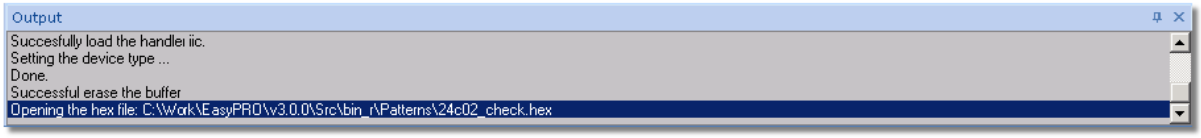


5.


6.

Legend:
1. Ribbons
2. Caption Bar
3. Tabs
4. Properties Panel
5. Output Window
6. Progress Bar

PANELS

Properties Panel

DUT Details

These fields show you some memory characteristics as defined in .dev file, such as minimum and maximum VCC that can be used with this part, memory size etc. They are not user editable.

Working Conditions

These fields show you the operating conditions with the tested device. They are a copy of operating conditions as set in the Device Functions ribbon. Only Specific details may be edited here.

Output Panel

Shows you different messages. All output messages, also ERROR messages, are displayed here.

Caption Panel

Shows you different useful tips after executing a function.

TABS

DUT Tab

It is the interface between the program and the DUT (memory).

Any write command takes the data from this tab and any read command outputs the data into this tab.

It can be edited in the hex mode (left panel) or by entering the ASCII characters (right panel).

The content of this tab can be written, exported to a HEX file or copied into the File tab.

File Tab

Allows you to work with pattern files. You can load, modify and/or save the pattern files, or transfer them into the DUT tab. It can be edited in the hex mode (left panel) or by entering the ASCII characters (right panel).

DUT: CAT24C02 | File: 24c02_check.hex

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
10	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
20	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
30	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
40	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
50	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
60	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
70	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
80	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
90	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
A0	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B0	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
C0	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
D0	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E0	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
F0	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U

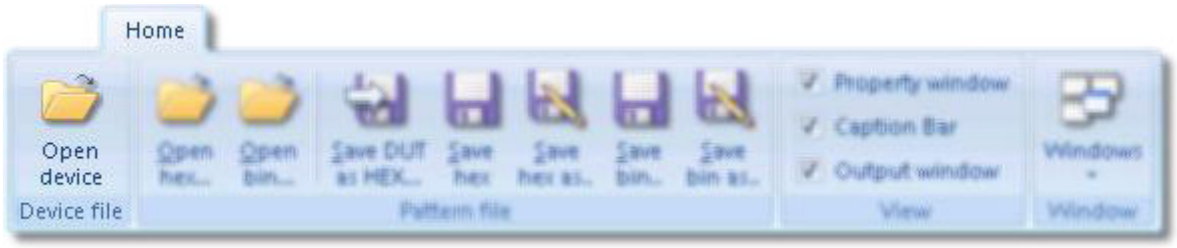
RIBBONS

Home

Contains the most commonly used functions

Open Device

Open Device - prompts you to open a dev file.

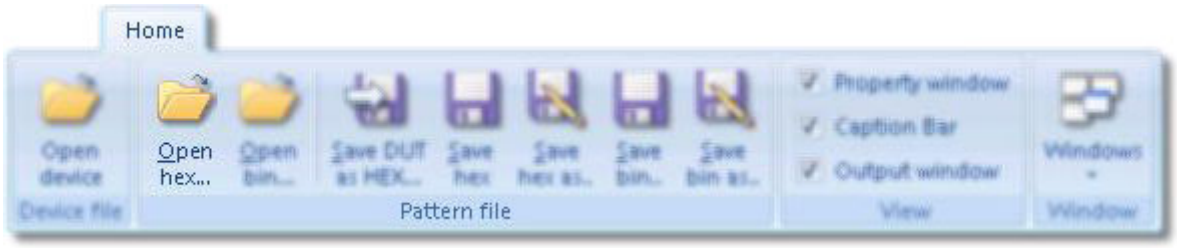


It will be opened in the DUT tab, filled by default with “0”.

If another .dev file was already opened, the previous will be closed and the new one will be opened instead. Also, if there was a File tab opened, it is closed prior to opening the new device. This function is automatically run when the EasyPRO program is launched.

Open Hex

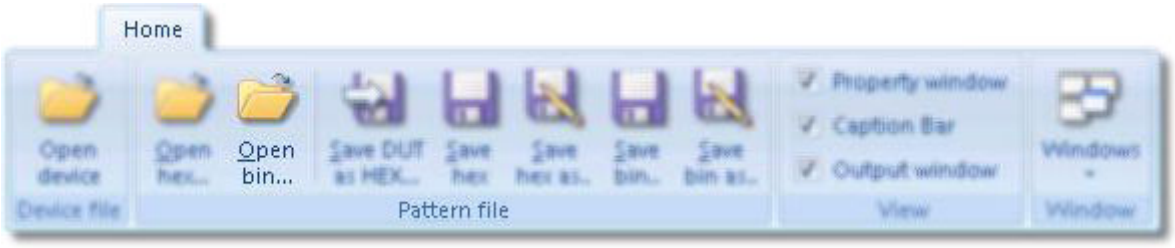
Open hex - prompts you to open a hex file, which will be opened in the File tab, where it can be edited if desired.



If there was no file opened until using this function, the File tab is opened with the content of the file. If a file is already opened, it is closed and the new one is opened instead.

Open Bin

Open Bin - prompts you to open a bin file, which will be opened in the File tab, where it can be edited if desired.

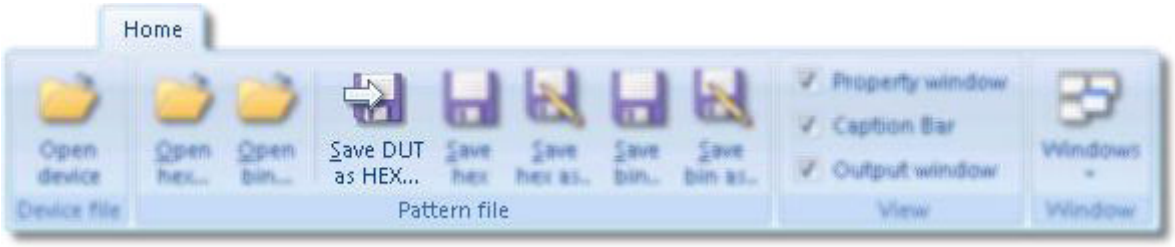


If there was no file opened until using this function, the File tab is opened with the content of the file. If a file is already opened, it is closed and the new one is opened instead.

Save DUT as HEX…

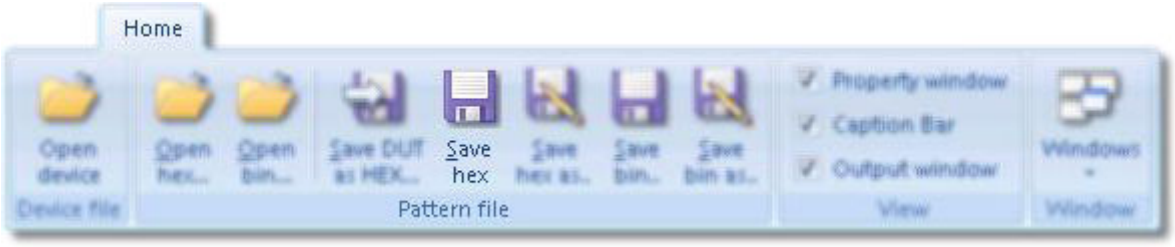
Save DUT as Hex - allows you to save the content of the DUT tab (the DUT memory mirror) into a hex file

The default location when saving this file is the Patterns directory under the EasyPRO location on your disk.



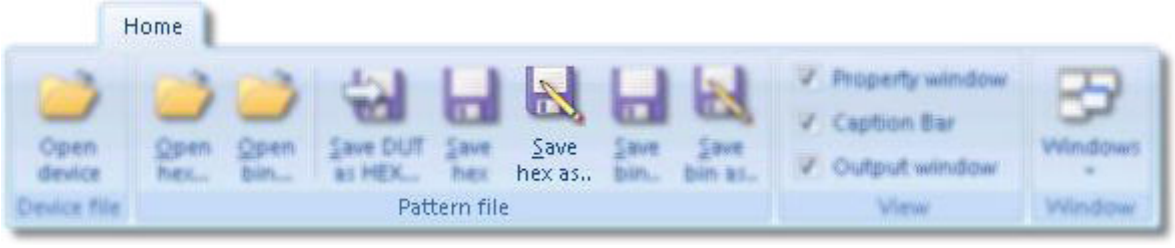
Save Hex

Save Hex - saves the hex file you edited in the File tab. Remember that this function overwrites the current file. If you want to save the file under a different name, use Save hex as function



Save Hex as…

Save Hex as - allows you to save the opened hex file with another name, without modifying the original one. You are prompted to enter the location for saving, also the new name of the file.



Save Bin

Save Bin - saves the bin file you edited in the File tab Remember that this function overwrites the current file. If you want to save the file under a different name, use Save bin as function

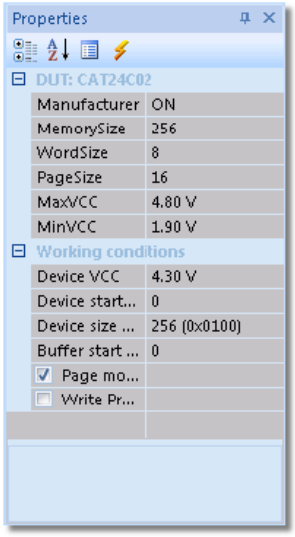
Save Bin as…

Save bin as - allows you to save the opened bin file with another name, without modifying the original one. You are prompted to enter the location for saving, also the new name of the file.

Property Window Button

Property Window - This button opens and/or closes the properties window.

In this window you will find a brief description of the part you selected. This fields are non editable. The working conditions are also shown here. You can edit the specific details, i.e. Page Mode and Write Protect. You can expand or collapse the categories using the + or – signs.



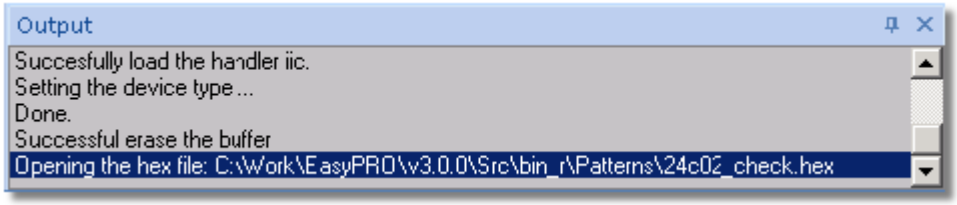
Caption Bar Button

Caption Bar - This button opens and/or closes the caption bar.

This bar shows you different useful tips after executing a function.

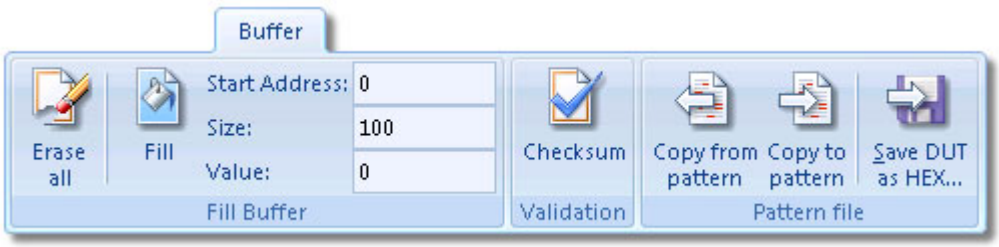
Output Window Button

Output Window - In this window are displayed all messages, including error messages.



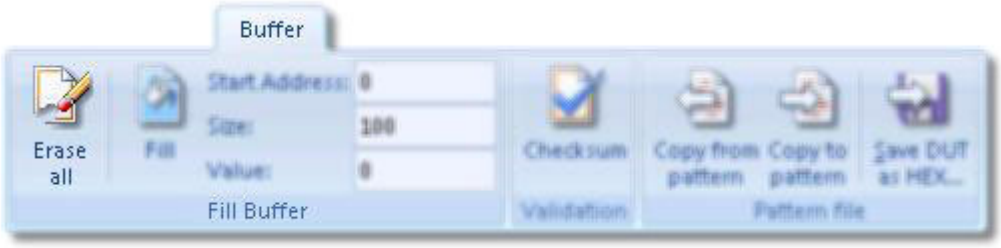
Buffer

Allows you to manage the data in the DUT tab



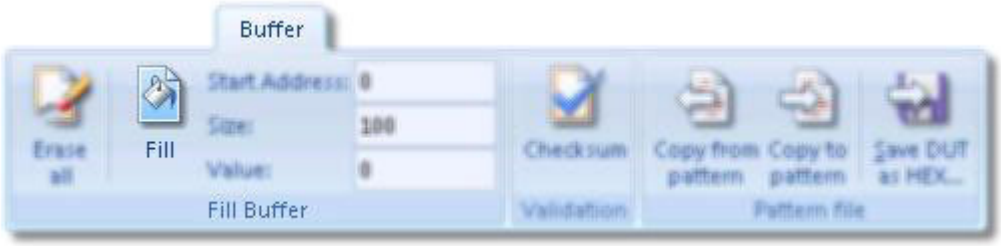
Erase All

Erase All - clears the entire tab (filling with 0xFF), regardless of the Fill options.



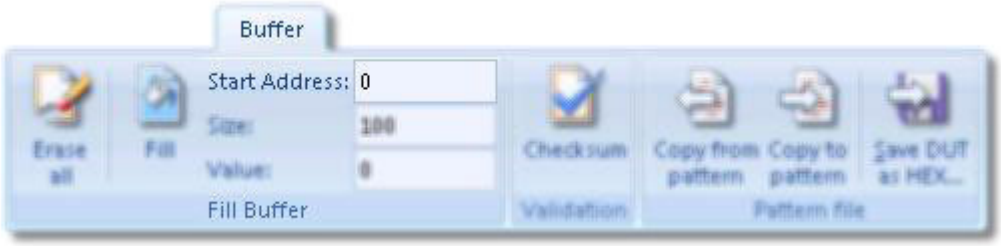
Fill

Fill - you can fill the entire DUT tab, or just a section of it with a desired value. Start Address - the address from where to begin the fill operation. Size - number of bytes to fill beginning with the start address. Value - the desired value to fill the buffer.



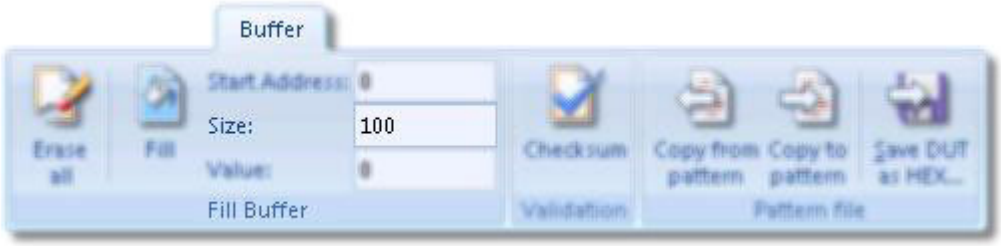
Start Address

Start Address - the address from where to begin the fill operation.



Size

Size - number of bytes to fill beginning with the start address.



Value

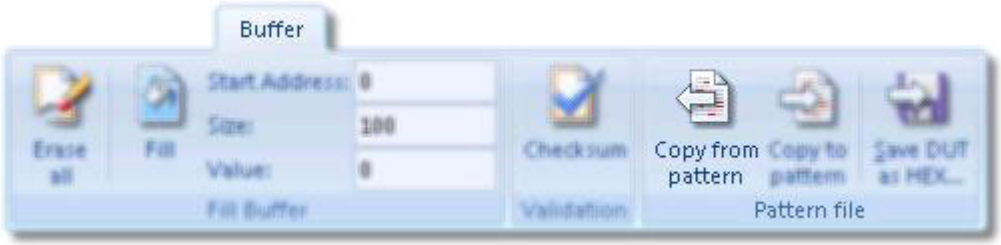
Value - the desired value to fill the buffer.

Checksum

Checksum - makes the sum of all words in the DUT tab and displays it in the output window. This information may be useful for faster comparison of the data inside the DUT. For a more rigorous check, use Verify, but it needs more time to complete.

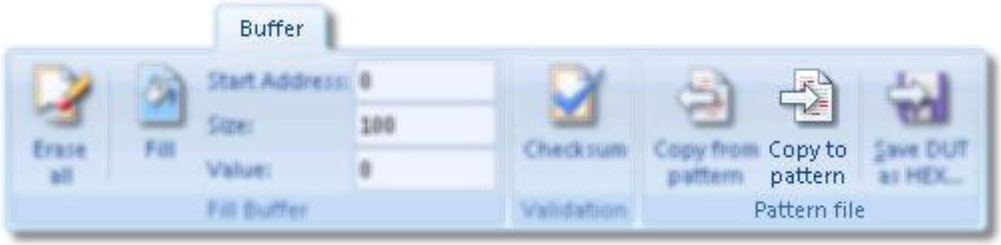
Copy from Pattern

Copy from Pattern - copies the content of the File tab to DUT tab. This is useful for writing a given pattern into the device. Once the data is in the DUT tab, it can be written into the device.



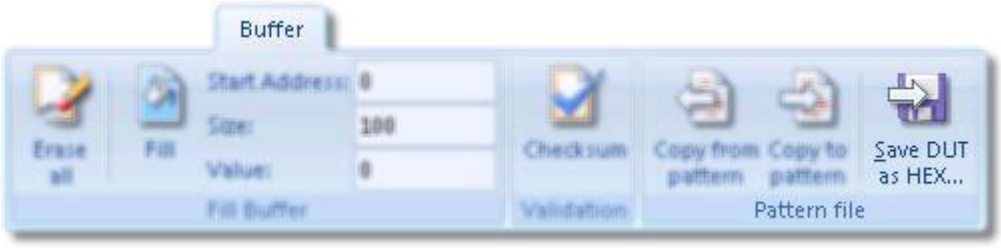
Copy to Pattern

Copy to Pattern - copies the content of the DUT tab to File tab. This operation is useful to keep a backup copy of the DUT tab.



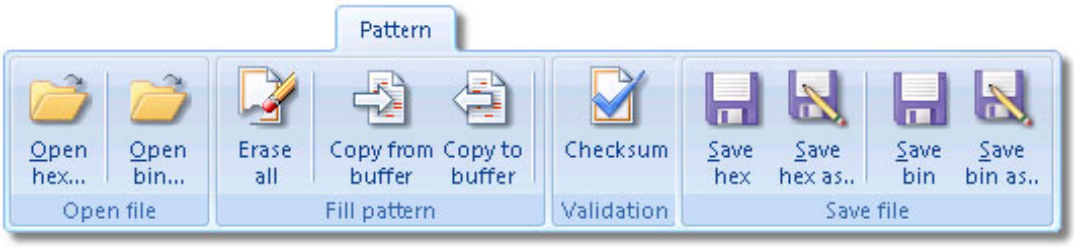
Save DUT as HEX…

Save DUT as Hex - allows you to save the content of the DUT tab (the DUT memory mirror) into a hex file. The default location when saving this file is the Patterns directory under the EasyPRO location on your disk.



Pattern

With the functions found here you can manage the data in the File tab



Open Hex

Open Hex - prompts you to open a hex file, which will be opened in the File tab, where it can be edited if desired.

If there was no file opened until using this function, the File tab is opened with the content of the file. If a file is already opened, it is closed and the new one is opened instead.

Open Bin

Open bin - prompts you to open a bin file, which will be opened in the File tab, where it can be edited if desired. If there was no file opened until using this function, the File tab is opened with the content of the file. If a file is already opened, it is closed and the new one is opened instead.

Erase All

Erase All - clears the entire tab (filling with 0xFF)

Copy from Buffer

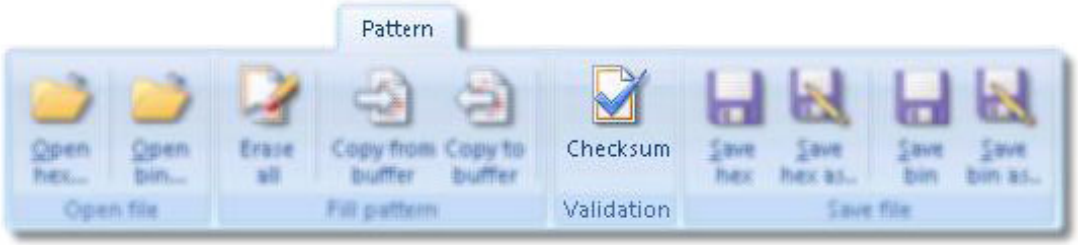
Copy from Buffer - copies the content of the DUT tab to File tab. This operation is useful to keep a backup copy of the DUT tab.

Copy to Buffer

Copy to Buffer - copies the content of the File tab to DUT tab. This is useful for writing a given pattern into the device. Once the data is in the DUT tab, it can be written into the device.

Checksum

Checksum - makes the sum of all words in the File tab and displays it in the output window. This information may be useful for faster comparison of the data inside the DUT. For a more rigorous check, use Verify, but it needs more time to complete.



Save Hex

Save Hex - saves the hex file you edited in the File tab Remember that this function overwrites the current file. If you want to save the file under a different name, use Save hex as function.

Save Hex as…

Save Hex as - allows you to save the opened hex file with another name, without modifying the original one. You are prompted to enter the location for saving, also the new name of the file.

Save Bin

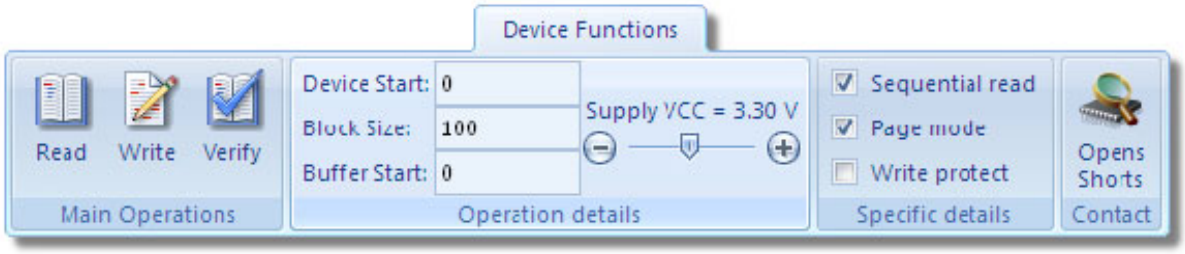
Save Bin - saves the bin file you edited in the File tab Remember that this function overwrites the current file. If you want to save the file under a different name, use Save bin as function

Save Bin as…

Save Bin as - allows you to save the opened bin file with another name, without modifying the original one. You are prompted to enter the location for saving, also the new name of the file.

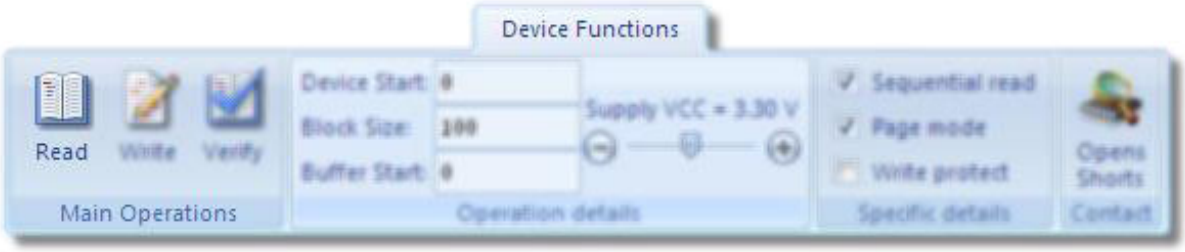
Device Functions

Here there are some functions that helps you in order to make operations with the tested device



Read

Read - reads the memory and displays the content in the DUT tab. This operation is done under the operation details, details that can be edited in the corresponding menu.



Write

Write - writes into the DUT memory the content of the DUT tab. This operation is done under the operation details, details that can be edited in the corresponding menu.

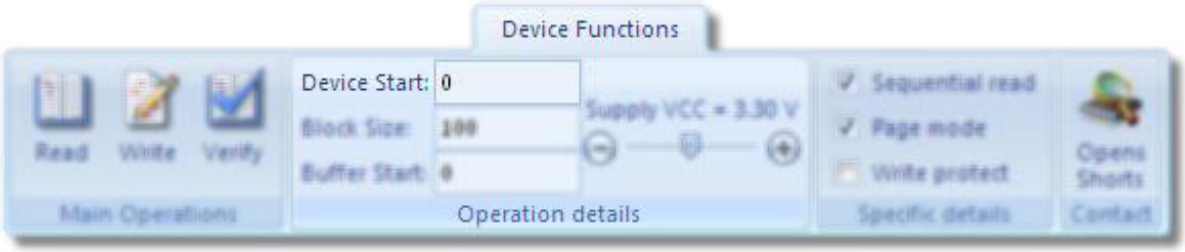
Verify

Verify - compares the DUT tab content with the DUT.

The differences between memory and DUT tab are displayed in red in the DUT tab. This operation is done under the operation details, details that can be edited in the corresponding menu.

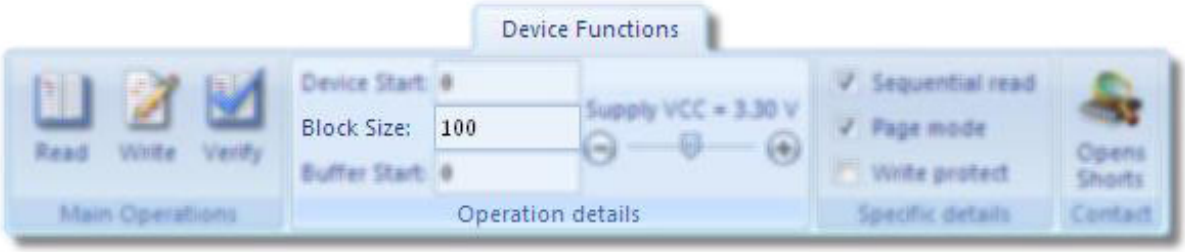
Device Start

Device Start - Allows you to edit the start address of the device. Used in Read, Write, or Verify



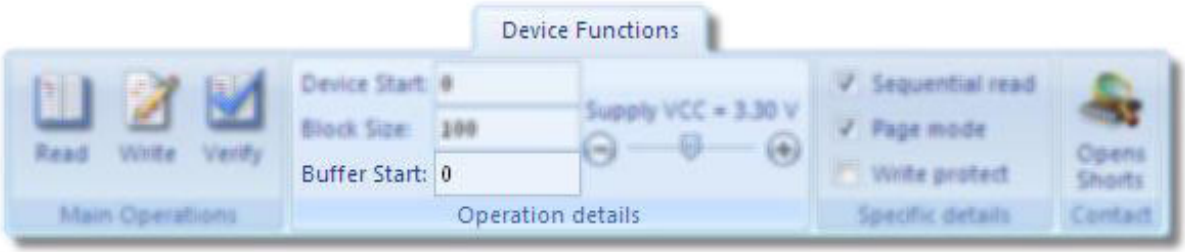
Block Size

Block Size - Allows you to edit the number of bytes to be read or written. Used in Read, Write, or Verify



Buffer Start

Buffer Start - The buffer start address to begin the operations. Used in Read, Write, or Verify



Supply VCC

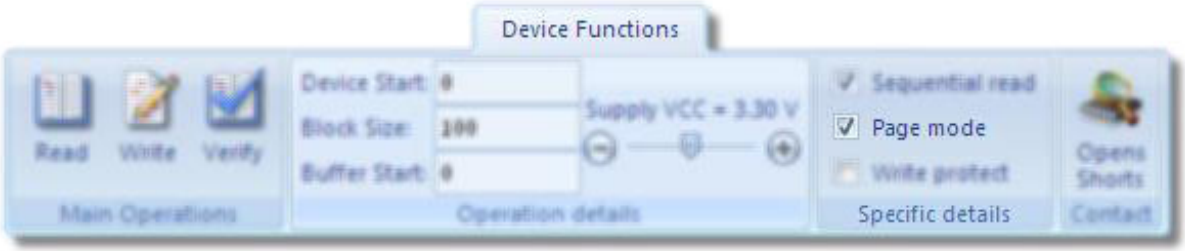
Supply VCC - Allows you to edit the value of the VCC supply. Used in Read, Write, or Verify

Sequential Read

Sequential Read - This mode allows a faster response time for reading large blocks of the memory. Used in Read or Verify

Page Mode

Page Mode - With this control you can set the write mode (page mode/byte mode) and the read mode (sequential/byte mode). For writing mode the default is page mode and for the read mode the default is sequential mode. Used in Read, Write, or Verify



Write Protect

Write Protect - Allows you to activate the write protect mode (WP pin) or not during Read, Write, or Verify

Opens Shorts

Opens Shorts - Verify the contact of the device in the ZIF socket. This function helps you to detect if the device is present in the socket, or, all the pins are in contact with the ZIF socket. Please verify the status of the operation in the output panel.

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