Eurosoft
computer reliability solutions

Pc-Check® UEFI

User Manual

Professional, computer diagnostic software,
fully UEFI-native pre-boot

Assuring direct, legacy-free UEFI hardware testing

www.eurosoft-uk.com

Contents

Overview

This document has been written to give information about the basic operation of Pc-Check UEFI. Pc-Check UEFI is run from USB drive, using it to boot PC systems. Pc-Check UEFI is a fast, accurate and easy-to-use diagnostics tool from Eurosoft that enables you to check the configuration and reliable operation of PCs.

Pc-Check UEFI is extremely useful to manufacturers and repairers of PCs, informing all Professionals of the architecture and operational reliability of PC hardware. It is assumed that readers have good technical knowledge and experience to gain full product usage. This manual is for standard Pc-Check UEFI features.

Minimum System Requirements

Compliant UEFI BIOS Revision 2.3.1 or later
64 bit
SMBIOS 2.7 or later
USB port
1GB RAM

Where possible, assuming it can start, Pc-Check UEFI will attempt to identify any unmet prerequisite requirements and add them to the event log.

A brief history of UEFI

UEFI stands for Unified Extensible Firmware Interface.

UEFI first came about as a bootstrap solution for Intel's new Itanium 64 bit processor in the late 1990's. Pioneered by Intel, Microsoft, HP and others, it was called IBI - the Intel Boot Initiative.

When the PC market instead adopted 64 bit extensions to the traditional x86 architecture, legacy BIOS persisted, but it was clear, with more and more powerful systems arriving, that this traditional BIOS approach was struggling to keep up, with a plethora of creative 'bolt-on' extensions and obscure standards.

Intel had continued to develop the IBI, by now named EFI, and added a conversion layer for x86 systems called the CSM (Compatibility Support Module). CSM gave x86 operating systems and software a legacy BIOS interface such that they did not need to be aware of EFI at that time. This, typically 32 bit EFI version, was in many PC systems, especially servers, during the 2000's, but because of the inclusion of CSM, this was not immediately obvious to users.

Intel contributed the EFI specification to the UEFI forum in 2005 to continue development, with the organisations first specification update released in 2007.

UEFI finally came into its own for the PC, once both 64 bit processors and 64 bit operating systems became the norm, and storage media capacity had exploded past the limitations of

legacy BIOS, especially MBR partition table encoding.

How UEFI differs from legacy BIOS and DOS

Executable files have the extension .efi instead of .exe

Batch (shell scripts) have the extension .nsh instead of .bat

Drives are not named by letters, such as A:, C:, but rather with short device names with a numeric component, such as FS0:, FS1:, where FS means 'File System'. Use of drive names is for the most part avoided in Pc-Check UEFI because the path assigned to the boot device can vary from one system under test to another, including the boot device from which the diagnostic is running.

The UEFI boot process

The Boot Manager

Legacy BIOS has a simple process for booting media - it simply loads machine executable code directly from the boot sector (first sector or Master Boot Record) of the boot disk and then calls it. In turn that code will inspect the partition table and upon determining the active partition, it will also simply load code from the boot sector (this time the first sector of the partition) and call it directly. For the sake of this discussion, the job of the BIOS is a simple one, and the necessary complexity for finding and loading boot files from file systems is all in the boot code. This approach gives almost total freedom to the boot code to behave however it might wish, and indeed entirely custom boot structures, proprietary partitioning schemes are possible, however to work seamlessly with other operating systems and disk management tools, boot code must observe and preserve certain data structures such as the location and format of the MBR partition table, which ultimately had limitations.

Since PC systems now have very much more firmware storage available, both for code and for system settings, UEFI BIOS instead have a built-in boot manager. The code includes a FAT file system driver, which is why operating systems on UEFI systems include an EFI system partition formatted with FAT to store the OS initialisation code. When creating media to boot on a UEFI system, the inherent ability to understand the FAT file system means that there are no special custom boot sectors, weird tools, or procedures, but just to provide the correct files in the correct folders that the BIOS will search for. (On a PC that is the file EFI\BOOT\BOOTX64.EFI). If you've had a long relationship with PC systems, this can seem as if some steps are missing.

Secure Boot

Digital signatures are a mathematical scheme by which to demonstrate the authenticity of files, especially executable code. A digital signature key identifies the organisation that created the file and so it is possible to make decisions as to whether that code should be allowed to execute. Any attempt to modify the executable code affects the validity of the digital signature and so malware infection or other tampering can be detected.

Secure Boot uses digital signatures to ensure that the code used to boot an operating system has not been modified or replaced. A list of trusted keys is held by the BIOS such that even if a file has a valid digital signature (has not been modified), it will not execute if the organisation that created it is not on the approved list. Keys can be added to this list, but to do so for every target PC to run diagnostics is cumbersome and the PC owner may not approve of introducing new keys to the system. It is possible to disable secure boot in most BIOS, and this is necessary if you wish to use the UEFI shell, however, once again this takes time, differs in method, and you must remember to re-enable secure boot after testing. Once again, the owner of the PC may not permit you to do this.

Thankfully there is a solution. As one might expect, Microsoft have keys in the default trusted database of UEFI PC systems. They have also set up a system for the submission of code to be countersigned by their digital signature such that it can be booted on any PC using

the Microsoft default trusted key. Naturally there is a set of strict requirements that must be met before they will sign any such file submitted from another organisation. Eurosoft have met these requirements with our UEFI diagnostic boot loader and so can offer the same 'walk up and test' self-boot convenience that was available to users of Pc-Check EuroDOS. There is no requirement to disable Secure Boot to run Pc-Check UEFI.

Getting started with Pc-Check UEFI self-booting diagnostics

The BIOS Boot Menu

The simplest, most convenient and recommended way to start Pc-Check UEFI is through use of the BIOS Boot Menu. Typically the Boot Menu is accessed by pressing a function key as the system starts at power on, commonly F12 or F11 is used. The correct key to use is frequently displayed as the system boots and at the correct time to press it, although if you know the key, it can help to start pressing it pre-emptively.

On many PCs you can also access a one-time 'Boot Override' menu from within the BIOS Setup screen. As the Microsoft Windows Settings and the Microsoft Windows Recovery Tools offer an alternative method to enter the BIOS Setup via their menus, this is especially handy if a system is configured for a 'fast boot' mode that makes accessing the boot menu difficult.

Having successfully invoked the BIOS Boot Menu, you will be presented with a list of the detected devices that can potentially be of use for system boot. If support for legacy mode is enabled in the BIOS, some of these devices may appear more than once. In this case, you should pay attention only to the entries that have a prefix of UEFI: the entries without this prefix shall boot the same device in legacy mode.

A Note on Dual Booting Media

Pc-Check UEFI may have been supplied to you on a dual boot device also containing Pc-Check EuroDOS. If you see the EuroDOS sign-on messages, you are booting in legacy mode. If you would prefer to test the system using the UEFI diagnostics, you should restart and be sure to observe the UEFI: prefix in the BIOS boot menu and if necessary ensure that a legacy only configuration has not been selected in BIOS Setup.

Dual Booting Media

Pc-Check UEFI may have been supplied to you on a dual boot device also containing PcCheck EuroDOS. If you see the EuroDOS sign-on messages, you are booting in legacy mode. To test the system using the UEFI diagnostics, you should restart and be sure to observe the UEFI: prefix in the BIOS boot menu and if necessary ensure that a legacy only configuration has not been selected in BIOS Setup.

Running diagnostics from the UEFI shell

The shell can perform unrestricted and potentially destructive actions, some forms of the built in commands can even 'brick' a PC. It can run batch operations at start-up with a script named startup.nsh, much like DOS would run autoexec.bat. For these reasons, the UEFI command line shell should never be available in digitally signed form, and so if you wish to run diagnostics using the UEFI shell you must first disable the Secure Boot feature of the target system and keep media safe.

Pc-Check can be started from the UEFI shell and from within a shell script file. If the file structure of the diagnostics is reorganised, be sure to make matching adjustments to the config.xml file so that it knows where to find required files and where to place results files. If you want to stay in the shell or script after the diagnostics complete, be sure to change the OnExit element to "Exit".

When running from the UEFI shell, you can choose to run one of two different versions of Pc-Check. You can run the main program, which has the graphical UI and full suite of interactive test options, or alternatively you can run the command line or non-graphical / text only program version, which is limited to run only test script files. The program version without a graphical user interface (PcCheckCmd.efi) is well suited to communications and other server equipment that run without a graphics card or integrated graphics option, sometimes referred to as a 'headless system'. This program version can operate on a UEFI shell that is accessed using serial console redirection. More information about this program version can be found in the section 'Pc-Check Command Line'.

In a shell script you have the flexibility to add other tools to the test sequence, move files, enable remote control and so on. If you need Pc-Check UEFI to run more than once with different settings and/or scripts you can keep multiple versions of the config.xml by different names and copy them into place before each execution.

Differences from Pc-Check EuroDOS

General

Aside from the clear differences in presentation, the fundamental internal operation of Pc-Check has evolved and has been aligned to Eurosoft's Windows diagnostics. This allows a best tool fit for each testing requirement, while sharing common scripting and results formatting. It also permits for automated dual environment testing with Pc-Check Windows able to invoke the diagnostics of Pc-Check UEFI (for more information please see the appropriate Pc-Check Windows manual or contact Eurosoft).

Group and Test Numbers

In Pc-Check EuroDOS, the notion of Groups (Hard Disk, Processor etc) and Tests (Linear Read, Core etc) exist, but were identified in the XML scripts and results by four character mnemonics or acronyms. Groups and tests are now identified by simple numerical IDs. Just like Pc-Check EuroDOS, once a value has been used it is typically not used again by Pc-Check UEFI for a different test, even if a test or group is deprecated.

Test Parameters

In Pc-Check EuroDOS, many tests have command line options to control some aspect of testing, for example to set the maximum duration for all hard disk media tests. In Pc-Check UEFI this is handled instead by test parameters held in the script itself. Test parameters accompany each individual test such that if, in the given example, more than one media test is

selected, each test could run with a different duration setting. This also removes the need for the test pre-sets, where the same test might exist in multiple forms of Quick, Standard, Full and Custom.

Devices

In order to align with the way diagnostics work in Eurosoft's Windows products, Pc-Check UEFI assigns the testable units, the devices, differently in some cases. For some groups, where a sub-system might have been treated as a whole, this might now be available as several individually addressable items, while in other groups, a number of devices may have been combined into a single testable unit.

A good example of such a change is the Processor group. In Pc-Check EuroDOS, the Processor group assigns devices to logical processors, one for each core or hardware thread. In Pc-Check UEFI, the diagnostics instead assign devices to each processor package, such that there is normally only one device except for a multi-socket system such as a high end workstation or a server. With core and thread counts rising rapidly, this provides simpler, more compact results output and simpler scripting.

This does not however mean that the diagnostics are in any way less capable or have reduced coverage. In this Processor group example, it simply means that when CPU tests are executed, the testing shall be applied automatically to all the cores and threads of the selected CPU package to produce a single package result.

Pc-Check EuroDOS has a special device number, -1, used in scripts that acts as a 'wild card' or 'test all'. It instructs the group to apply that test to all the detected devices. Similarly Pc-Check UEFI has such a special device number, but in this case it is 0.

Config.xml instead of cmdline.txt

Since, by design, EuroDOS does not provide a command prompt, EuroDOS instead passes command line options to Pc-Check through the use of a ASCII text file called cmdline.txt. If Pc-Check is used in another DOS environment with a command prompt, the options would not come from cmdline.txt and need to be provided as part of the command in the normal manner. Should there be a lot of options, this might mean that a .bat file is used to avoid retyping the options repeatedly.

In Pc-Check UEFI, global options are held in an XML file called config.xml. There are less global options needed because the use of Test Parameters replaces very many. Pc-Check UEFI always reads the config.xml file for settings, even when it is started from a shell prompt.

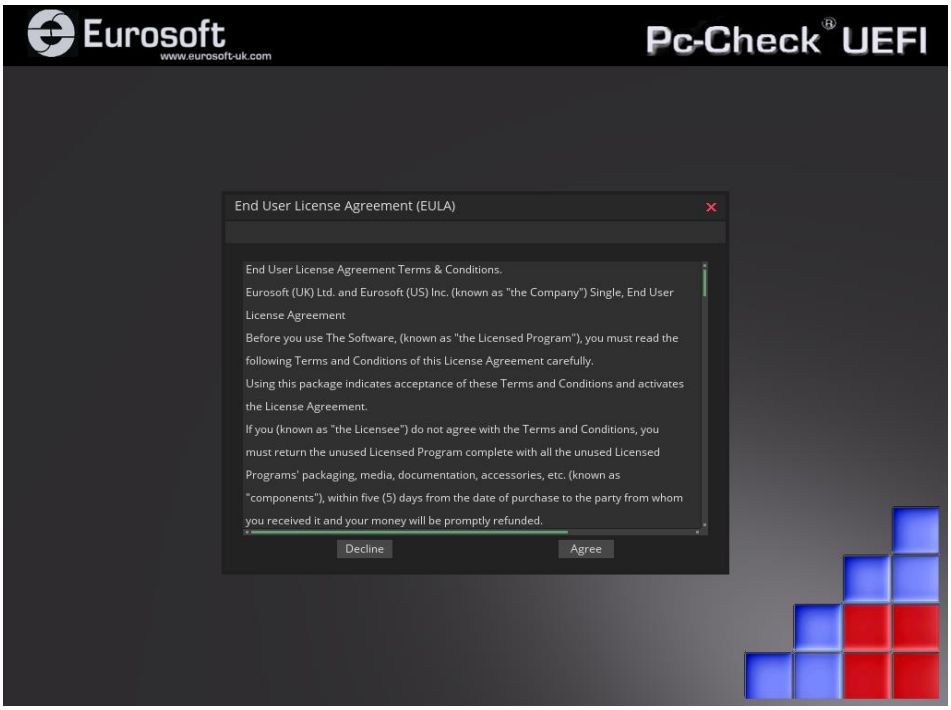
Unicode

All Pc-Check UEFI XML config, script and results files are encoded as Unicode (UTF-16) with BOM (Byte Order Mark). Pc-Check EuroDOS files are 8 bit ASCII.

Most popular text editing tools, including Windows NotePad, now automatically and seamlessly detect and edit Unicode files. Should you experience problems with Pc-Check UEFI - especially start-up issues after modifying config.xml - please make sure that your text editor of choice is properly configured to preserve or create the BOM.

EULA

On first use the End User License Agreement will need to be acknowledged, this is a one-time exercise and should not appear again unless the software has been updated or reinstalled.



Navigation of the User Interface

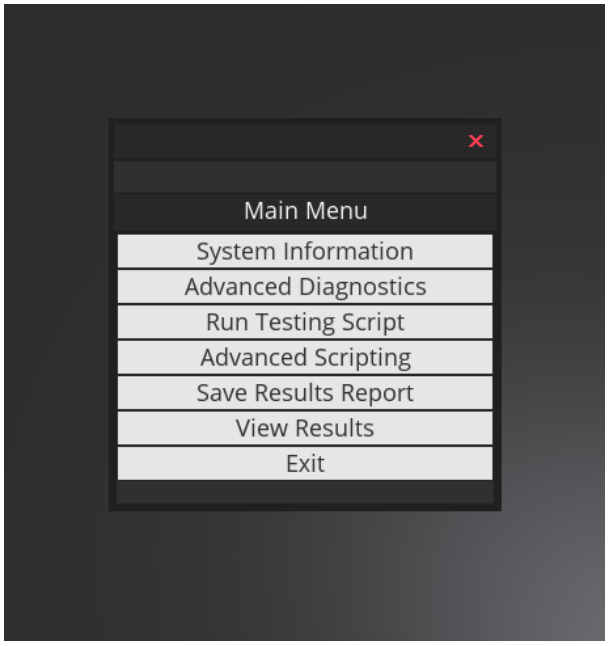
As a native UEFI application, keyboard, mouse and even touch input are available. At the time of writing, some laptops still don't provide support for the built-in mouse (pad), but an external USB mouse is near universally supported, even in these cases. The mouse centre 'scroll wheel' is not supported by UEFI BIOS.

Users of the Pc-Check EuroDOS will find that the initial menus can be navigated using the keyboard in a very similar manner. Cursor keys move between menu options, while Enter selects the highlighted option and Escape backs out to the previous menu. The Escape key will highlight the Exit option on the Main Menu. On screens where the graphical user interface necessarily becomes more complex, keyboard input takes inspiration from other Windowing systems, additionally using the Tab key to move between controls and space bar to make selections.

Touch devices are supported. Touch events are handled as if the mouse moved directly to that point and the left button was clicked. There are no items in Pc-Check UEFI that require the right mouse button.

Clicking the X icon in the top right hand corner of a Window will cancel that action and take you back.

The Main Menu

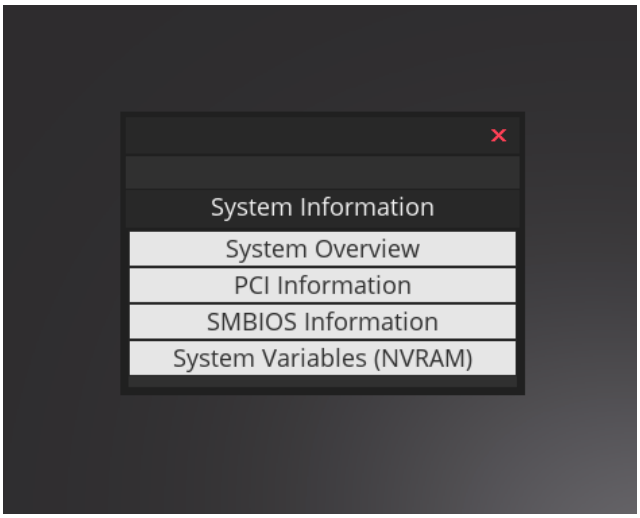


System Information

The System Information options characterise the PC system by identifying and listing the main components and capabilities to the display. Detailed system information is also captured to the Results folder in a file named SysInfo.xml.

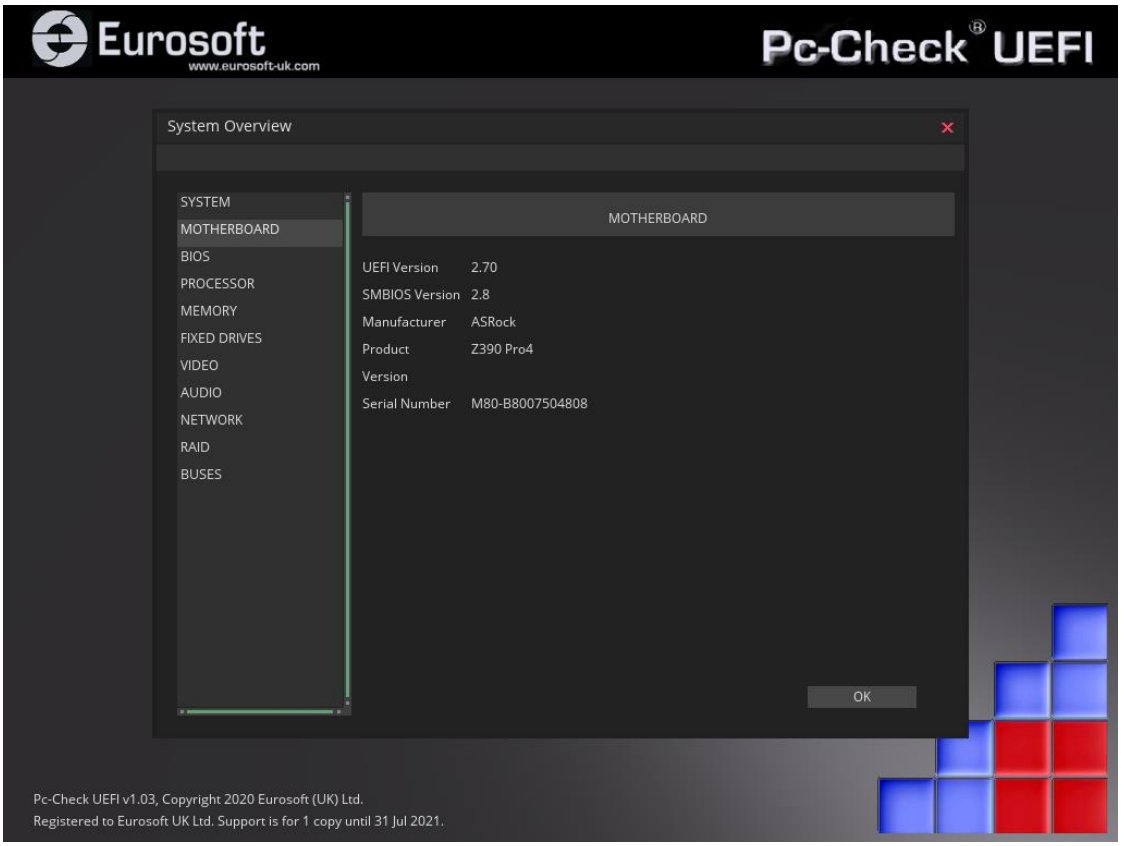
Note: For the optical drive to be included in the sysinfo.xml file ensure that a test disc is inserted in the drive.

The System Information sub menu has options to view information about the system hardware, PCI bus devices and configuration, DMTF SMBIOS information and System Variables contained within the non-volatile random access memory.



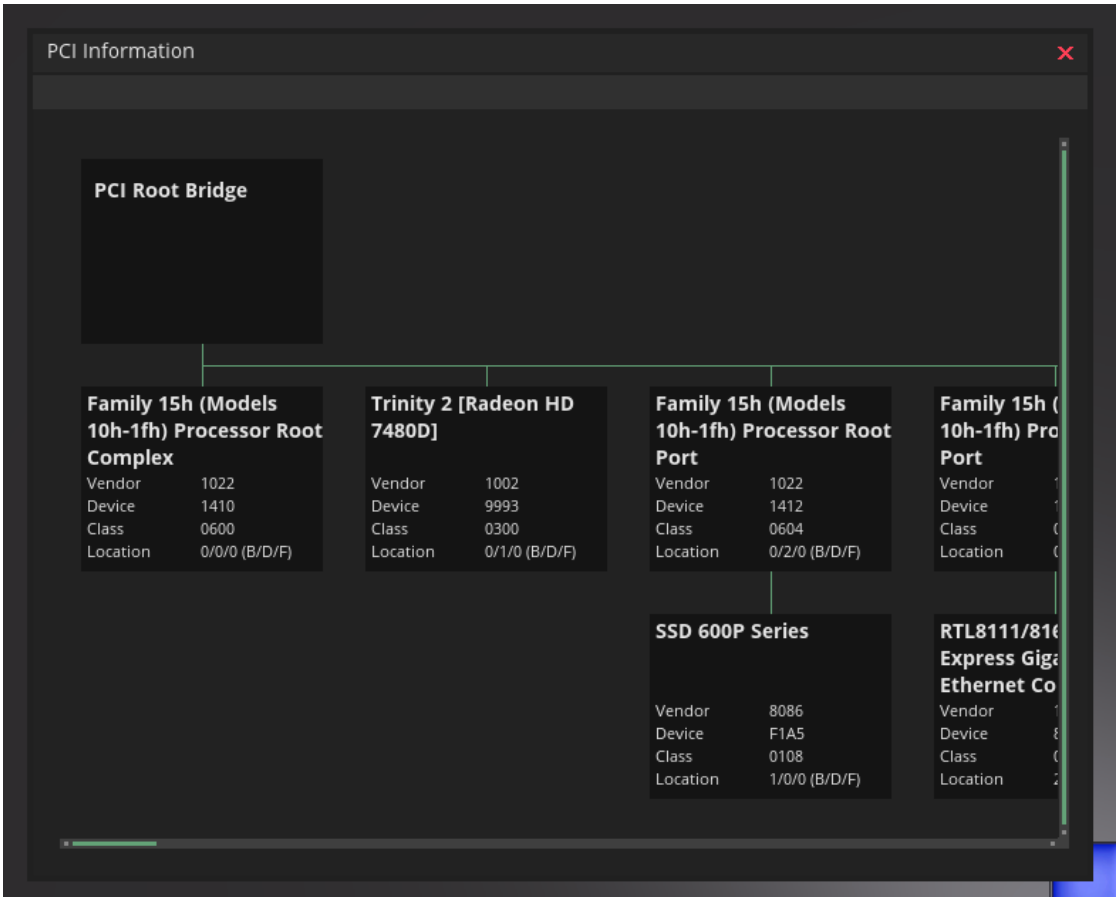
System Overview

The System Overview summarises the key system components. Component types are listed to the left and information about the currently selected item are show to the right.



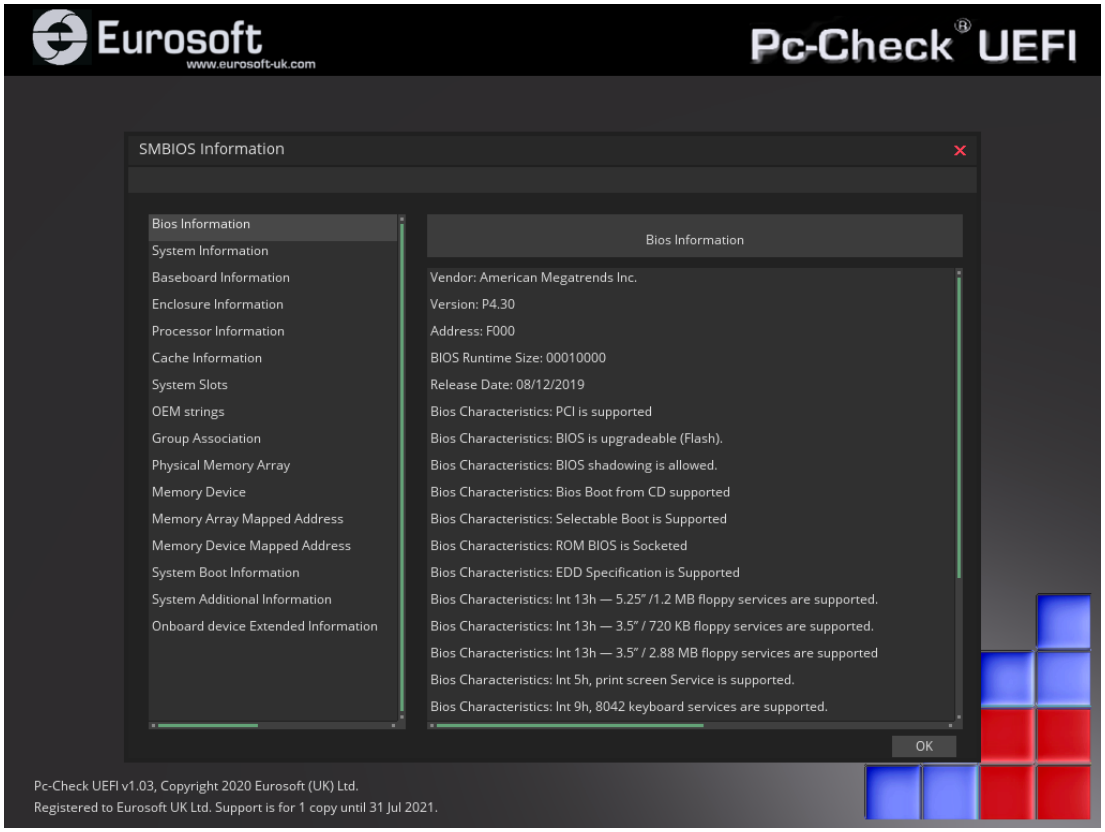
PCI Information

The PCI information menu option displays the system PCI Bus Topology as a tree diagram, use the scroll bars or keyboard to view the entire diagram. Detailed information about devices, such as memory address mappings are available by double clicking the device entry on the tree.



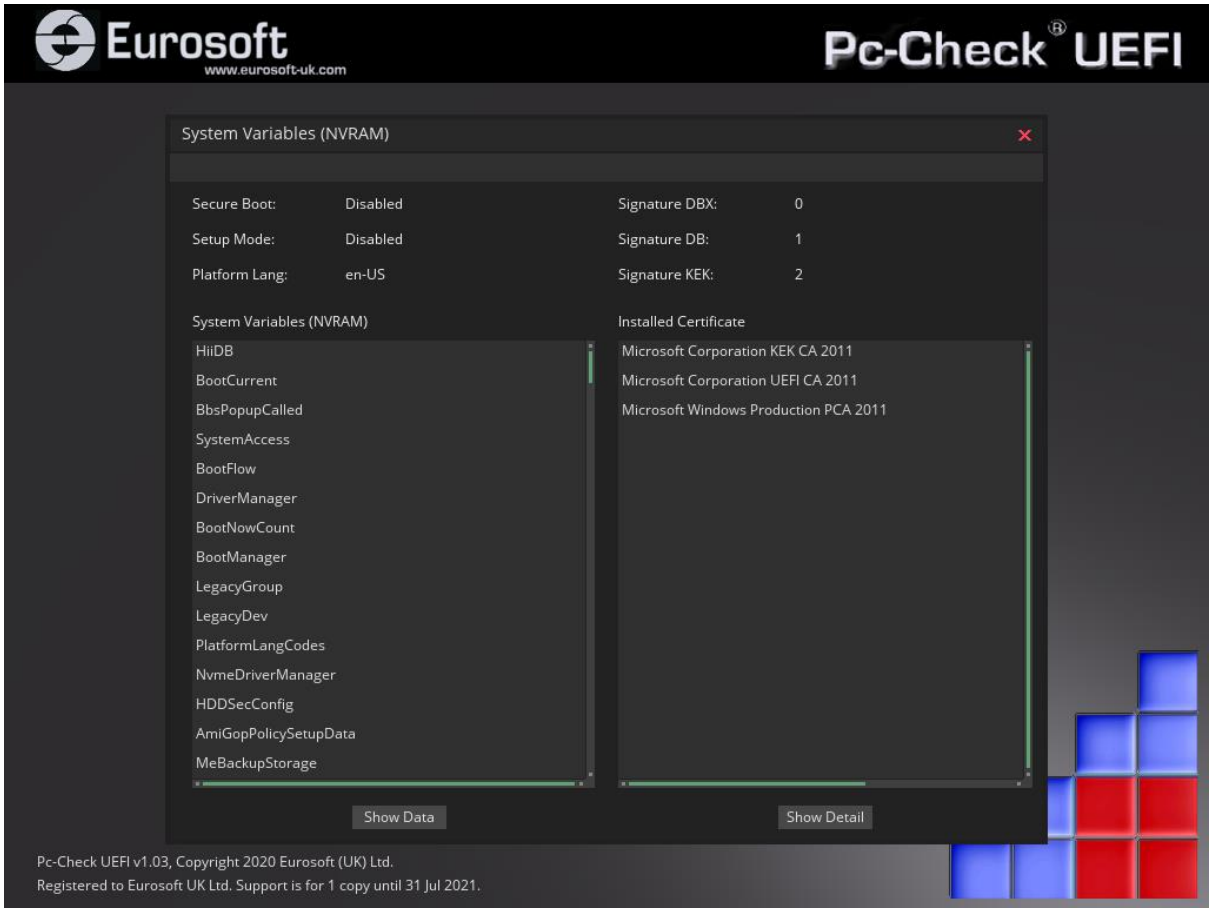
SMBIOS Information

The SMBIOS menu option decodes the system SMBIOS table for easy review. The window lists the table type entries on the left with detailed information for the currently selected item shown on the right.



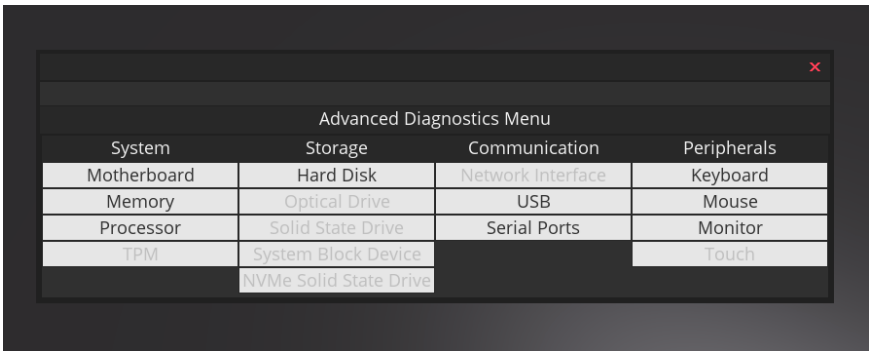
System Variables (NVRAM)

The System Variables menu option displays information about the system variables and digital certificates present in the UEFI non-volatile RAM storage. System variables define behaviours such as the boot devices and order, while the digital certificates are used by the Secure Boot function to determine if the content of boot devices can be trusted. System variables are displayed on the left side of the window and certificates are displayed on the right side.



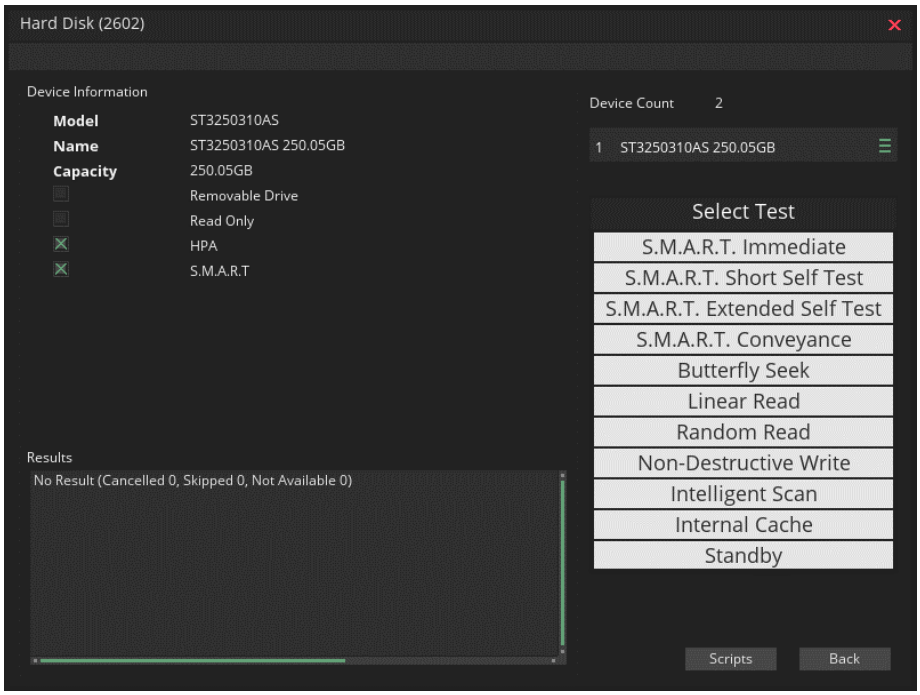
Advanced Diagnostics

This invokes the Advanced Diagnostics Menu. Use the Advanced Diagnostics menu to run tests in a free-form, exploratory manner. Each of the groups has an entry in the menu, which is arranged by category. Groups that have not detected testable devices will be unavailable and 'greyed out'. In some cases, such as for the Optical group, devices may require media to be pre-loaded at initialisation to be considered testable. On selection of a Group, you will be taken to the Group window.



Device Selection

On entry to the Group window, if there are multiple testable devices available, the focus for the keyboard will be directed to the device number selection on the top right. Use the up and down cursor keys to select the device number to test or to test automatically for all devices. Information about the selected device is shown on the left side and will be updated as the device selection changes. Once the correct device is showing, press the Tab key to move focus to the Select Test menu.



In the Group window, tests can be selected individually from the Select Test menu or alternatively the Scripts button can be used to view any pre-configured test sequences.

The Scripts Button

The Scripts button will show those test scripts that use tests *only* from the current group (to change that behaviour please see the section 'Configuring Pc-Check UEFI'). A typical distribution will include 'run all' scripts for many of the groups. Unless modified, scripts will test all devices irrespective of the device selection made previously.

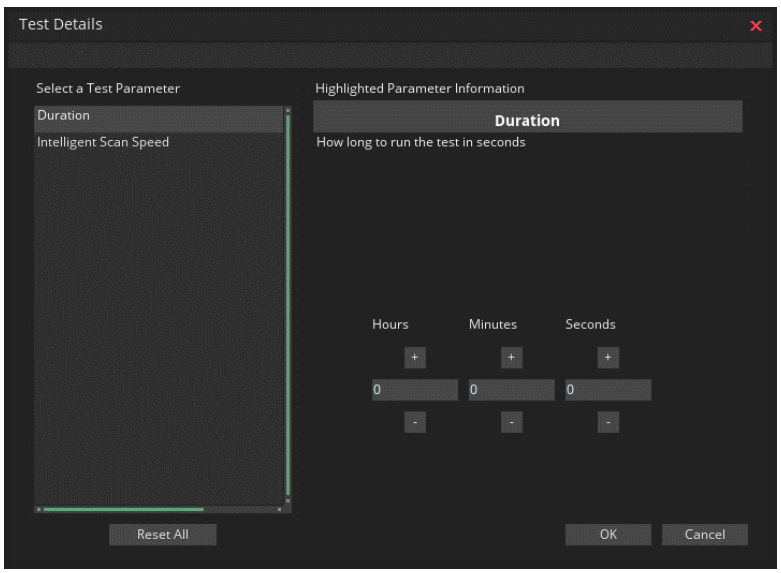
The Select Test Menu

After device selection (or if only one testable device is available, immediately) the focus for keyboard input will move to the Select Test menu on the bottom right. If you are using the keyboard, use the cursor keys and press Enter to select a test.

There will follow either one or two Windows providing control of test behavior and repetition.

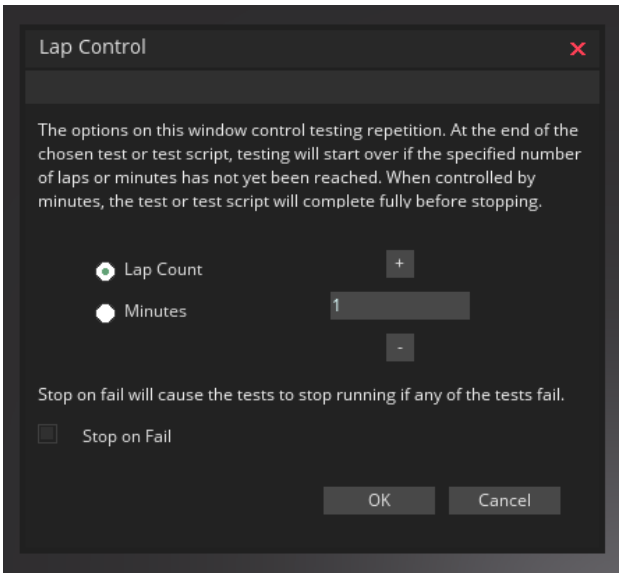
The Test Details Window (Test Parameters)

If the selected test has adjustable parameters (most tests), then the Test Details window will be presented first. The Test Parameters can be set here to control how the test will behave - for example, you can set the duration of a storage media test. Select the Test Parameters from the list on the left hand side and modify the values shown on the right. If you just wish to continue immediately with the default settings, the keyboard focus is directed initially to the Ok button, and so you may just press Enter.

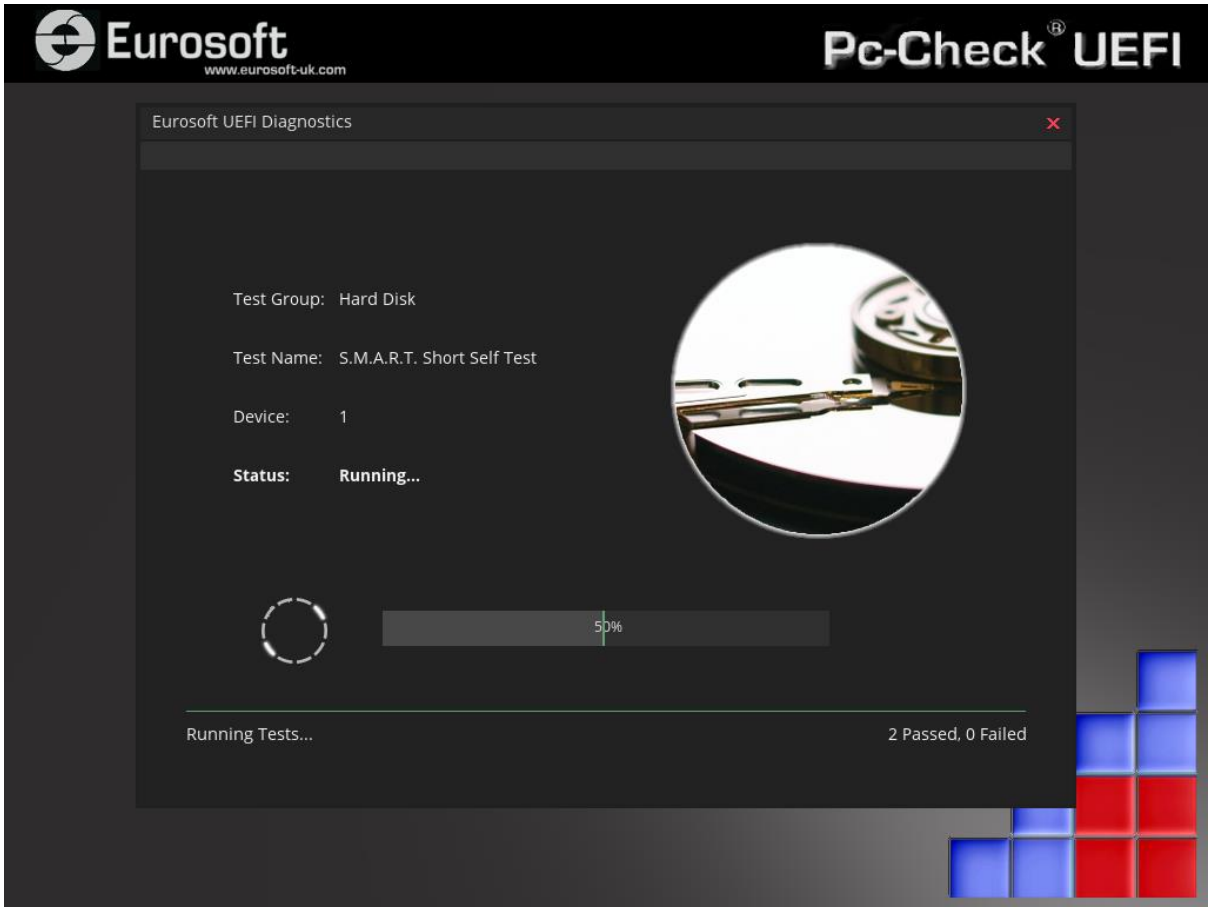


You will be taken next to the Lap Control Window.

The Lap Control Window

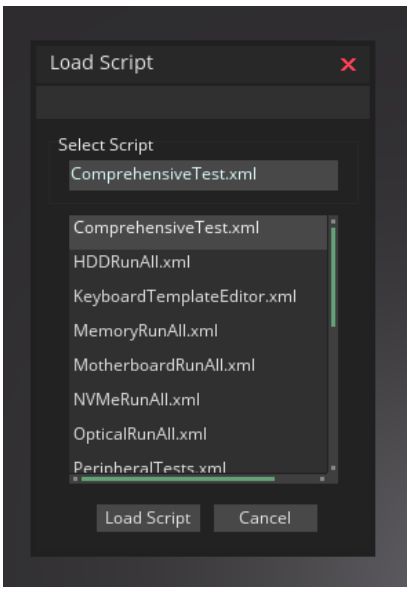


The Lap Control Window provides settings for test repetition, for example to try and detect an intermittent fault or confirm reliability you may want to repeat the test many times. You can set a specific Lap Count or to keep starting new laps until a specific time, given in Minutes, has been exceeded. You may also indicate if testing should stop (or else continue) after a test failure. By default the test will be run once only. Again, since keyboard focus is directed initially to the Ok button, another press of the Enter key will take you directly to testing.



Run Testing Script

Lists the available test scripts and immediately executes the selected script. By default scripts are held in a folder named 'Scripts' found in the root of the Program Device. The location of this folder can be set by changing the Scripts element in config.xml.

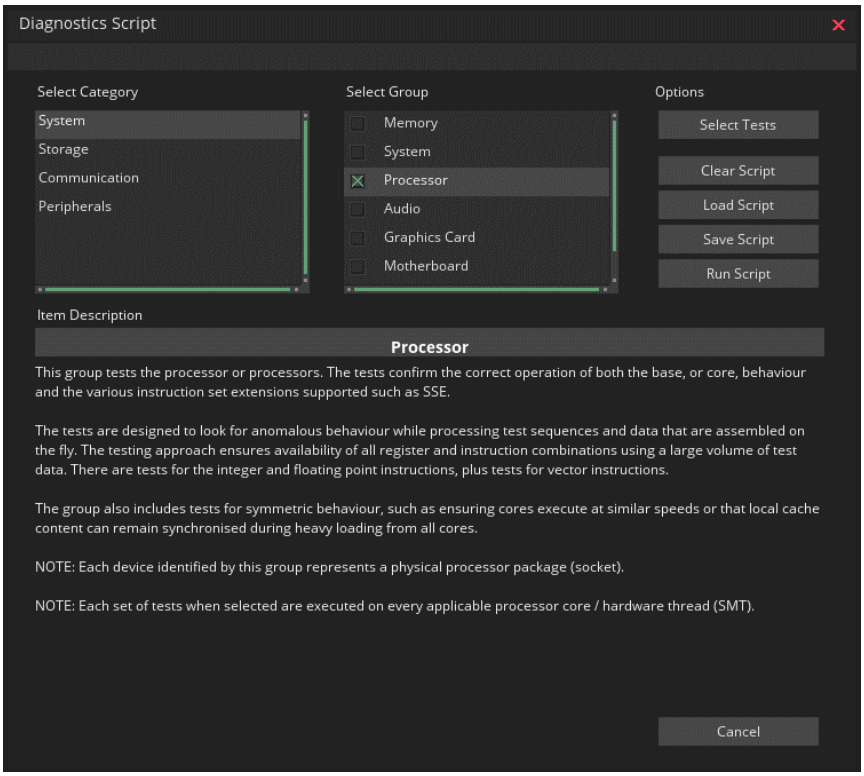


Advanced Scripting

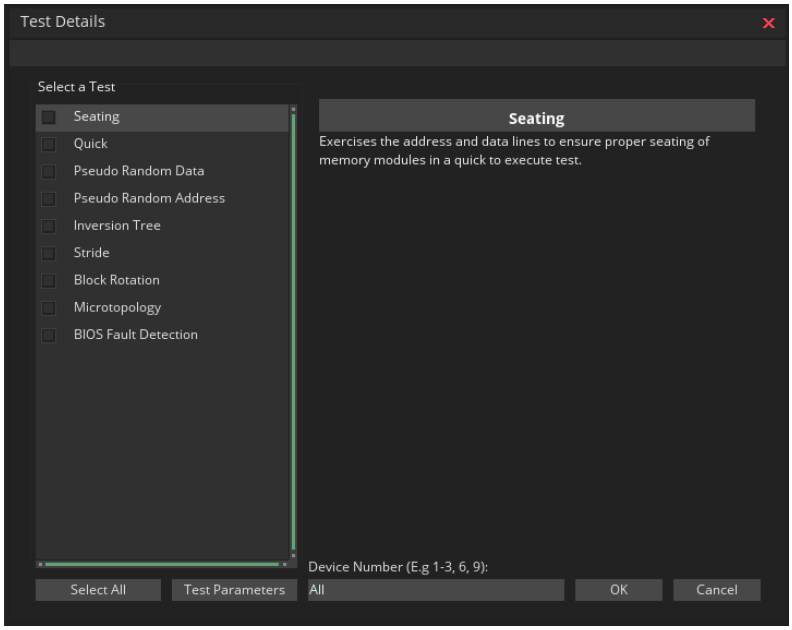
For the creation, execution and saving of test scripts. Script creation is presented as a hierarchy of list selection, with the same basic modes of operation at each level.

When selected for the first time during a session, test help information including group, test and parameter descriptions are first loaded. This will not occur if the help settings are not at the default, intermediate level. You will then be presented with the Diagnostic Script window.

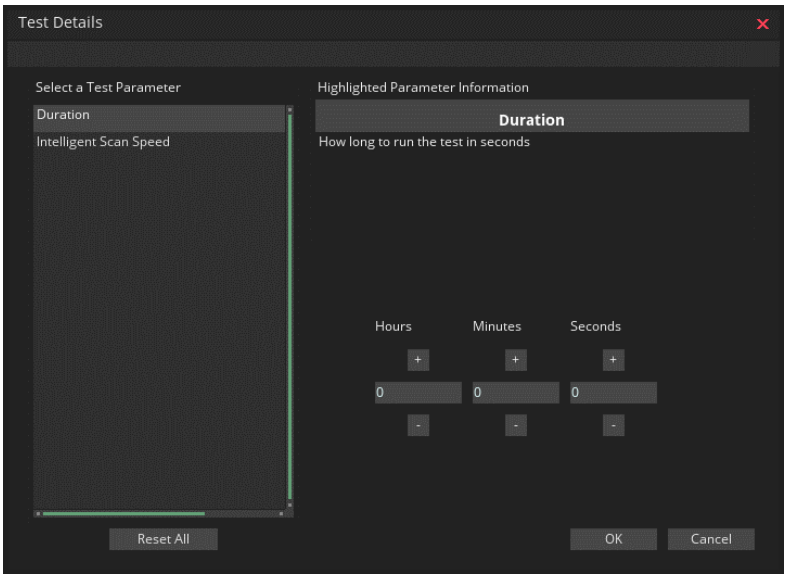
Work from the left to the right of the Diagnostic Script window. Start by selecting a Category from the first list, such as System. A list of Groups for this category will then be shown in the next list, toward the centre. Highlighting a Group from this list, such as Motherboard, will give help information for the Group, shown beneath. To select a Group for testing, activate the check box alongside it. You should now choose which tests shall be run for the selected Group - use the 'Select Tests' button from the top of the column of buttons to the right.



Test selection operates in the same manner as Group selection. Tests can be highlighted in a list on the left hand side of the Test Details Window, with a description of that test shown to the right. To include the test in your script, select the check box alongside it.



Beneath the list of tests is a button marked Test Parameters. With the test both highlighted and selected via the checkbox, use the Test Parameters button to view and modify the test behaviour, such as setting a test duration value. If there are no Parameters for the test, a pop-up message will let you know. If the button appears to do nothing, be sure that a test is both highlighted and selected (its box is checked).Once more, available Parameters are listed in a column. Selecting a Parameter from the list provides a description to the top right and the opportunity to view and modify the current value to the lower right.



Parameters can be reset to the program defaults by means of the Reset All button.

When you have made all the test selections for your script, use the OK buttons to return from your current position until you reach the first, Group selection window. In the column of buttons to the right hand side of this window you may then choose to either save or run your script.

When you run or save a script, you will be prompted for the lap count or minutes value and whether testing should continue after a test fails. This information is included in the script file when you save it. Should you run the script using the Main Menu option Run Testing Script, a group Scripts button or automatically start the script from config.xml, these settings will be used.

You can also choose to configure a specific test order when saving the script to a file. This testing order will be observed when the script is run directly from the script file, either from the Main Menu, at start-up via config.xml or using the group Scripts button. However, ordered script execution is not currently supported in the script editor.

Existing scripts can be loaded for modification. Overwrite the existing script name to permanently modify the script or save as a new script with a new name. Scripts are loaded and saved from the Scripts folder. The location of this folder can be configured in config.xml.

If you have very specific requirements for testing across devices, for example you wish to apply different test Attributes, or different test sets to specific device numbers, this is possible, but beyond the scope of even the Advanced Script Editor. You will need to manually modify the script to do this, using an editor such as NotePad.

Note: The Advanced Script Editor will detect if a script has been manually modified and display a warning. The warning is to alert you of the possibility of unsupported features, such as the same test appearing twice with different Attributes. If such changes do exist, the script will still load into the editor, but will not retain all instances of the test. If you know the script was modified in this way, do not save the script, or use a new name instead. (Existing scripts supplied with earlier versions of Pc-Check UEFI may also trigger this warning because they lack the data required to detect modification.)

Specifying Device Numbers

At the bottom of the Test Details Window you will see an entry box for Device Number which defaults to ‘All’. If you need to test only a specific device number or numbers, for example to leave out a specific serial port or to test only the first SSD, enter the device numbers you wish to test here. Enter device numbers in a manner similar to choosing which pages to print from a document. Either give device numbers individually, as a list separated by commas, as a range using a hyphen (minus sign) or use these methods in combination. For example **1-3,6,9** will test devices 1, 2, 3, 6 and 9. If you want to revert back to testing all devices, simply enter the device number **0** (zero) or return the text to **All**.

Note: If a zero device number is specified anywhere, either individually or as part of a range, it shall override all other device numbers and so test all devices.

Note: While devices numbers and device ranges can be specified in any order, forward or backward, the program will internally sort the device numbers into ascending order and merge together any adjacent ranges while creating the script.

Note: You can enter device numbers that do not exist on the current system, this permits the preparation of scripts for other systems which do have these. If a device is not present when the script is run, the requested tests are skipped without error.

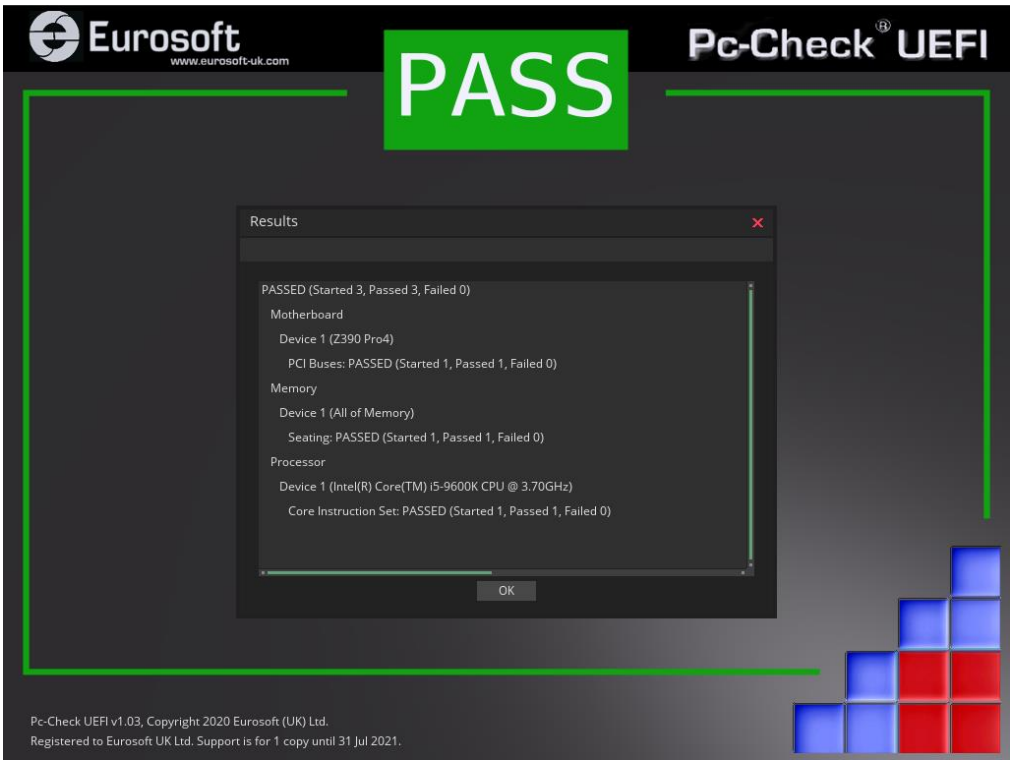
Save Results Report

Writes both a system configuration overview and the current diagnostic test results to a single text file (.txt). Failed items are highlighted and prefixed with an exclamation point ! at the start of the line. A file chooser permits manual entry of the file name to use. See the configuration file element ReportFile if you wish for the report to be written automatically when the program exits.

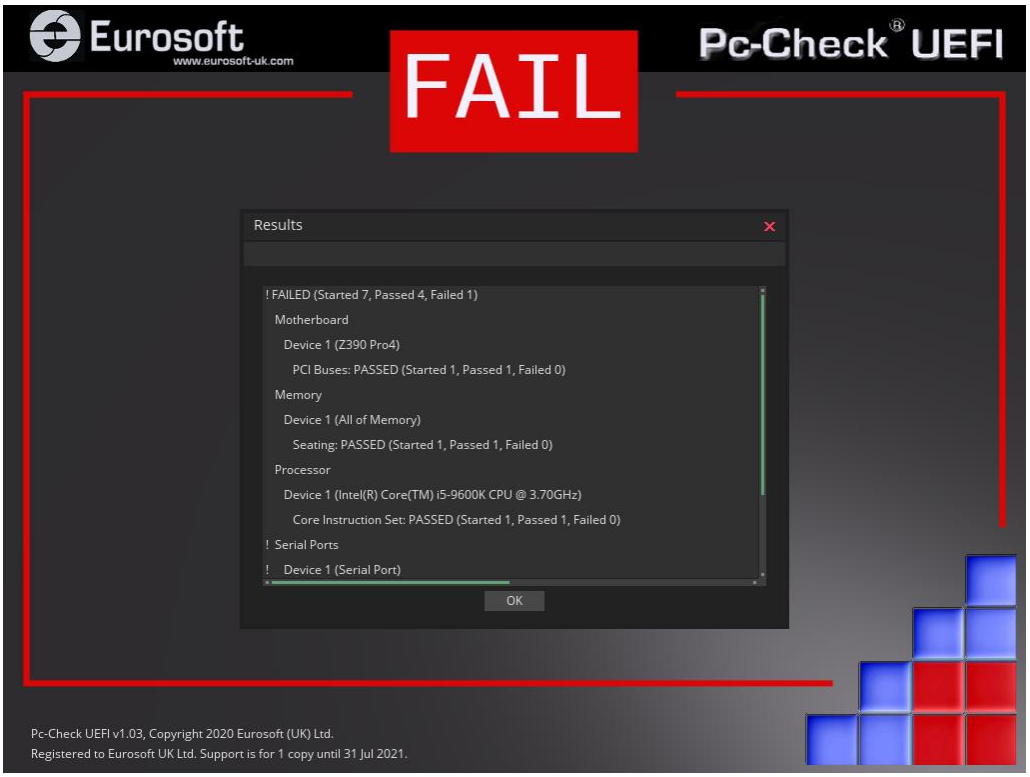
View Results

Lists the results for all the tests run during the session. Failed items are highlighted and prefixed with an exclamation point ! at the start of the line. The display will also show a 'traffic light' banner for the system status as a whole, provided there is at least one test with a pass or fail result. The results are also displayed on Exit from the program.

Pass Result Screen

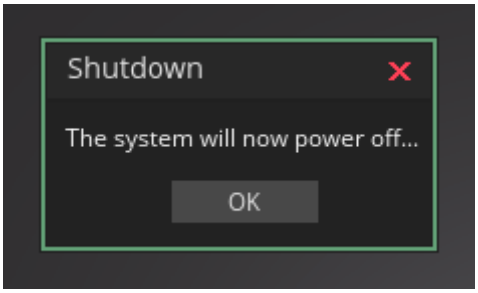


Fail Result Screen



Exit

Displays the session results and then exits the program. Exit behaviour depends on how the program is configured. The system will either be shut down, rebooted or exit to prompt (shell operation).



Special Function Keys

F4 - Closes the currently active window, as if the X icon has been clicked. This works even in situations where the Escape key might not.

F5 - Refresh the display. In the unlikely event the user interface has not redrawn properly, this key will request that everything be redrawn.

F6 - Toggle the mouse pointer off. If operating the diagnostics via the keyboard, without a mouse, you may wish to remove the unused pointer from the display, especially if it is obstructing information.

F9 - Capture the screen to a bitmap file. The file will be given a date and time stamp such that you can capture multiple screens. Files are written alongside the main executable (.efi) file, usually this will be in the EFI\BOOT folder. You might do this to send an image to technical support for example.

Special Notes

Although Eurosoft has gone to extraordinary lengths to provide an appealing and simple graphical user interface, customers are reminded that they are still in the pre-boot environment, not a fully featured operating system. This provides significant advantages to the diagnostic testing, but as UEFI is not a multi-threaded environment, some of the responsiveness and luxuries that we ordinarily expect are not always exhibited. At times, the mouse pointer may be temporarily removed from the display to avoid confusion where the system might otherwise seem unresponsive. This is usually preceded by a short animation to show that the system is busy. Please allow time for the system to pick up keyboard requests for actions such as aborting tests or making screen captures.

Error Codes and Extra Information

This section gives information on the error code and extra information associated with this code. This information appears in the XML results log and PDF reports generated from them.

An example XML log entry is shown below for explanation.

```
<LogEvent datetime="2021-03-14T15:09:27" group="1002" test="408" device="1"
message="5" lapcount="1" groupname="Memory" testname="Microtopology"
devicename="All of Memory" description="FAILED - 0x00/3FF-0017 –
000000000000002B"/>
```

Appearing in the description field, the general format of an error code is defined below:

0x<group error code>/<system code>-<error instance> - <extra information>

In the example XML above 0x00/3FF-0017 - 000000000000002B indicates

<group error code>

00

Mismatch of memory value. (The memory has tested bad.)

Note: Error codes start from zero.

<system code> (reserved)

3FF

This value will be used in the future, but currently it is 3FF or zero.

<error instance>

0017

This marks a unique point in the test at which the error was generated. When providing support to customers, this helps Eurosoft to narrow down the potential reason for the failure – to determine what was being executed by the test.

<extra information>

000000000000002B

The exact meaning of this value varies by test. In this example, it is the system handle value for the most likely failing memory module. By looking up the system handle in the list of memory devices found in the system information XML file, it is possible to locate the module on the motherboard.

Note: At present, the extra information is diagnostic group and error specific. No fixed format is available. Assistance should be sought from Eurosoft if the extra information is not immediately evident or explained in the Test Descriptions Manual.

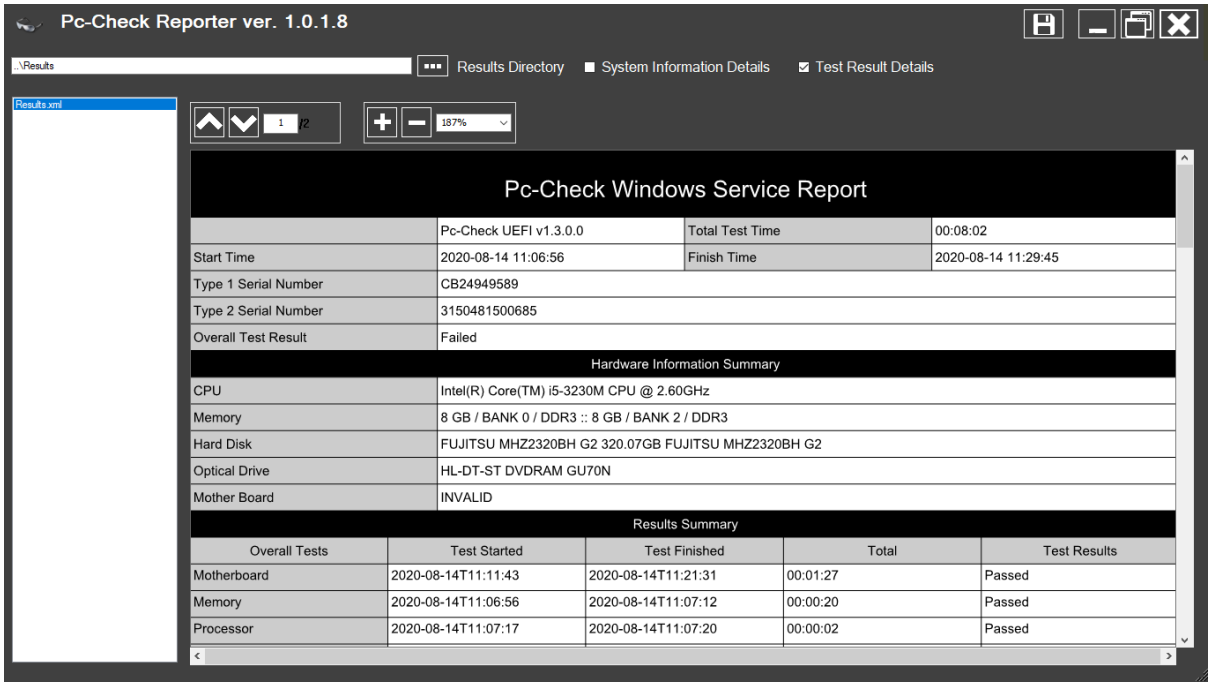
UEFI Reporter

Introduction to the UEFI Reporter

The UEFI Reporter is run in the Microsoft Windows operating system. The UEFI Reporter takes the XML results output from Pc-Check UEFI sessions and turns them into PDF documents that can be saved or printed. The UEFI Reporter will from here be referred to simply as 'the Reporter'.

The Reporter executable (.exe) file can be found in the folder UEFIReporter of your Eurosoft UEFI Program Device. It is a 'portable' application in the sense that it requires no special installation process and can be run directly from that folder.

Note: The Reporter works only with results generated by Pc-Check UEFI version 1.02 or later.



Choosing the Results Folder

By default the Reporter will look for XML files in the standard Pc-Check UEFI folder location of 'Results'. It looks for this folder on the same drive (drive letter) from which the Reporter executable was started. If you have changed the name of the results folder, or moved the Reporter executable to a different location, such that it cannot locate this folder, it will ask you for the new path to use as it starts.

Similarly, if you have archived results from the USB program device to a location on a hard drive or network, you can select that alternative folder by using the ellipsis (...) button adjacent to the current folder location displayed on the main Reporter window.

Choosing the Results

The Reporter will scan the selected results folder for those XML files that contain Pc-Check UEFI results output. It lists the files that it finds in a column to the left of the main Reporter window. Select the results file you wish to view from this list.

The Report

The main area of the Reporter shows a preview of the final PDF report for the selected results. It automatically adds detail from the corresponding system information XML file to complete the report. The report is broken into two main sections, following a brief hardware summary, the first shows the tests performed and the results of that testing, while the second shows the detailed system information that was collected by Pc-Check UEFI.

Should you not require detailed system information in the report, to save paper, you can optionally disable that section by removing the tick from the check box at the top of the main Reporter window. Similarly you can select Summary Only to just display the overall test result for each group. The PDF preview will update to reflect the new selection.

Saving and Printing

In the top, right corner of the Reporter window, adjacent to the window control for the minimise action, there are buttons for the printing and saving the current PDF report. They are marked with common icons representative of the action they perform.

When saving, the Reporter will by default create a suggested PDF file name from the results XML file name, such that time-stamps or job numbers are carried across error free. Alternatively you may edit the file name to your requirements.

When printing, the Reporter offers settings for the target printer, number of copies, paper source etc, starting with sensible defaults. The report is optimised for printing to A4 paper.

Notes

To drag the Reporter window, click and hold on the part of the window title bar that contains the text of the program name.

To resize the window, use the hashed area in the bottom, right corner.

Configuring Pc-Check UEFI

Pc-Check UEFI is configured using the XML file config.xml. This file can be found alongside the main program executable (.efi) file, usually in the folder EFI\BOOT.

The config.xml file can be changed directly with a simple text editor such as NotePad. There is more detailed information about this in the section ‘Notes about editing config.xml’. Alternatively the configuration can be changed using a built-in graphical editor by pressing F8 when prompted, just prior to display of the Main Menu. For more information on this method, see the section ‘Configuration Editor’.

The file is made up of a few different main sections or 'elements' in XML speak. Within each section there are further XML elements that configure various program settings or behaviours. Each of these elements has one or more XML attributes (not to be confused with test Attributes) which you may configure for the desired outcome. Example of this would be file="Results.xml" or action="ShutDown".

The config.xml includes embedded comments that give helpful brief reminders of the purpose of each element and the available values for the attributes.

Note: All configuration settings can optionally include an attribute called hidden, if the attribute hidden is included and set to true, i.e. hidden=”true”, that item will not appear in the built-in graphical configuration editor.

The GUI element

Language

This sets the display language of the GUI. The locale attribute tells the user interface what language files to use, if present. The corresponding locale folder must exist or else the built in default ‘en-gb’ will be used. Typically this setting will have been pre-configured correctly by Eurosoft prior to dispatch.

The HOTKEY element

Key_F8

Setting the disabled attribute to true will disable the graphical settings editor F8 key prompt.

The FILES element

This configures the names of files needed or created by the program. (Also see the FOLDERS element.)

PciDeviceData

This is the location of the PCI device database file.

EventsFile

This is an XML output file from the diagnostics which records significant events, useful general information and errors from the program (not the same as test failures). This file will be created in the folder specified by the FOLDER element named Results.

SysInfoFile

This is an XML output file from the diagnostics that captures a snapshot of the system configuration as detected by the test groups. These are referred to as the device attributes. This file will be created in the folder specified by the FOLDER element named Results.

ResultFile

This is an XML output file from the diagnostics that records the results of the diagnostic testing. As each test is executed, the results file logs the start and end of each test along with the outcome. This file will be created in the folder specified by the FOLDER element named Results.

ReportFile

This is a TXT output file that records both the system configuration overview and results of the diagnostic testing. If a file name is specified, the report file is written when the program exits. If the ReportFile element is omitted or set to an empty value, "", the report is only written when manually requested from the main menu. This file will be created in the folder specified by the FOLDER element named Results.

ResultsXSL

This file path gets inserted into the results file XML header as a (stylesheet) reference. This affects the filtering and formatting of the results when viewed in a browser. An example XSL file is provided to format the results as a HTML table. If the ResultsXSL element is omitted or set to an empty value, "", an XSL reference will not be added to the results XML file.

Note: The Google Chrome browser will not display results formatted with an XSL file held on a local file system unless started with option --allow-file-access-from-files, it will instead simply show an empty tab. As this file path is used by a browser while in a full operating system such as Windows, it should be configured appropriate to that environment, and not to a UEFI path.

ScriptFile

This names a script file for the diagnostics to run immediately after Pc-Check UEFI has started. If the ScriptFile element is not present, or is set to an empty string "", the Main Menu

will be shown. The script file should be stored in the folder specified by the FOLDER element named Scripts. The ask attribute, if set to true, will cause Pc-Check UEFI to display a file selector so that you can pick which script to run each time the program starts, with the named script, if given, preselected. After testing completes, what the program does next is controlled by the action specified by the AfterScript element.

The FOLDERS element

This configures the names of folders needed or created by the program.

Results

This is where Pc-Check UEFI will store the files specified by the FILES elements EventsFile, ResultFile, SysInfoFile and ReportFile. By default these files are named Events.xml, Results.xml, SysInfo.xml, with the report file manually named. Existing files in this folder will be overwritten by files of a new test session. To prevent overwrite you can add the macro %STAMP% to give these files unique session names, for example;

<EventsFile file="%STAMP%_Events.xml">Events File</EventsFile>
<SysInfoFile file="%STAMP%_SysInfo.xml">System Information</SysInfoFile>
<ResultFile file="%STAMP%_Results.xml">Test Results</ResultFile>

You can also configure Pc-Check UEFI to request a job or work order number be input by the operator as the program starts by using the macro %JOB%, for example;

<EventsFile file="%JOB%_Events.xml">Events File</EventsFile>
<SysInfoFile file="%JOB%_SysInfo.xml">System Information</SysInfoFile>
<ResultFile file="%JOB%_Results.xml">Test Results</ResultFile>

Input from the operator is expected to be a minimum of 1, to a maximum of 32, alpha-numeric or hyphen ('-') characters. Input length is constrained during input. Invalid characters are replaced by a hyphen character in the same position.

The macro %JOB% can be used together with the macro %STAMP% to further protect against overwrites if desired.

Scripts

This is the folder where Pc-Check UEFI test scripts are stored. If a script is listed, loaded or saved, it will be from this folder.

Images

This directs Pc-Check UEFI to data used by the Graphical User Interface. It is not normally necessary to change this setting unless you were restructuring the file system for a very specific requirement, perhaps when scripting in a shell.

The OPTIONS element

This configures various behaviours of the program.

OnBreak

This element specifies the key that interrupts testing and how that shall be handled. Available actions include ending the script, skipping the current test or it can prompt for the user to choose what action to take.

CSVResults

When set to true, this element tells Pc-Check UEFI to create additional result output files containing Comma Separated Values. The names of these files will be the same as that configured for the XML files, but with the file extension changed from .XML to .CSV.

ScriptsBtnNonExclusive

When set to true, the Scripts button found in the group window (Advanced Diagnostics) will show any scripts that include tests from the group alongside tests from other groups. When set to false, scripts will only appear when all tests are exclusively from the group.

AfterScript

If Pc-Check UEFI has been configured to run a script when it starts by using the element ScriptFile, the AfterScript element tells Pc-Check UEFI what action to take when that script completes. The choices are to stay, to wait, or to exit. If configured to stay, the program will go to the Main Menu and permit further interactive examination of the target system by the operator. If configured to wait, results are displayed until the operator returns and acknowledges them, the program will then exit. If configured to exit, the program will immediately exit. The action to take on exit is determined by the configuration element OnExit.

OnExit

This element tells Pc-Check UEFI what action to take when the program exits. The system can be shut down, rebooted or the program can simply exit. Choose the exit option if you are running the diagnostics in a shell environment and want to return to the prompt or to an executing shell script. It is best to avoid the exit option when running the software self-booted as although the UEFI specification dictates that the boot loader should move to the next boot device and so start the installed operating system without POSTing, individual BIOS behaviour is unpredictable, use the reboot option to achieve the same option with BIOS POST step.

Help

This element tells Pc-Check UEFI if and when to load help information. When shown, help information gives descriptions of tests and their parameters. By default the level is Intermediate, meaning that the help information is not loaded until the Advanced Scripting option is used to create, run and save test scripts. Alternative settings are Beginner, which requests that the help information be loaded before the Main Menu, and Expert, which stops help information being loaded at all, allowing for faster operation. When enabled, help information only loads once per session.

GroupDisable

A comma delimited list of group numbers that should not be started is given in the groups attribute. This might be to eliminate a suspected compatibility issue or to reduce menu clutter if you care only about specific hardware items. Also use this feature to disable groups that might affect firmware sideband features, for example, the serial port group (4502) should be disabled when running the command line version using serial redirection of the UEFI Shell.

Note: Group numbers can be found in the group window title, or in the Test Descriptions Manual.

QrCodes

If this option is set to true, any failures will also be displayed as a QR code when test results are displayed. The QR codes (if any) will appear ahead of the regular results display.

The URL contained within the QR code is controlled by the url attribute. The URL can be a single static address (for example a link to a support portal) or it can be directed dynamically to troubleshooting information for a specific group or test, through use of the %GROUP%, %TEST%, %DEVICE% and %ERRCODE% macros which insert details of the failure. The %STAMP% and %JOB% macros are also supported for URL creation.

The QR code can be read by the camera app of a smart phone.

Note: Group, test and error code numbers can be found in the Test Descriptions Manual.

TFTP

If this option is set to true, results files will be sent to a TFTP server at the end of the test session prior to exit. Use the serverip attribute to specify where the TFTP server can be found on the local network. The deleteafter attribute controls whether to remove the files from the Results folder after a successful file transfer.

Typically the UEFI BIOS will use DHCP to assign an IP address to the system, so it is only necessary to specify the target server IP. However, it is also possible to specify a static IP by setting the dhcp attribute to false and assigning the localip attribute. Only do this if you know your UEFI BIOS is able to be configured for static addresses or when you know there is no DHCP server present on the network.

If there is more than one network interface, the interface attribute allows selection of a secondary adapter if needed.

To avoid files being overwritten on the server, remember that you can configure the results files to have unique names by use of the %STAMP% or %JOB% macros.

Note: The Network IP stack must be enabled in the UEFI BIOS Setup for TFTP to work.

Verbose

If this option is set to true, the command line version will produce more detailed output regarding start-up events and the progress of test script execution. Equivalent to the '-v' option. This has no effect on the GUI version.

DebugFile

At start-up, should Pc-Check UEFI fail to reach a stable state, that is should it fail to display the Main Menu or to begin executing a test script, on the next start-up it will capture a debug log file. If the problem has cleared or Pc-Check UEFI has been booted on a new system on which it reaches the stable state, the debug log file is erased. This facility will be unavailable if ReadOnlyMedia is specified or the media cannot be written. Typically changes to these options would be made on the advice and with the assistance of Technical Support.

The USERDEFINED element

This provides user-defined reporting fields, which can be pre-defined or prompted during start-up. They can also be initialised with attribute values from test groups. These fields will appear as a group in the system information XML, optional CSV, and text report.

UserDefinedField

Each user-defined reporting field is declared with a UserDefinedField element. An entry will take this form;

<UserDefinedField id="1" name="User ID" value="" mask="AANNN" maskexample="Example AB123" locked="false">User defined data</UserDefinedField>

The id attribute assigns the value assigned to 'ID' in the system information XML output, each entry should be unique.

The name attribute sets the title of the field to be shown in reports and when the field is presented for edit at start-up.

Note: If the name attribute is left blank or is omitted, the user-defined field is not considered to be enabled and shall be ignored.

The value attribute sets the initial default text for the field. The initial value can also be taken from any device attribute (not to be confused with XML attribute) by setting the value to the form %A(5412,1,4)%. The first number in the brackets is the group number, followed by the device number and finally the attribute number – this example collects the system serial number. Inspect a system information results XML file to determine the required numbers for the information needed.

The mask attribute applies simple validation to values after user edits. Each character of the mask determines if the next character in the input should be, for example, a letter or a number. The program will not proceed until valid input is provided. Leave the mask empty if no validation is required.

N	Any number (numeric character)
n	Any optional number
A	Any letter (alpha character)
a	Any optional letter
X	Any letter or number (alphanumeric character)
x	Any optional letter or number
O	Any character
o	Any optional character

For example, to obtain a number from 1 to 4 digits use a mask of Nnnn, but to always require 4 digits use a mask of NNNN instead.

Note: Input validation against the mask attribute is applied only after a user edit. If the user-defined field is locked, no validation occurs.

The maskexample attribute provides text to help the user understand what input is expected. It is displayed alongside the field when editing.

The locked attribute determines if the field can be edited by the user. Locked fields will still be displayed in the user-defined fields edit window, but they cannot be changed. If every field is locked, the edit window is skipped altogether.

The GROUP_nnnn element

Individual test groups can have their own configuration elements.

The GROUP_4502 element

This holds configuration for the serial port group.

Probe

The Probe option enables additional legacy I/O port probing for serial UART devices. Change this to true when serial ports on industrial or point of sale systems have not been detected. By default this is set to false to avoid issues or delay from unnecessary probing.

The VIRTUAL element

Virtual Mode is a special licensed mode enabled by Eurosoft via the licence file. It is typically used for system bundled diagnostics. Virtual Mode restricts the available actions and prevents script modification. If this sound useful, please contact Eurosoft for more information.

The VIRTUAL element is used only when Pc-Check UEFI is started in Virtual Mode. In normal operation this section of the configuration file is ignored.

MenuEntry

Each entry (of which there can be up to ten) specifies an entry in the Virtual mode Main Menu. The menu entries will appear in the same order to which they are defined in the configuration file.

Note: The Virtual mode Main Menu will always start with fixed entries for System Overview and end with fixed entries for View Results and Exit. The user-defined entries will appear between them.

Use the title attribute to set the displayed text for the menu entry. Use the script attribute to specify which script is executed when the menu entry is selected by the user.

Note: Scripts for Virtual mode must be prepared in advance with a full licensed copy of Pc-Check UEFI. Virtual mode performs additional checks to ensure the script settings have not been manually modified. Because they cannot be edited outside the program, Virtual mode scripts will always test every device of a group.

Note: Failure QR codes are ideal for Virtual mode.

File name and path macros

%STAMP%

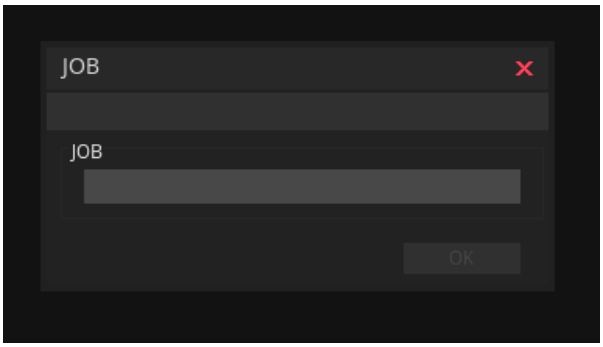
Using %STAMP% in a file path, file name or URL path will see the macro replaced with a time-stamp of the start of the diagnostics session. This can be used to automatically make a separate copy of results from each diagnostic run that do not overwrite the previous results. The time-stamp will take the form D20170431T235959, that is 'D', year (4 digits), month (2 digits), day (2 digits), 'T', hour (2 digits), minute (2 digits), second (2 digits) with no spaces or other separators.

%PROGDIR%

Using %PROGDIR% in a file path will see the macro replaced with the absolute path to the main program executable (.efi) file on the program device. For a typical self-boot program device this will be \EFI\BOOT\

%JOB%

Using %JOB% in a file path, file name or URL path will see the macro replaced with up to 32 characters input by the operator. When the macro is first encountered, as Pc-Check UEFI starts, the operator is prompted for the macro value. Input from the operator is expected to be a minimum of 1, to a maximum of 32, alpha-numeric or hyphen ('-') characters. Input length is constrained during input. Invalid characters are replaced by a hyphen character in the same position. Use this macro to name or group output files by job or work order number.



%GROUP%

Use %GROUP% in a URL path to insert the group number of the currently displayed failure.

%TEST%

Use %TEST% in a URL path to insert the test number of the currently displayed failure.

%DEVICE%

Use %DEVICE% in a URL path to insert the device number associated to the currently displayed failure.

%ERRCODE%

Use %ERRCODE% in a URL path to insert the error code of the currently displayed failure.

Note: Group, test, device and error code numbers cannot be inserted into a file path or name.

Notes about editing config.xml

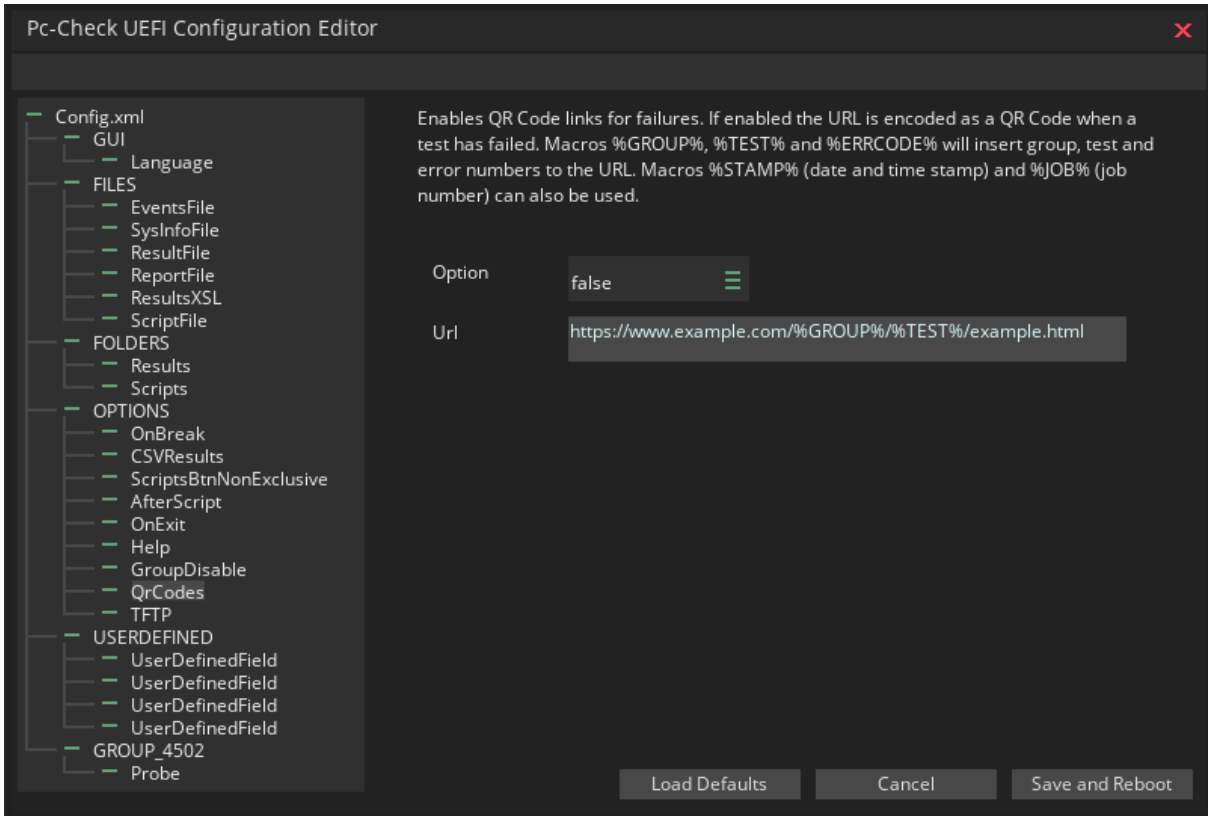
Config.xml is a UniCode (UTF-16) XML file with a BOM (Byte Order Mark). Please make sure that your text editor is properly configured to preserve or create the BOM.

Windows Notepad works just fine for editing the config.xml file. If you use a more sophisticated replacement for your text edits, please ensure that it can handle Unicode files and is correctly configured to have the setting 'Write a byte order mark at the start of Unicode files' (or similarly named option) enabled.

All paths in Pc-Check UEFI are to the program device. Where a path starts with a backslash ('\'), it will be from the root of that device - for example \EFI\BOOT. A file system designator such as FS0: should not be included as this can vary between different systems under test.

Configuration Editor

As an alternative to changing the configuration with a text editor, you can instead use the built-in configuration editor. During start-up, just before the Main Menu is displayed, a prompt is displayed to press F8 to edit configuration settings, doing so brings up the Configuration Editor.



To the left side of the Configuration Editor, the available elements of the config.xml file are displayed hierarchically. The right most elements of this hierarchical 'tree' are each the

configurable items. Selecting one of these items (double click) fills the right side of the Configuration Editor with the available attributes that can be changed for that element, along with some helpful text regarding what is being configured. Refer also to the earlier parts of this chapter.

Once the desired changes have been made, use the 'Save and Reboot' button to apply those changes – config.xml will be updated on the disk and the system will start the diagnostics again with the new settings.

Note: For this one time only, the boot device will be pre-selected to return directly to the diagnostics, it is not necessary to enter the BIOS Boot Menu to manually select the boot device (though doing so will do no harm).

If the Configuration Editor window is cancelled or closed, changes are not applied and the config.xml is unaffected.

The configuration can also be returned to default settings using the 'Load Defaults' button. This change is not applied to the config.xml unless subsequently settings are subsequently saved, so there is still time to cancel.

Note: If the language locale setting is changed, it is a requirement to load default settings – this then provides an immediate change to the displayed help texts accompanying each setting. The new locale is not permanently applied until the settings are saved.

Using read only media

If you are starting Pc-Check UEFI from read only media and wish to suppress automatic file writes to logs and other files, preventing error messages, you can let Pc-Check UEFI know by creating a file named 'ReadOnlyMedia' during the media preparation.

Create this file in the program folder – typically this will be EFI\BOOT. The content of the file is unimportant, it can be an empty file of zero length. The easiest way to create such a file is to right click in Windows Explorer to create a new text file; give the new file the name 'ReadOnlyMedia', deleting the '.txt' file extension that is automatically offered. Windows will warn about changing the file extension, this is Ok.

Note: This configuration method replaces one previously given via config.xml. Although config.xml is checked early during the start of Pc-Check UEFI, this does not occur early enough for some potential file writes and so another mechanism was required for this special case.

The Keyboard Template Editor

There are a very wide and varied range of PC keyboard layouts, especially between different portable models. If a large number of identical systems are to be tested it is desirable to have a specific attuned representation of the keyboard for best efficiency. To this end, the Keyboard Test includes a sophisticated editing mode.

Entering keyboard template edit mode

To access the keyboard template editor, enable the 'Template Edit Mode' test parameter when on the Test Details screen as the Keyboard Test is started. Alternatively a script has been included named KeyboardTemplateEditor.xml which has this setting pre-selected.

Hints and Tips

- In addition to the buttons for various actions, the keyboard template editor has many helpful instructions at the bottom of the screen relevant to the current context. Many of these instructions give information about useful key presses that perform actions or assist with fine control.
- It is generally easier to start by loading an existing keyboard template and then edit it to create the desired result than to create an entirely new layout from scratch.
- When your keyboard layout is completed, it might not be centred on the display. Select 'All keys mode' and then press the 'C' key to have this done automatically.
- When a new key is created, don't forget to use the 'Assign' function in the 'Single Key Editor' so that the key will know to what it will respond during testing.
- If you are struggling to select a part of a key graphic in the 'Single Key Editor' by using the mouse, use the 'T' key to toggle/ cycle through until to the desired part is selected.
- If there are keys on the keyboard that cannot be detected individually, for example an 'FN' key, instead fill the space on screen with a place holder key so the layout is complete; create a key that has only a caption and do not use the 'Assign' function.
- If a key is already assigned, for example if you have copied another key to form a new key, the 'Assign' button will instead say 'Change'. Using this button you may make either a new assignment or remove the assignment entirely.
- If you are experimenting with new key colour schemes, you can revert back to the colours that were in the template file by using 'Template Reset'.
- The main keyboard edit area has a grid based on the suggested key size and when started provides a single Escape key also of the suggested size. The grid can be turned on and off with the 'G' key.
- A key count (including unassigned/ place holder keys) is shown in the bottom right corner of the main keyboard edit area.

Pc-Check UEFI Command Line

The full featured Pc-Check UEFI, with graphical user interface, can be run from the command line of the UEFI shell, directly or from within a shell script (.nsh file). When supplied with suitable configuration options, it provides full automation. In some circumstances, especially systems with no display hardware ('headless systems') a non-graphical / text only program version is more appropriate and offers some additional flexibility for operation via serial console redirection. Eurosoft provide such a program version in the folder UEFICmdLine, with the executable file name of PcCheckCmd.efi. This program version can only run test scripts.

Preparing to run the command line version

The simplest way to start a target system to run the command line version is to prepare a separate USB boot device with the UEFI Shell. If required, a suitable version of the UEFI Shell boot file BOOTX64.efi is included in the folder UEFICmdLine\UEFI Shell. The file should be placed on a FAT32 formatted USB device in the folder EFI\BOOT. Simply insert both the UEFI Shell device and the Eurosoft Program Device to the target PC. When the PC is started, choose the UEFI Shell Device as the boot device. Once in the UEFI Shell, change the device (fs0:, fs1: etc) to that of the Eurosoft Program Device and change the working directory to UEFICmdLine. Remember that for the UEFI Shell to start, Secure Boot must be disabled.

Running the command line version

Just like the full graphical version, most program configuration is done by editing the config.xml file. However there are several options that can be controlled immediately via the command prompt and which override the corresponding setting in the config.xml. The first is '–h' which is to request help information;

```
FS1:\UEFICmdLine\> PcCheckCmd –h
```

This will give help reminder information about the other options.

The '-r' option tells Pc-Check the name of a script file to run. This option means that it is not necessary to modify the config.xml file to start a script and different scripts can be run. Only the name of the script file is required, do not include a path – the script will be run from the script folder configured in config.xml (usually 'Scripts');

```
FS1:\UEFICmdLine\> PcCheckCmd –r MemoryRunAll.xml
```

The '-verbose' (or '-v') option tells Pc-Check to produce more output about the program start-up and the progress of testing;

```
FS1:\UEFICmdLine\> PcCheckCmd –r MemoryRunAll.xml –v
```

The ‘-w’ option tells Pc-Check to display the final global result status and to wait for the Enter key to be pressed at the end of testing (this is equivalent to the AfterScript action in config.xml);

```
FS1:\UEFICmdLine\> PcCheckCmd –r MemoryRunAll.xml –w
```

The ‘-x’ option tells Pc-Check to always exit, rather than to shut down or restart the PC (this is equivalent to the OnExit action in config.xml);

```
FS1:\UEFICmdLine\> PcCheckCmd –r MemoryRunAll.xml –x
```

Note: The GUI version also understands the –r and –x command line options when run from the shell.

Disabling the serial port test group

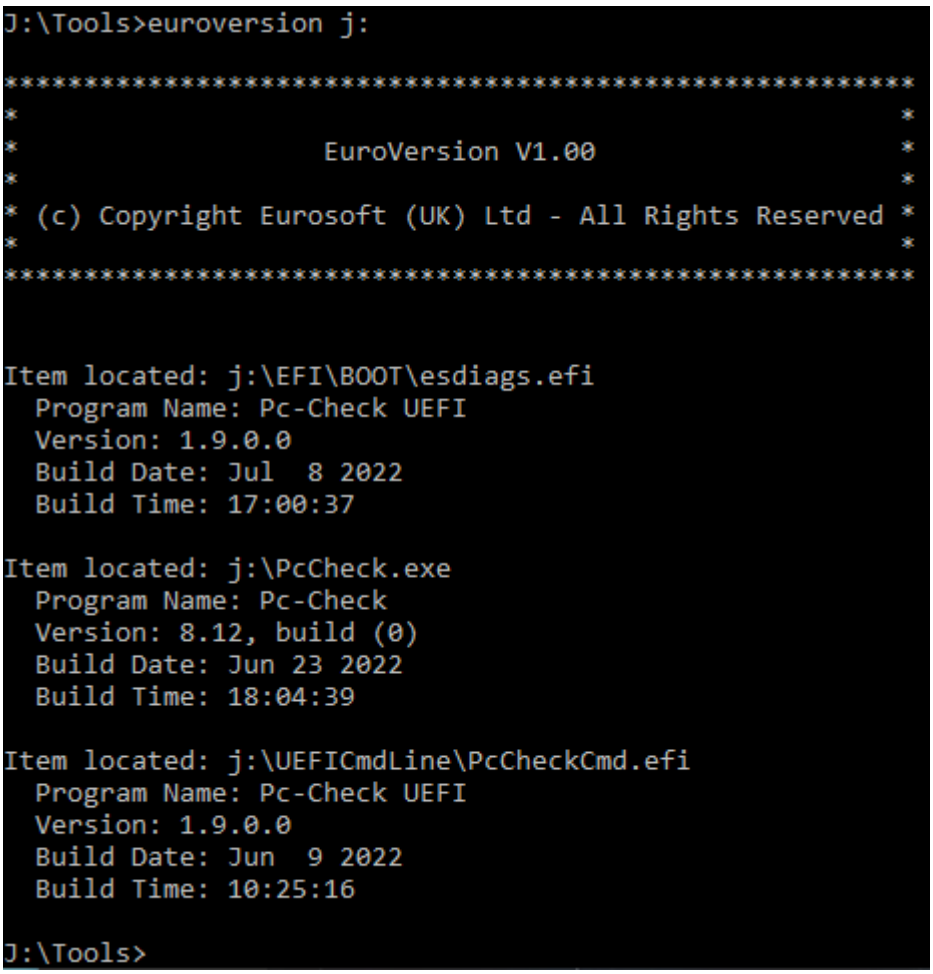
When running on a system over serial console redirection, you may need to disable the serial port testing group (Group 4502) to prevent the diagnostic interfering with active communications. See the section on editing the config.xml file.

Tools

The Tools folder can be found on the Eurosoft Program Device.

EuroVersion

The EuroVersion tool is for use at the Windows command prompt and reveals the version information of the diagnostic software without the need to boot and run it. Supply EuroVersion with a path (for example the path of the Eurosoft Program Device) and it will scan and report which diagnostic versions are currently available.



Note: In the unlikely event that the EuroVersion tool fails to run, it may require the Microsoft Visual C Run Time Redistributables, the installer for these is also included in the Tools folder.

Troubleshooting

- Not booting to Pc-Check UEFI
  - Select the correct USB entry from the boot menu.
    - UEFI boot devices typically have 'UEFI:' prefix in the device list.
  - Is it a UEFI PC?
    - The UEFI diagnostics requires a PC with a UEFI BIOS.
  - Is UEFI disabled in the BIOS. Check settings for 'Legacy Only' or similar setting.
  - Microsoft Surface Products
    - Your system has the 'Microsoft Only' secure boot setting. Please change the setting to 'Microsoft and approved 3rd parties'.

- Not getting to the Main Menu
  - Going straight to a test script?
    - Check that the config.xml file is not set to autorun a script.
    - Check for licensing errors.
    - Try booting a second time and look for an error log on your boot device.
      - The error log will be called debug.txt. The error log is created when Pc-Check UEFI detects that it failed to reach the main menu on the previous boot attempt. If that next boot attempt is successful, then the debug.txt file is removed. Technical support might request the debug file as part of any investigation.

- License errors
  - Is the license file present?
  - Is your Eurosoft USB program device inserted?

- Font errors and display issues
  - Make sure that your config.xml file is present.
    - Found alongside the main executable (.efi), typically in folder EFI\BOOT
  - Make sure that your config.xml file is valid.
    - Config.xml is a UniCode (UTF-16) file with a BOM (Byte Order Mark). Please make sure that your text editor is properly configured to preserve or create the BOM.

- Testing issues
  - Optical group is not available.
    - The Optical device group requires that suitable media be pre-loaded when the diagnostics initialise. Insert a data disc with as near full capacity for it type as possible and restart the diagnostics. Choose good quality (ideally pressed) media that had been carefully handled since you wish to test the drive hardware and do not want results to be affected by poor media quality.

- Network group is not available.
  - BIOS Network support is commonly disabled in the default shipping state of PCs. Use the BIOS Setup to enable Network support.

- Mouse and touch issues
    - The laptop built-in mousepad does not work in Pc-Check UEFI.
        - Plug in an external USB mouse. Surprisingly, some systems don't provide support for their built-in mousepad device, but do provide support for an external USB mouse. We suggest that technicians should carry a small USB mouse.
    - The centre scroll wheel of the mouse doesn't work.
        - This is normal. This button is unsupported in the pre-boot UEFI environment.
    - Touch screen doesn't work
        - The BIOS has not implemented the touch screen in pre-boot. Pc-Check has support for touch screen 'absolute' devices where the BIOS provides it, but support is not universal amongst touch capable devices.
    - Viewing results
        - Empty page when viewing results in Google Chrome
            - The Google Chrome browser implements a security feature that prevents the use of the local file system for XSL stylesheets. The specific threat is considered somewhat tenuous by many and the lack of any error or warning in normal operating mode means it is not obvious why the content has not displayed. Choices are to open Chrome with the command line flag --allow-file-access-from-files, open the results file in another browser, such as Internet Explorer, or to remove the stylesheet reference from the results file. To permanently disable XSL formatting, edit the ResultsXSL element in config.xml to an empty string, "".

- Pc-Check UEFI freezes or behaves erratically
    - When removing or inserting a USB device
        - Most UEFI BIOS do not provide support for USB hot swap in pre-boot including media, keyboards and mice.

Pc-Check® Diagnostic Software Suite | USB Recovery Guide

The Pc-Check software programs cannot activate without the presence of the 'pccheck.lic' and/or 'pcheckuefi.lic' license files. A Eurosoft USB license plug may also be required. The licence files will be sent by email as attachments.

USB Device Recovery and Restore Guide

1) Download the following file from Recover USB **RecoverUSB.zip**.
2) Locate the compressed file in the Downloads folder. Right-click the compressed file and then click on Properties. Click the General tab, click Unblock, and then click OK.
3) Unzip Recovery Package: **C:\...\Downloads\ RecoverUSB.zip** to a temporary location.
4) Insert the Eurosoft USB Program Device Plug you wish to recover. Execute Runme.bat from the RecoverUSB directory **C:\...\Downloads\RecoverUSB\Runme.bat.** Follow any onscreen instructions. E.g.
   a. Press [**Y**] key to continue or [**N**] to exit the tool.

To Restore the USB Device to its Original State

1) Download the eTestManager application from eTestManager.
2) Locate the downloaded file from the Downloads folder. Right-click the file and then select Properties. Click the General tab, click Unblock, and then click OK.
3) Start the application on your PC and follow the instructions:
   a. Insert the USB when prompted.
   b. Select the Pc-Check product to be restored if prompted.
   c. Your media should update or be restored to a usable state.
   d. Create a log file if any error occurs.
4) For any further problems please contact Eurosoft Support 'support@eurosoft-uk.com', attaching the log file and including your Company name and Contact details or visit the Eurosoft Website Contact Form.
   Eurosoft Technical Support

   Note: To run Pc-Check EuroDOS on UEFI compliant systems, you must first enable the BIOS Legacy (or CSM) mode and disable secure boot options. Remember to restore the original BIOS settings of the unit under test.

DISCLAIMER

Eurosoft (UK) Ltd has endeavoured to meet all technical areas associated with the products in this manual. Any changes, omissions or errors are of no liable consequence, actual or otherwise to the company, its authors or publishers. Further, any changes to the products or documentation may take place at any time without obligation of Eurosoft (UK) Ltd, to notify any person of these changes.

Products mentioned or noted in this document are for identification purposes only and may be trademarks and/or registered trademarks of their respective companies or owners.