

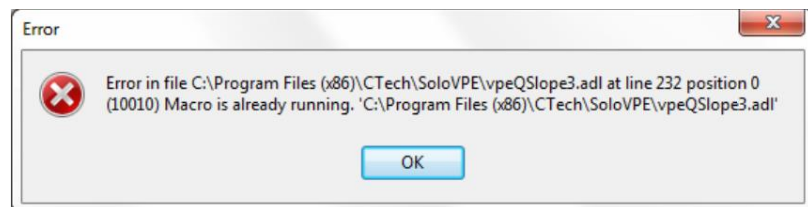
VPE Software – Agilent Cary Win UV “Macro Already Running”

Abstract: This document has been prepared to detail the cause, implications and risks associated with the Agilent Cary Win UV “Macro Already Running” error message that can sometimes be observed in the SoloVPE Software in response to a User double-click action on an ADL created screen control.

Applicability: This article applies to all software application built for the Agilent Cary Win UV environment that leverage the ADL scripting language that is included as a standard feature within the Agilent Cary Win UV Environment. It applies to all versions of the Varian and Agilent Cary Win UV environment that runs in the Windows Operation System (Version 2.x through 5.x) and all versions of the SoloVPE Software.

Introduction: The SoloVPE System is built upon the Agilent Cary 60 spectrophotometric engine. The SoloVPE device added the variable pathlength capability to a well-known hardware platform. The Cary 60 spectrophotometer and its predecessor (the Varian Cary 50) have unique characteristics that made the platform ideally suited to be enhanced by the new technology. However, the extensibility also came with constraints such as limitations on how the hardware interfaces with software. The Cary 60 platform can only be controlled using the Cary Win UV software package which includes a scripting language that allows significant customization of features but is entirely incorporated with the Cary Win UV software architecture. The dependence on the Agilent software significantly influences the UIX of the software and fundamental behaviors.

Detailed Info: There is an observed behavior that occurs in the SoloVPE Software when a user intentionally or inadvertently double-clicks a sidebar screen controls within the Cary Win UV environment that has been created through the ADL scripting language that is included with the Cary Win UV software. When this action occurs an “Error” message box is displayed alerting the user that an exception event has taken place. The error message that is displayed is a “raw” message box or unhandled exception as opposed to a handled or trapped event in which the software developers anticipate the possibility of occurrence, intercept the error event and program the code to gracefully and safely deal with and guide the users out of the exception event.



The nature of the message can be discerned from a number of behaviors and characteristics that clearly indicate this is a Cary Win UV message and not a handled event.

- The style of the message box and the included details such as file names, line numbers and position information show that this is a low-level message.
- The lack of user options to do anything other than acknowledge the event.
- The appearance of the ADL Code window menu bar within the Cary Win UV environment

The software response can contribute to user confusion and alarm. Unfortunately, the behavior is one that cannot be mitigated through the tools available in the Cary Win UV environment. As noted, the root cause of the behavior is double-clicking of a sidebar screen control by the user. The behavior is directly associated with the ADL and Cary Win UV architecture. The ADL feature is an enabling piece of technology because it allows for the customization of the Cary Win UV environment which in this case allowed C Technologies to create a powerful new tool in variable pathlength spectroscopy. It allows knowledge developers to create buttons and other screen objects to let users control hardware, software, and new features and functions. It does so through a series of code files that are accessible through the user interface. When a sidebar button is created in the environment there is a code file containing a macro that is associated with that button. When the button is pressed the macro runs. A user unfamiliar with the interface or with high sensitivity to mouse button click actions can mistakenly double-click a button when only a single click is necessary. At times users may not even be aware that the computer interpreted a double-click and they are confronted by an unexpected message and behavior in the software.

Unfortunately, after much research, it has been determined that there is no way for C Technologies to intercept and handle this type of event, change the response in the Cary Win UV software or work around the issue in some fashion. In fact, the easiest and most effective means to prevent and handle the event is through user training and formal documentation in the user SOP. Despite this constrained behavior, countless organizations have continued to successfully implement the technology in a wide range of environments. This was accomplished after understanding the implications of the behavior.

There are a number of factors and actions that implementation teams can take to mitigate the impact of this software behavior, many of which can be communicated by C Technologies' support personnel during the familiarization and training activities and as they assist companies in their method development and validation activities. These actions include:

- **User Training:** Help-Desk activities strongly indicate that the double-click event occurs most frequently when users have not received training on the SoloVPE. The implementation of a robust onboarding process for new users of the technology will help prevent the issue from manifesting and make sure only trained and qualified personnel are using the system.
- **Detailed SOP Documentation:** Many organizations include specific details on how to interact with the software including explicit language to emphasize that a single-click or push-button action is required when working in the software. In some instances, the documentation includes a troubleshooting section that explains possible behaviors and the reaction plans which includes the double-click “macro already running” event. The most common response to the event is to close and reopen the SoloVPE software.
- **Resident Expert:** Some organizations also invest in advanced training for one or two personnel to have a resident subject matter expert to facilitate immediate response internally for common questions from users.

While the appearance of the error message and the ADL code menu bar can create alarm, the risk associated with the behavior is actually very small. There are some actions that C Technologies recommends to further reduce any risk associated with the double-click behavior.

- The code files that make up the SoloVPE software customization within the Cary Win UV environment are all contained in a single folder on the computer which should be set as a read-only location with read-only files. By properly configuring the NTFS permissions on that location, it is not possible to modify the code files either inadvertently or through malicious intent. Depending on the operating system in use the code files are found in either the “C:\Program Files\CTech” folder or the “C:\Program Files (x86)\CTech” folder and the subfolders within.
- The SoloVPE software is made up of dozens of files and hundreds of pages of code that are developed and released through controlled processes. The complexity of the software is such that even a minor event or change of single character within a script would prevent the software from compiling and running properly.
- The sidebar buttons are the only means of accessing the unique variable pathlength features and functions in the software including the data acquisition and data analysis tools. Therefore, anything that prevents successful execution of the underlying code will actually prevent the acquisition of data in the first place. This is true for both intentional actions such as the SecureVPE software preventing the display of unauthorized buttons or exception events such as the double-click. And when the software is implemented as recommended by C Technologies using the autosave feature, collected data will be protected immediately after acquisition so there is no risk of data integrity issues stemming from the sidebar double-click exception.

Conclusion:

Though C Technologies would like to have a means of handling or eliminating the sidebar double-click behavior detailed in this knowledge base article, its research has confirmed this as a known issue within the Agilent Cary Win UV software that cannot be trapped or avoided. C Technologies has spent time working with customers to help them understand the issue and the constraints of the Agilent Cary Win UV software to find the most appropriate ways to deal with the behavior. The primary means of preventing the behavior from occurring and mitigating confusion is through a solid program of user training. And the risk to data integrity or damaging a system can be dramatically minimized by ensuring proper NTFS permissions on the code folders and files. C Technologies support personnel can always be contacted for additional information and guidance.

Document Info:

Revision History					
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Prepared By: C Technologies, Inc.
 757 Route 202/206
 Bridgewater, NJ 08807
 (P) 908-707-1009
 (F) 908-707-1030
 (E) support@solovpe.com