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Getting Started
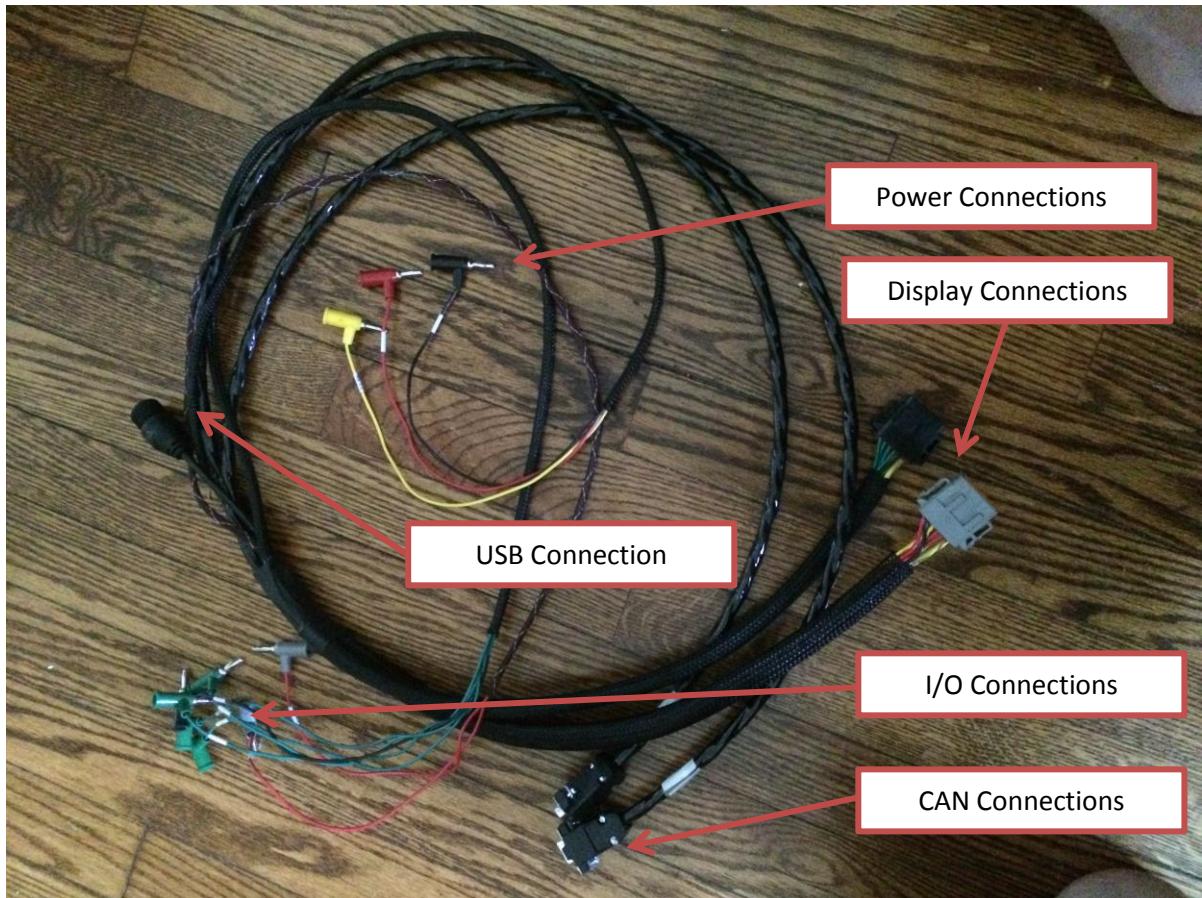## With the CCPilot VI and QuiC

Table of Contents

Purpose

This document is meant to describe the first steps to getting started with our CCPilot VI display and the QuiC tool. This includes hooking the display up, loading the display runtime, loading a configuration and downloading the QuiC tool. The scope of this document will not cover specific details of the QuiC tool or technical details of the display. For detailed explanations of components or features of the QuiC tool please refer to the QuiC tool help. For technical documentation of the CCPilot VI display please refer to the technical manual on our support site (http://support.maximatecc.com/downloads/ccpilotvi).

What You Will Need

To get started with the CCPilot VI display you will need the following items:

1) The CCPilot VI Display

2) A wire harness to connect to the display
   a. We recommend using our CCPilot VI development harness. This harness comes with all available interfaces in an easy to use form. The Maximatecc Partnumber for this harness is: 123626.

   b. If you choose to make your own harness, at minimum, it will require power and a USB connection to use the display.
      i. Please refer to the technical manual for display pin-out.

3) Power supply. The display voltage is between 12-24 Volts DC.

4) The QuiC tool. This is a Maximatecc software tool that will be used to design and develop configurations for the CCPilot VI display. The tool can be downloaded on our support site (http://support.maximatecc.com/downloads/quic).

5) The QuiC Runtime. This is the runtime software that needs to be installed on the display to allow the configurations built inside the QuiC tool to execute properly. The QuiC runtime can be downloaded on our support site (http://support.maximatecc.com/downloads/quic).

Note: The QuiC tool and runtime are released in parallel. Each version of the tool will have an accompanying version of the runtime. If you attempt to run a configuration built with the QuiC tool that does not match the runtime you will get an error while trying to load the configuration onto the display. Configurations built with previous versions of the QuiC tool can be ported to the updated version although they cannot be ported to previous versions.

6) A USB Stick.

Note: We have found that some brands of USB do not work well with the display. We have made every effort to test and include all major manufacturer USB brands yet some brands or sizes may not work well. We find that Lexar brand sticks, especially in the 4GB size, seem to work very well.
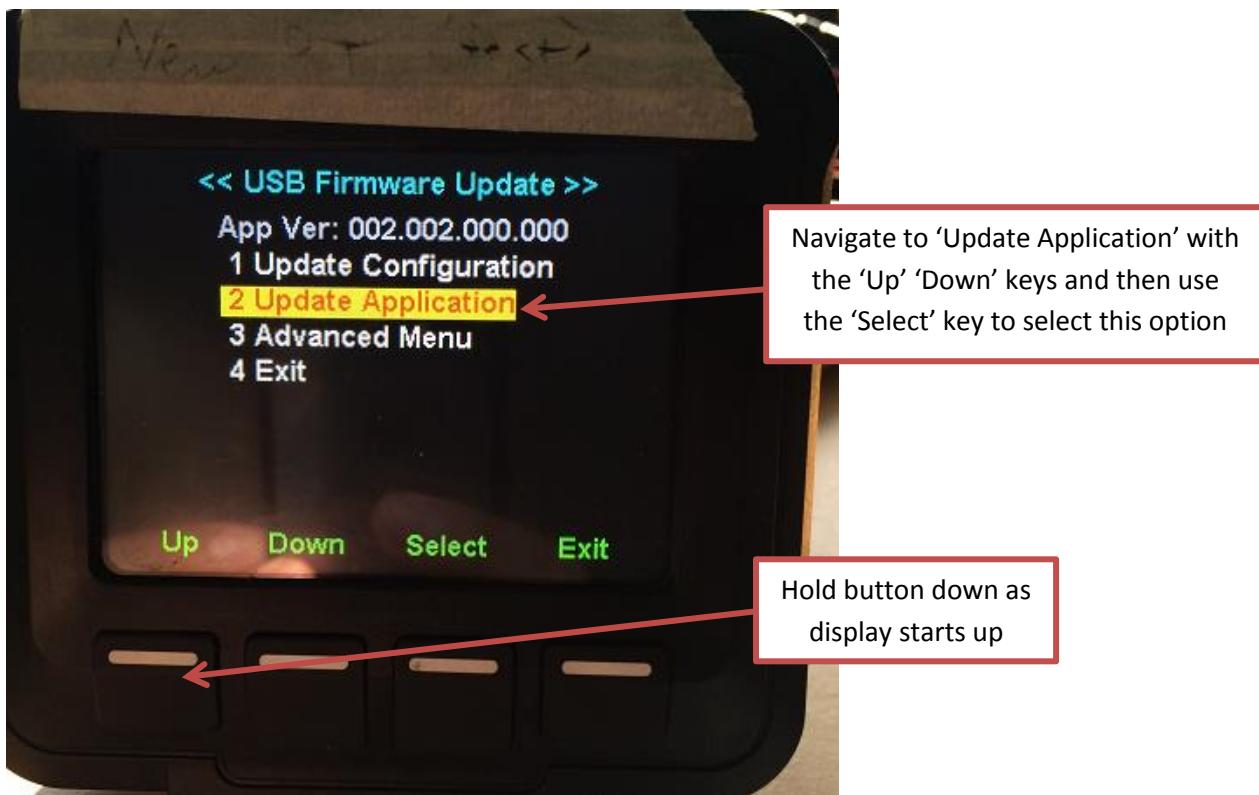
Install the QuiC Tool

To install the [QuiC tool](#), extract and run the files downloaded from the support site.

The QuiC tool is a Windows based tool and can only be installed on Windows based systems. It has been primarily tested using Windows 7 but has been confirmed to install and run on Windows XP as well as Windows 8. The tool may require additional software be installed to run properly. It will automatically detect and install any missing software.

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Install the QuiC Runtime

To install the QuiC Runtime follow these steps:

1) Extract and copy the files from the QuiC runtime zip file to the **root directory** (not in any folders) of your USB drive.
2) Insert the USB drive into the display USB receptacle
3) Power the display on while holding the left most button of the display down
4) The display should boot into a configuration screen. Navigate to the 'Update Application' menu item and then use the key to 'Select' this item.

Once selected the display should recognize the USB, find the runtime files on the USB and automatically update the runtime. If successful you should see a message stating 'Flash Success".

Note: If unsuccessful, please check that the USB device you are using can be read by the display. If it cannot, you should see a message stating the display is unable to recognize a USB device. If it has recognized the USB but did not successfully flash the runtime, please confirm that all runtime files are located on the root directory of the USB drive and try to flash the runtime again.

You have now updated the runtime software on the CCPilot VI display. It is now ready to accept and run a configuration built with the QuiC tool.
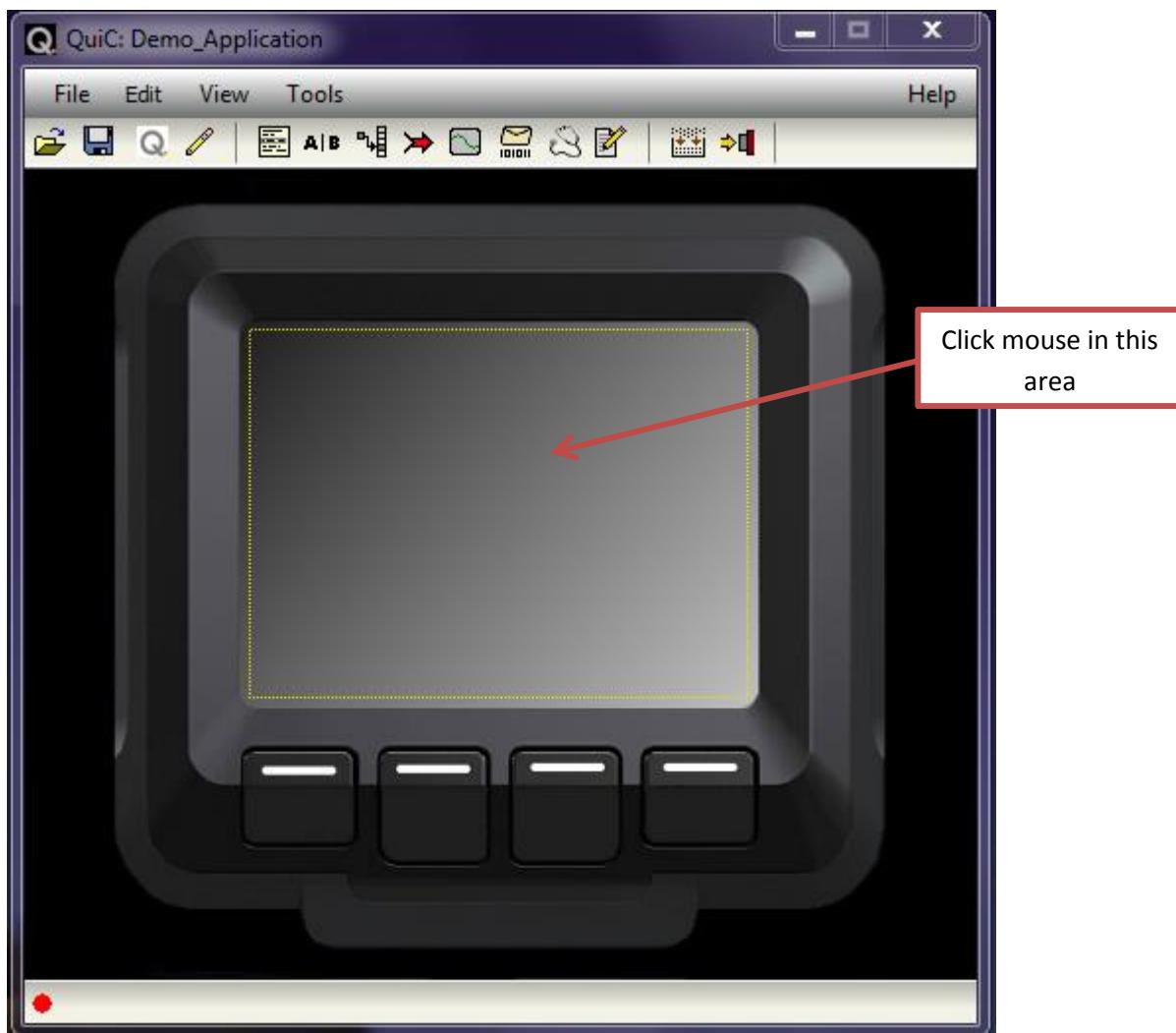
Basics of the QuiC Tool

The Main QuiC Screen

The main screen of QuiC will allow easy navigation to all other forms and screen.

For navigation to the 'Screen Designer' and 'Layout Designer', move your mouse onto the screen of the digital CCPilot VI display pictured in the tool until there is a yellow dotted line around the screen. Now click the mouse.

All other navigation from the main screen of QuiC will take place from the top tool bar. What follows is a brief description of the items in this tool bar.

: **Open project**. It will allow you to open a previously created project.

: **Save project**.   It will save your current project to your specified location.

: **New project**. This will create a new QuiC project.

: **Project Configuration Editor**. This will open the project configuration editor that first opened   when we created a new project. This allows the user to go back and change the configuration of their current project.

: **Script Editor**. Scripts allow the user to create a string of actions the configuration will perform when the script is called. For example, this string of actions may be:

1) Move to another screen in the application
2) Flash a picture on the screen

3) Change the value of a CAN signal
4) Send the CAN signal out on the bus

A|B : **Condition Editor**. Conditions allow the user to create conditions (the tools version of an if-then statement). For example, a condition may be:

1) Monitor the J1939 Engine Speed RPM signal at all times
   - o If the engine speed goes above a certain value, call a script which may:
     - Turn on the buzzer of the display
     - Create a pop-up window warning the user that they have brought the machine to a dangerous RPM level
     - Log that the created a dangerous condition by bringing the machine above a specific RPM
   - o If the engine speed does not go above the value continue as normal

: **Value Table Editor**. The value table allows the user to specify text which relates to the value of a signal. The text may be easier to read and understand to the end user than a number value. Maybe the best example of this would be an ON / OFF signal transmitted by 0 and 1. The value of this signal may be read as a 1 but the end user would like to see 'ON' when viewing the status of the signal instead of a 1 and would like to see 'OFF' instead of a 0. With the value table editor, the user can relate words like 'ON' and 'OFF' to specific values of signals if desired.

: **Output Editor**. The output editor allows the user to configure the two digital outputs of the CCPilot VI display.

: **Signal Editor**. The signal editor contains 4 different tabs which are:

- **J1939 RX Signals**. These are J1939 signals that are set up by the user to be received by the display, coming from another controller. The QuiC tool has an included J1939 CAN stack so J1939 signals can be added from the standard J1939 database of signals or added as a custom message set up by the user.
- **Virtual Signals**. These can be thought of as variables in your project. Virtual signals can be created to store data either temporarily or long term, persistent over the display shutting down.
- **Diagnostic Signals**. These signals are configured with diagnostic message data (called DM1, DM2 etc). When a DM1 message is received by the display, it will check to see if the configuration matches the signals set up in this editor. If it does the signal set up will contain a value of 1. This is a way to check for certain DM1 messages across your project.
- **System Signals**. These are signals that are hardware specific. Some of these signals can only be read while others can be modified with scripts. These signals control hardware specific items of the display such as the display brightness and the configuration of the displays four configurable inputs.

: **J1939 Transmit Message Editor**. The transmit message editor allows the user to configure J1939 messages to send out on either or both CAN busses.

: **Diagnostic Code Editor**. The diagnostic code editor allows the user to add Diagnostic messages (called DM1, DM2 etc) to their project. These messages are usually sent by

controllers to communicate problems with the controller or the machine. Because the QuiC tool contains a J1939 stack these messages can either be added from the standard J1939 database of messages or added as a custom user created message. This editor works in conjunction with the J1939 Diagnostic Warning System Feature.
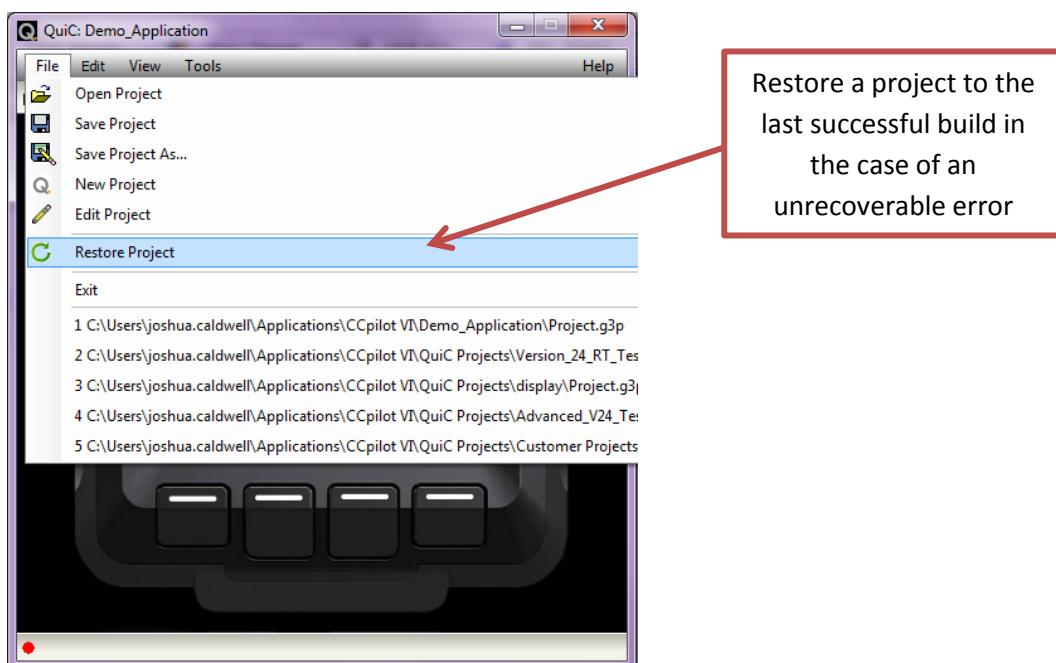
: **Logging Editor**. The logging editor allows users to log either of the following into a text file which is stored on the device. This text file can be saved to USB through the use of scripts.

- Alarms. These are system based alarms or alarms set up by the user. One file is created on the device to store a maximum amount of alarm data.
- Data. This logs data from selected signals in the project.

: **Build Project.** This will build the project and compile your application. If there are any errors in the project they will be identified in the build window.

Note: It is always a good idea to build your project once or twice every hour. If you receive errors that you are unable to track down and resolve you will lose all work from your previous build of the project. You may always revert your project to the last successful build by going to 'File'->'Restore Project'. Therefore, the more you build while you are working, the less you may potentially lose if you generate an error you cannot find.
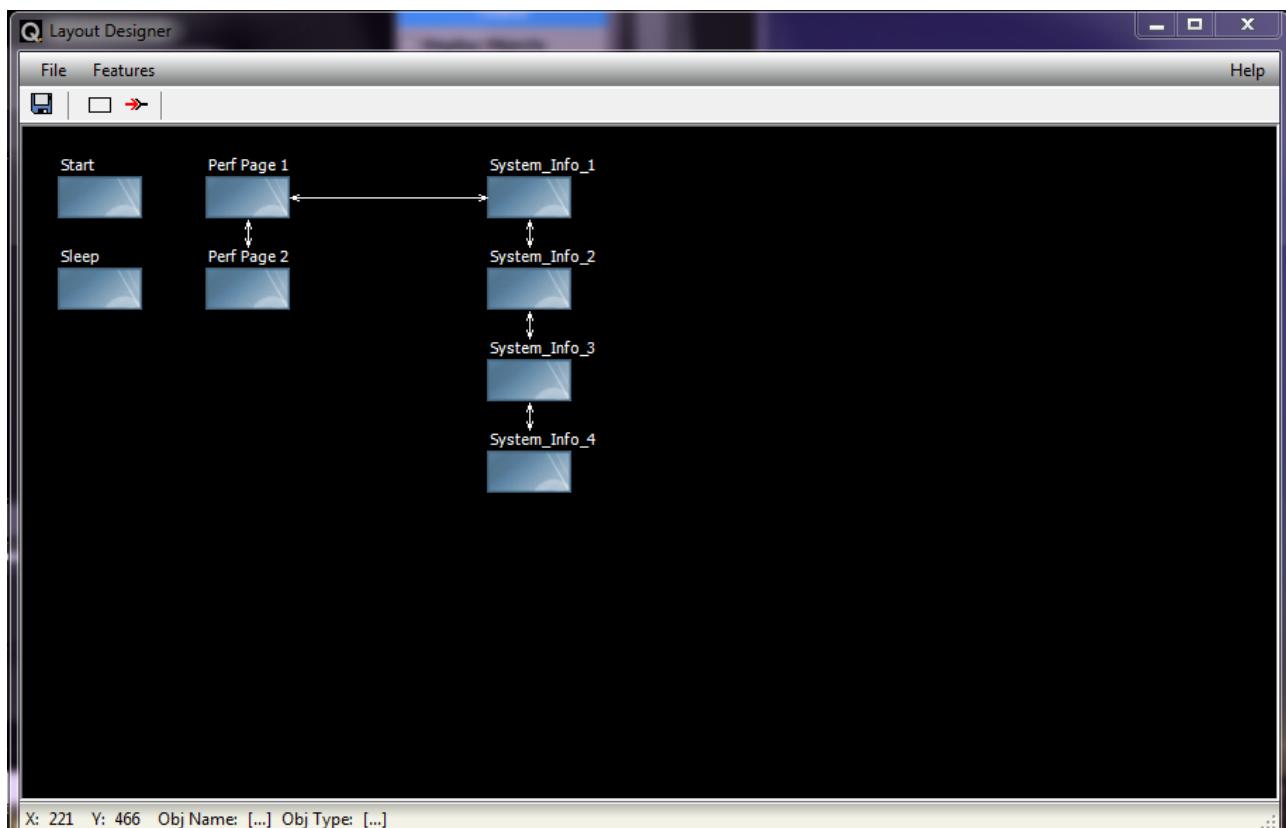

Restore a project to the last successful build in the case of an unrecoverable error

: **Copy Config to USB**. This allows the user to copy their compiled application to the USB (or somewhere else on their computer) in preparation for putting their application onto the display.

Note: This will save the most recent build of the project onto the USB. Therefore, to get your most recent project onto the display you must first build the project before this step.

The Layout Designer Screen

As instructed in the section above, the Layout Designer Screen is entered by mouse clicking inside the screen of the digital CCPilot VI picture in the main screen of the QuiC tool.
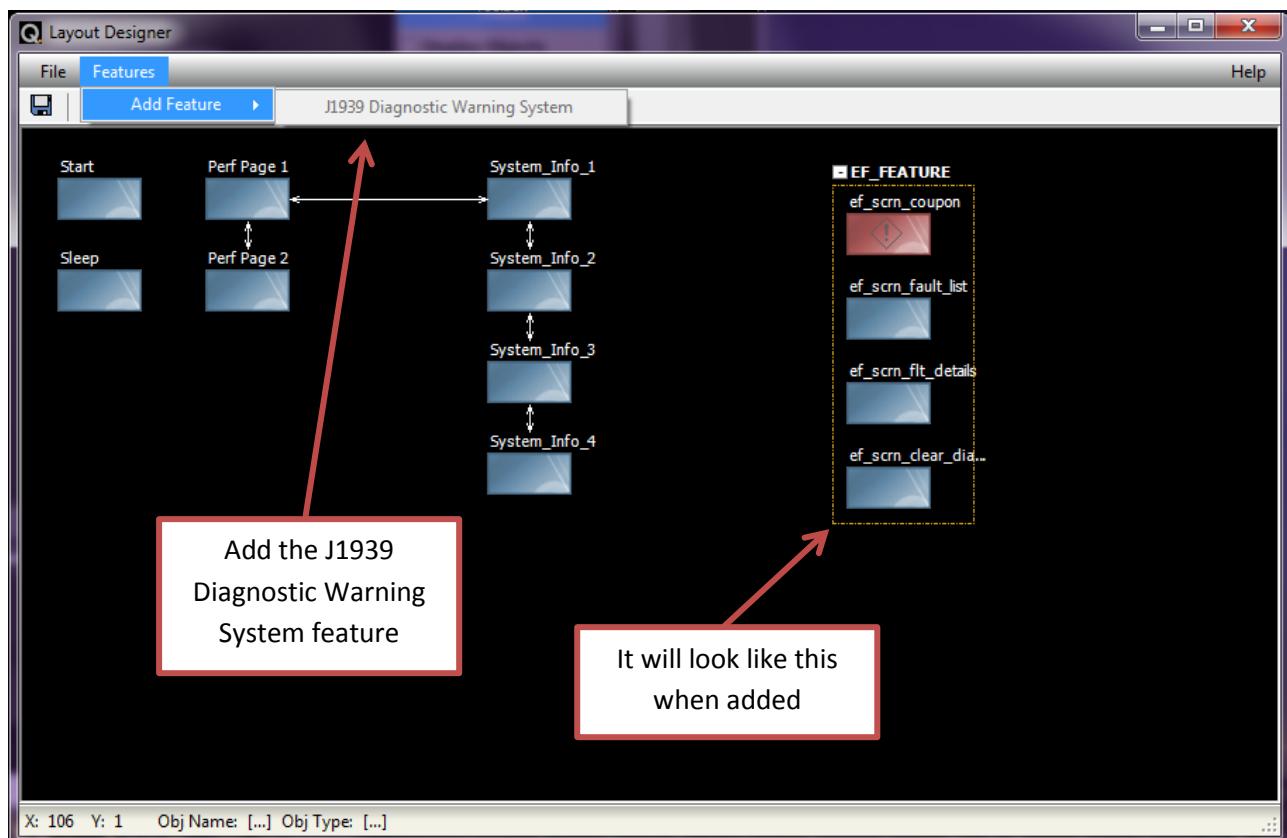

The Layout Designer screen shows the different screens contained in a user project and shows any hard links to specific screens through the use of arrows to and from screens. There are a couple things that can be done in the Layout Designer screen.

- : **Save project**.   It will save your current project to your specified location.

- : **Create Blank Screen**. This allows the user to create a new, blank screen inside the project. The screen can be clicked and dragged anywhere in the screen designer.

- : **New Connection**. This allows the user to create a connection both to and from a specific screen in their project. This is a hard connection. It is also possible to create connections to screens with scripts. These connections are not shown in the screen designer.

J1939 Diagnostic Warning System

The J1939 Diagnostic Warning System is a feature within the QuiC tool that allows the display to receive Diagnostic Warning System messages (DM1, DM2 messages) from a controller. The feature is pre-setup and only needs to be added to a project. To add this feature, in the Layout Designer screen toolbar, go to 'Features'->'Add Feature'->'J1939 Diagnostic Warning System'.
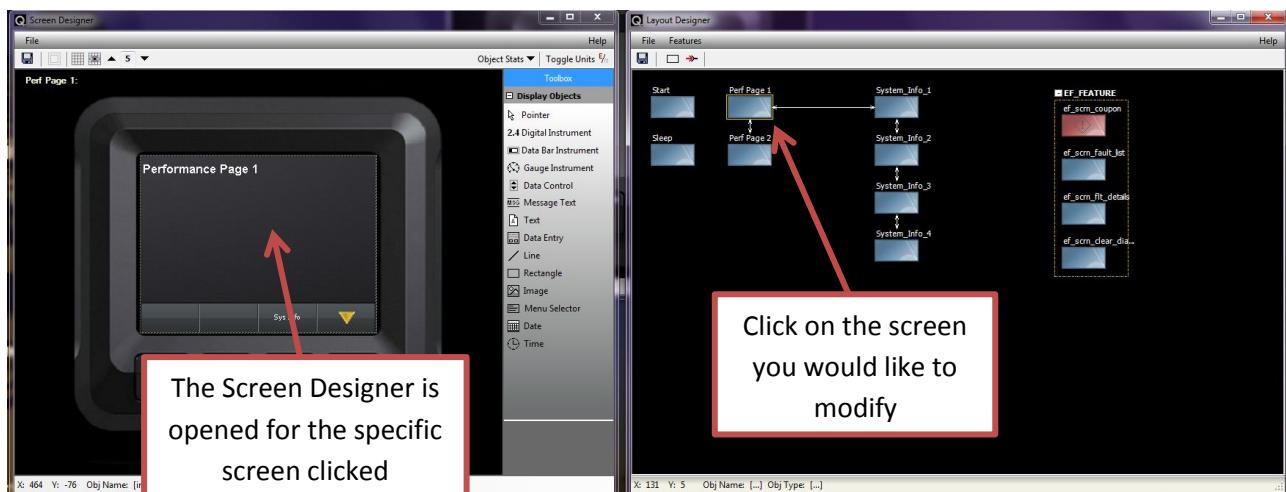
This feature works in conjunction with the Diagnostic Code Editor described in the QuiC tool main screen section.

Note: If using this feature, it is much easier to start with an Advanced Template project. When starting with an Advanced Template, this feature is automatically added to the project with all required scripts and conditions to make it work correctly. If starting with a basic template and inserting this feature, some scripts and conditions may need to be added for correct implementation. To start with an Advanced Template, 'Advanced Template' should be selected instead of 'Basic Template' when creating your QuiC Project.
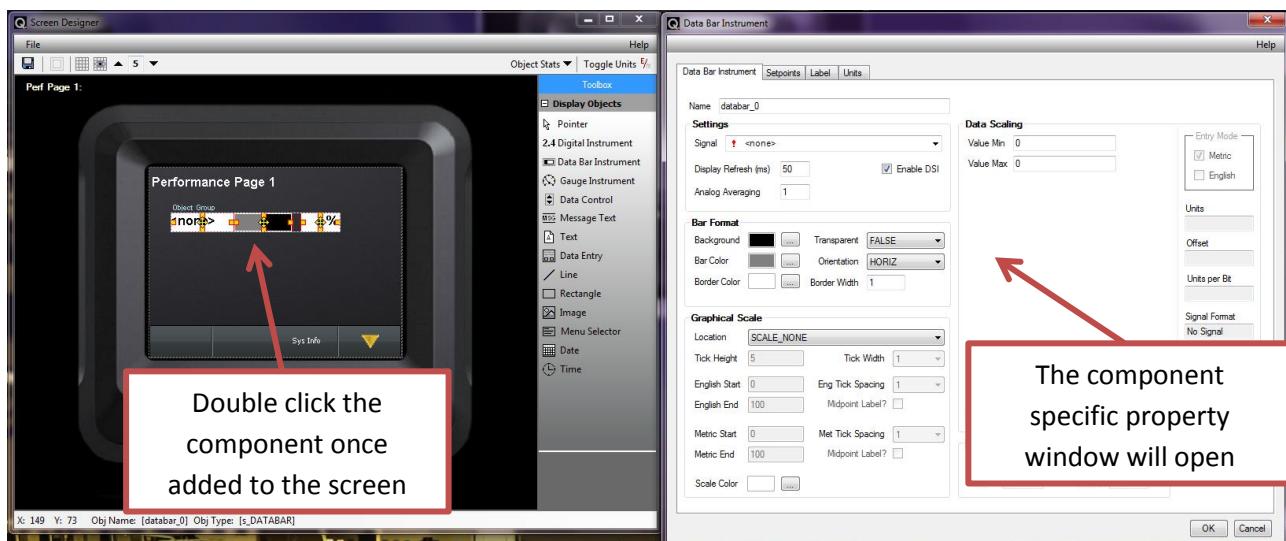
The Screen Designer

To enter the Screen Designer for any screen in your project you will first need to have the Layout Designer Screen open. Now, you can click on any available screen in the Layout Designer screen to see it in the Screen Designer window.

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The Screen Designer is opened for the specific screen clicked

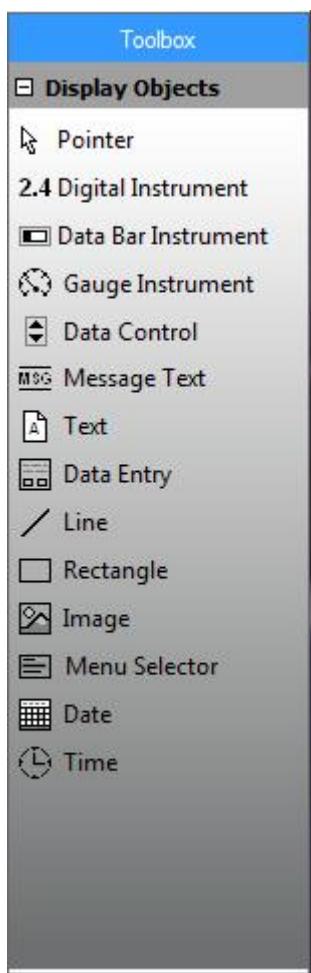Click on the screen you would like to modify

The screen designer is where the user may add components and widgets to their project. This is where the user will define the look and feel, or user interface, of their project.

Inside the screen designer there are many different components that have been designed into the tool that can be added by the user. The components that are available to be added to a screen are shown on the right side of the screen in a tool bar. To add a specific component, click on the component you would like to add and then click inside the CCPIlot VI screen in the Screen Designer window.

Each and every component has properties associated with the component. This is where the user can, for example, select the signal data the component will display or change things such as text size or color of the component itself. To modify the properties of a component, double click on the component within the screen.
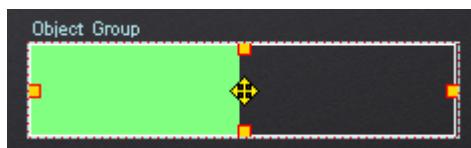

Double click the component once added to the screen

The component specific property window will open

What follows is a brief description of the different components available in the Screen Designer tool bar.

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Toolbox
□ **Display Objects**
Pointer
2.4 Digital Instrument
Data Bar Instrument
Gauge Instrument
Data Control
MSG Message Text
Text
Data Entry
Line
Rectangle
Image
Menu Selector
Date
Time

Pointer : This will not add anything to the tool itself but will change the mouse back into a pointer in case an object was selected to be added. To cancel adding an object the user may also press the 'esc' key of the keyboard.

2.4 Digital Instrument : The digital instrument will show the digital value of a signal in the user project. For example, if the user is monitoring fuel level, it will show the fuel level as a digital number value (e.g. 78%). The value shown is based on the properties of the signal which the digital instrument is showing.

Data Bar Instrument : The Data Bar Instrument allows the user to add a data bar to their project and display the value of a signal through the use of a data bar. Using the fuel level example above, the fuel level would be displayed by filling the data bar with a user defined color. The data bar can be oriented either horizontally or vertically.

Object Group

Gauge Instrument : The Gauge Instrument allows the user to add a gauge to their project and display the value of a signal through the gauge. The gauge picture can be

created and selected by the user. We have included a default gauge in the bitmaps folder inside the project folder which is pictured below.

Data Control : The data control object lets the user create a control on the screen which will allow the end user of the tool to change the value of a signal set up in the tool through the use of increment and decrement keys. An example of this, which is used in the Advanced Project template, is the display backlight. With a data control object, the end user can change the value of the backlight signal in the project which will raise or lower the backlight of the display. This control is useful for projects where the end user will need to modify data to be used by the display or sent back to another controller.

MSG Message Text : The message text control is used to display signals that are set up as character type signals. The digital instrument, explained above, will display signals that are set up as number based signals. This displays text based signals. This includes the Serial Number of the display itself or some J1939 signals that are set up to transmit characters instead of numbers.

Text : The text control will allow the user to enter text to be displayed within the text component. The text entered in this component is not dynamic (cannot be changed during runtime). If the text should be changed during runtime, the Message Text component above should be used.

Data Entry : The Data Entry component will create a box on the screen where the end user may enter data. The type of data being entered can be configured within the component. Choices include:
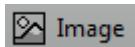
- Date Entry
- Time Entry
- Numeric Entry. Useful for entering password or changing the value of a signal by entering the desired value.
- General Entry. Useful for entering text based passwords or changing the value of a character based signal.

Line : Allows the user to add a simple horizontal line to their project.

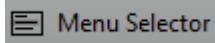**Rectangle** : Allows the user to add a simple rectangle to their project. Can be configured to fill the rectangle with a color or make the interior transparent.
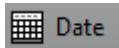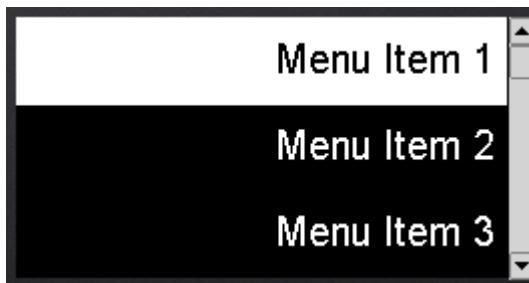
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Image : Allows the user to add an image to their project. Image format may be jpeg, png or bmp.

Note: Images cannot be resized within the project; they must be the correct size before importing into the project. The display resolution is 320x240 so images of this size will take up the entire screen. Images larger than this, in either width or height, will not be imported.

Menu Selector : The Menu Selector object will add a selectable text based menu to the screen. The user can how many menu selections are available to the end user and what happens if an item is selected.

Menu Item 1
Menu Item 2
Menu Item 3

Date : Displays the date which is currently saved in display memory. The user can configure how the date is displayed.

Note: The display has a real time clock which will run only if the display has power. The date must be updated and the display must have a power source available to keep accurate track of the correct date once set.
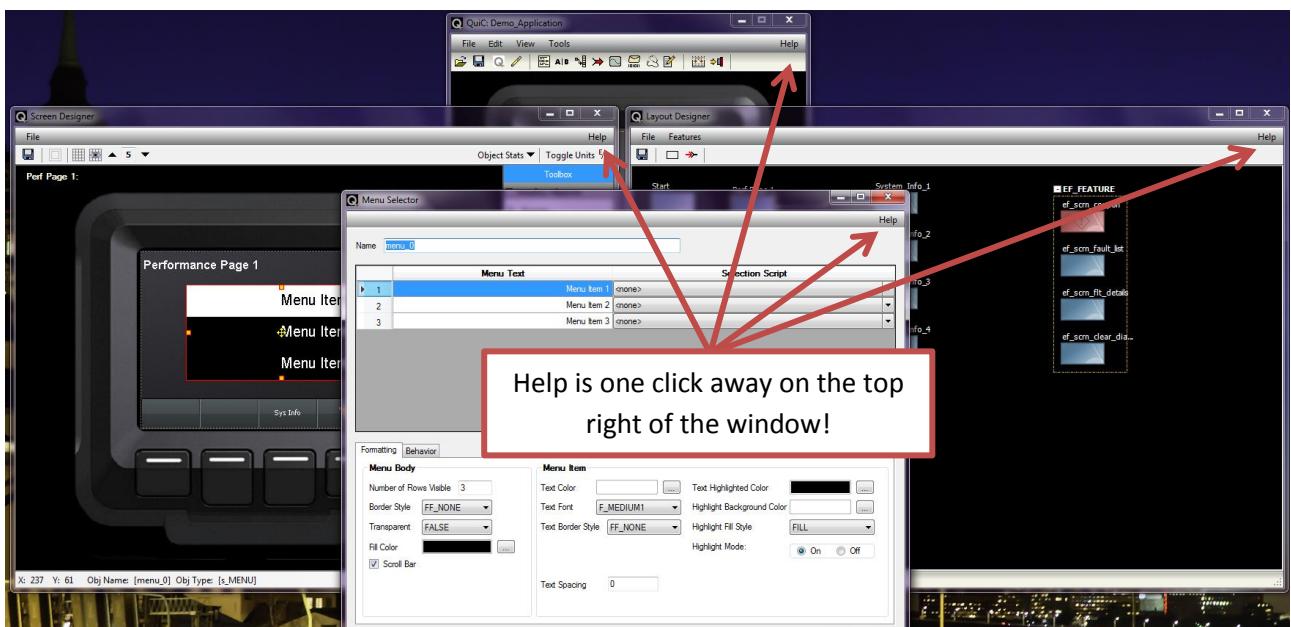
Time : Displays the time which is currently saved in the display memory. The user can configure how the time is displayed.

Note: The display has a real time clock which will run only if the display has power. The time must be updated and the display must have a power source available to keep accurate track of the correct time once set.

Going further with the QuiC tool

The purpose of this document is to cover the first steps to getting started with the CCPilot VI and give a general overview and description of the QuiC tool. The QuiC tool has an excellent in-tool help application which will be the primary means for learning the tool and the options available in each of the different editors and forms within the tool. On each different screen in the tool there is a 'Help' option in the top right of the topmost tool bar. By clicking the help on each page, the help section will bring up a description of the different options on the page and a detailed description, with further links to subsections, for each option on the page. The help section should be your first option when you have a question about how to accomplish something within the tool or what a specific item in the tool is used for.
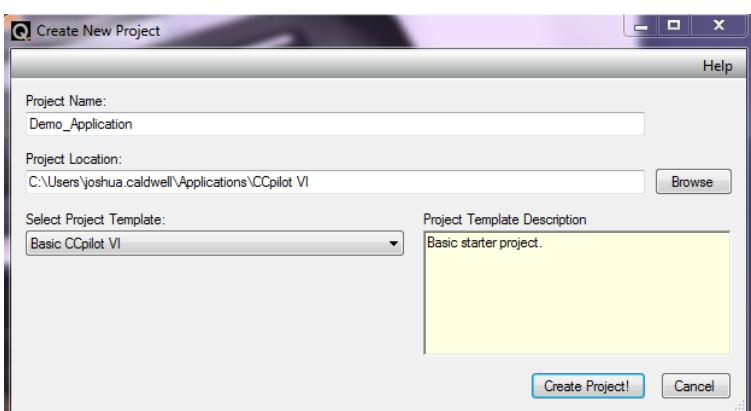
Creating your first project with the QuiC tool

Now we will create a simple project with the QuiC tool. We will first open the QuiC tool that we installed in the previous section and do the following:

- Create a New Project by selecting 'File' -> 'New Project' or by selecting the New Project button on the main tool screen.

New Project Button

- A 'Create New Project' window will open. Give the project and name and select the location on your computer you would like the project to be saved. For our first project we will start with a basic Template so click the 'Select Project Template' drop down list and select 'Basic CCPilot VI'.

    Note: The project should be saved to a local directory of your computer. If saved to a network location or location that may otherwise take a longer time to access, the time to build the project may be increased.

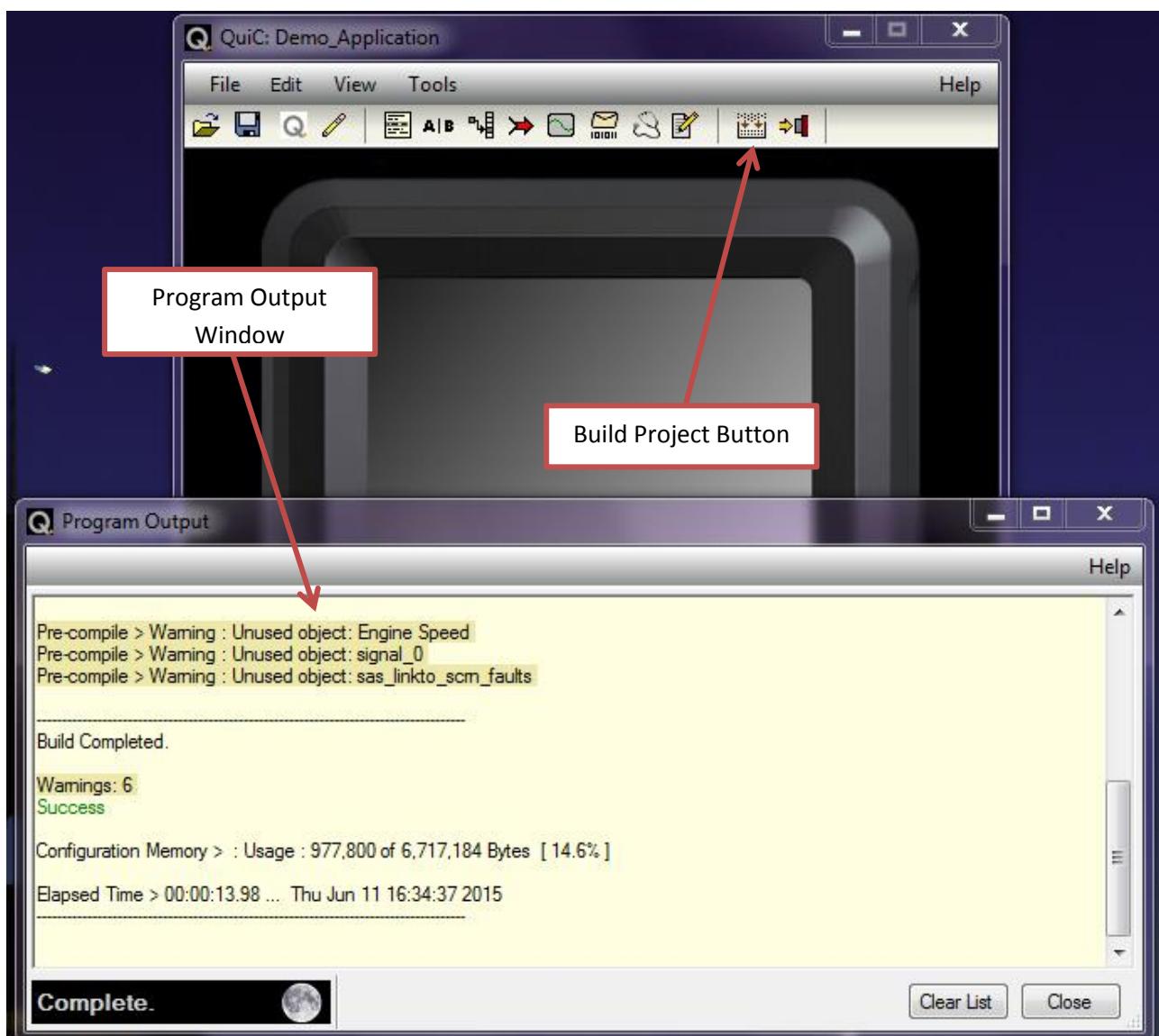- The project should now load and the 'Project Configuration Editor' screen should open. In this screen we will have 3 different tabs:

    1) Project Overview – You may enter in the creator of the project and any notes on the project or specific revision of the project. This is not necessary to continue.

2) Project Configuration – Several base selections can be made in this tab. We will leave everything to their defaults although you can use the 'Units' selection box to change the default units of the project between 'English' and 'Metric' if desired.

3) ECM DTC Configuration – This tab is used to set up controllers for receiving Diagnostic Trouble Codes. By Default, an 'Unknown' controller is set up with a 0xFF source address. This address specifies to the tool that it will accept trouble codes from any source address. For the purposes of this demo we will leave this as it is but DTC setup is covered more specifically in the knowledge base of our support site (http://support.maximatecc.com/knowledge-base/quic).

-   When ready, select the 'OK' button of the 'Project Configuration Editor' window and select the 'Close' button on the 'Program Output' window. You will now see the main QuiC tool screen.
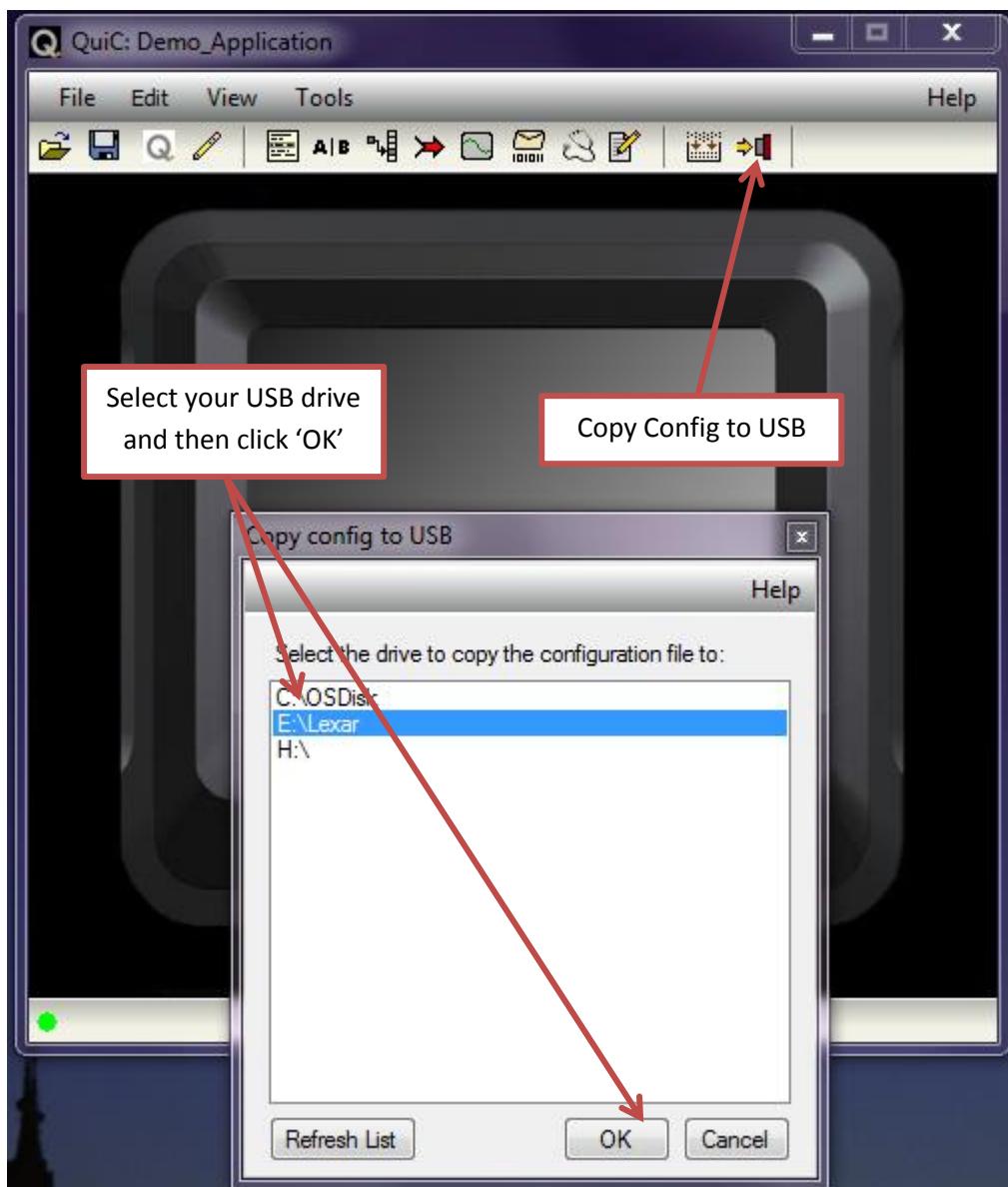
For the purposes of this document we will not be making any modifications to the project. We will compile the project as is, copy to USB and run on the device.

Now that we are ready to put the project onto the device we will compile the project by using the 'Build Project' button.

When the 'Build Project' button is clicked the 'Program Output' window will open. This will show the status of the project build as well as any warnings or errors in your project. If errors are present, these will be highlighted in red. If errors occur your project will not successfully build. Errors need to be resolved before the project will make a successful build. If warnings are present, these will appear highlighted in yellow. Warnings are items that will not prevent your project from successfully building but should be noted and potentially resolved. If all is successful, you should see a 'Build Complete' and a green 'Success' noted at the end of the Program Output window. You may close this window.

Now that we have successfully built our project we need to save it to a USB drive to put it onto the display. To do this we will first insert the USB drive into the computer. Once the drive is recognized by the computer, click the 'Copy Config to USB' button in the main screen of QuiC. The 'Copy Config to USB' window should open with a list of different storage locations recognized by Windows. Select the location corresponding to your USB drive and then click the 'OK' button.
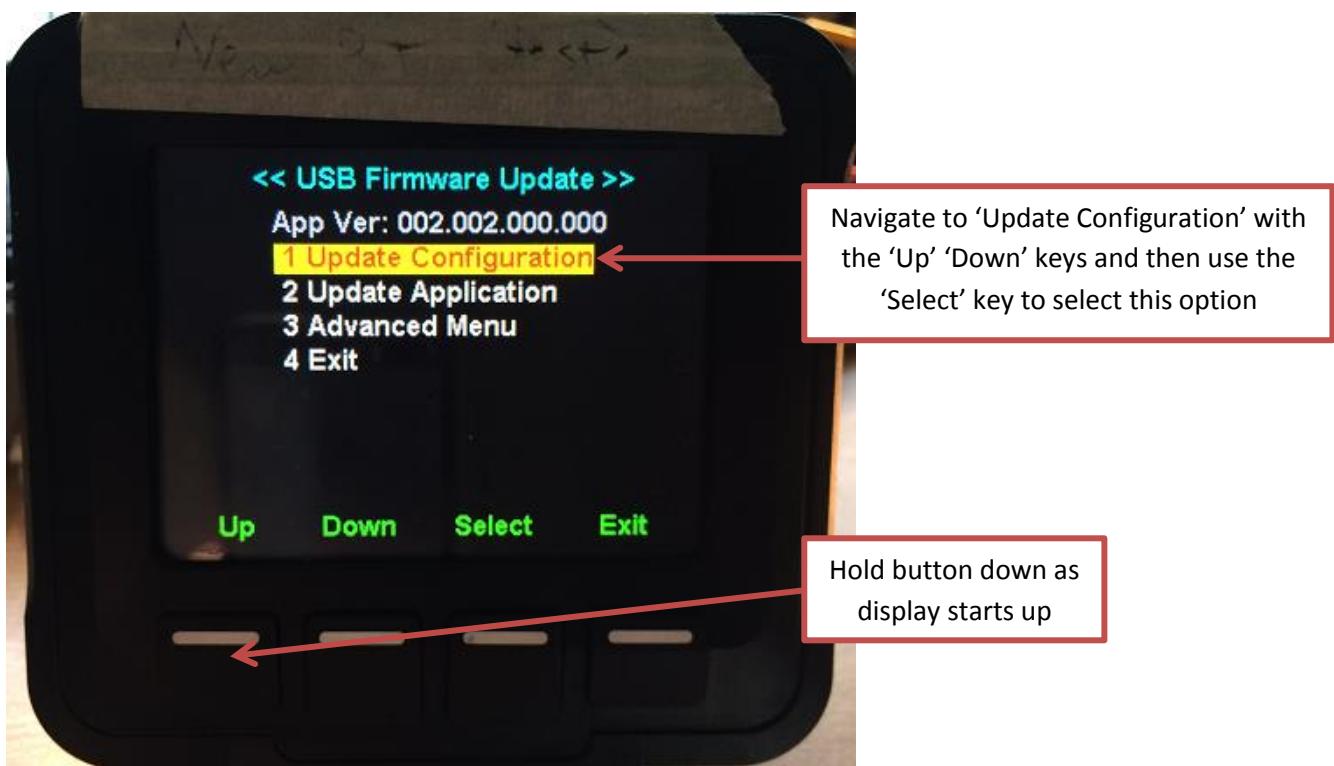
A message should come up stating 'Config copied. Safely eject drive if required'.

You have now created and saved your first project to USB and are ready to put it on the display!

Load a QuiC configuration to the display

To load your QuiC configuration to the display follow these steps:

1) Insert the USB drive into the display USB receptacle
2) Power the display on while holding the left most button of the display down
3) The display should boot into a configuration screen. Navigate to the 'Update Configuration' menu item and then use the key to 'Select' this item.

Navigate to 'Update Configuration' with the 'Up' 'Down' keys and then use the 'Select' key to select this option

Hold button down as display starts up

Once selected the display should recognize the USB, find the configuration file (named config_img.bin) on the USB and automatically update the configuration. If successful you should see a message stating 'Done. Press any key". Press any key, this will take you back to the menu pictured above, and then press the 'Exit' key.

Note: If unsuccessful, please check that the USB device you are using can be read by the display. If it cannot, you should see a message stating the display is unable to recognize a USB device. If it has recognized the USB but has a warning message that says there is a version mismatch, this is due to the runtime being a different version than the tool version where the configuration was created. Please check your runtime and tool versions to ensure they match. You may need to update the runtime on the display or port your project to a later tool version before it will load.

You have now updated the configuration software on the CCPilot VI display. The project is now successfully loaded onto the display!

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Technical Support

We have not completed a basic overview of using the CCPilot VI display with the QuiC tool. Some further information sources are identified below:

For Information about the CCPilot Display

More detailed information, including technical documentation and drawings, about the CCPilot Display can be found on our support site here:

http://support.maximatecc.com/downloads/ccpilotvi

For Information on the QuiC Tool

The best source for information on the QuiC tool is the in-tool help. This contains detailed information on all components and items inside the tool.

We also maintain a knowledge base on our support site where we try to address and answer some common questions about the tool. If you cannot find the required information from the in-tool help, please check the knowledge base here:

http://support.maximatecc.com/knowledge-base/quic

Application Specific Information

For questions regarding your specific application or how to accomplish something that may not be identified in either the in-tool help or the knowledge base, please contact your local Applications Engineer, sales contact or send an email to support here:

http://support.maximatecc.com/support

Issue and Bug Reporting

We make every effort to fully test the QuiC tool and runtime for issues before release. That being said, if you experience any bugs that are not already identified in the release notes for the tool please contact your local Applications Engineer or sales contact or send an email to support through this form:

http://support.maximatecc.com/support