uEZ® Project Maker Guide

Covers the following products:

µEZ

µEZGUIs

DK-TS Kits

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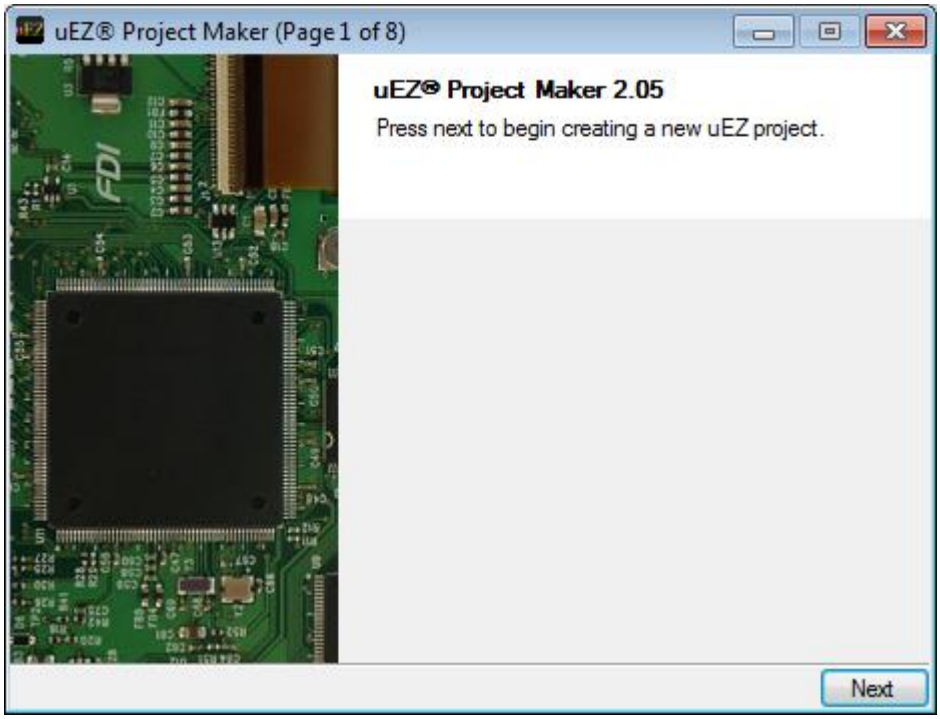
1. Introduction

This guide covers how to use the uEZ Project Maker. The uEZ Project Maker will create a simple Jump Start project to help get you started with uEZ on one of FDI's touchscreen kits.

2. Running the Project Maker

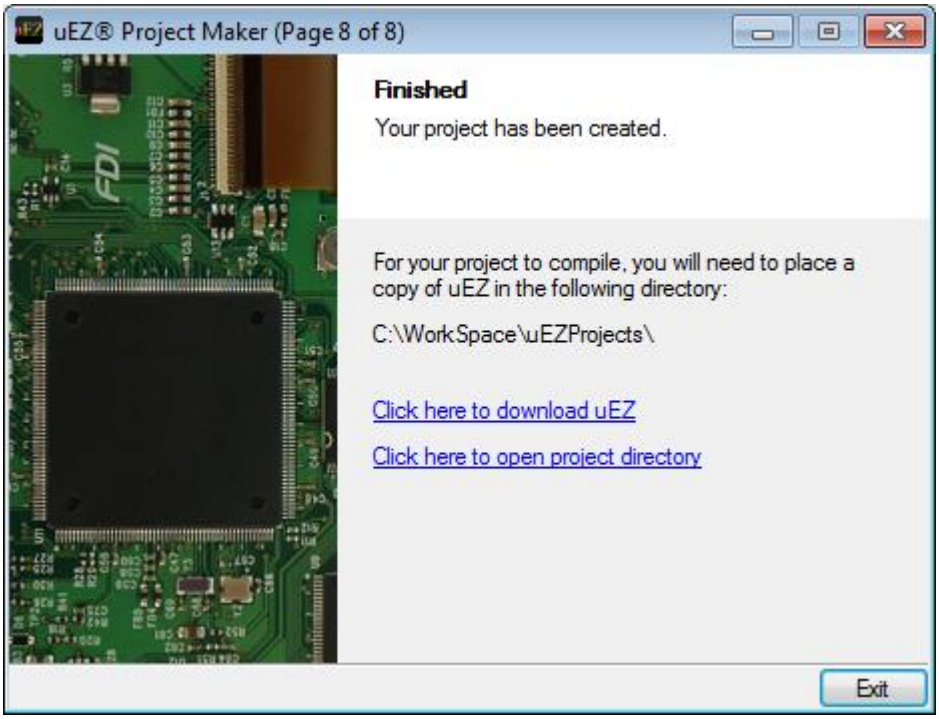
To run the project maker, run the uEZProjectMaker.exe in the root of the uEZ_v2.XXX.XXX folder. For Linux a ".sh" script is provided.

a. Run the application.

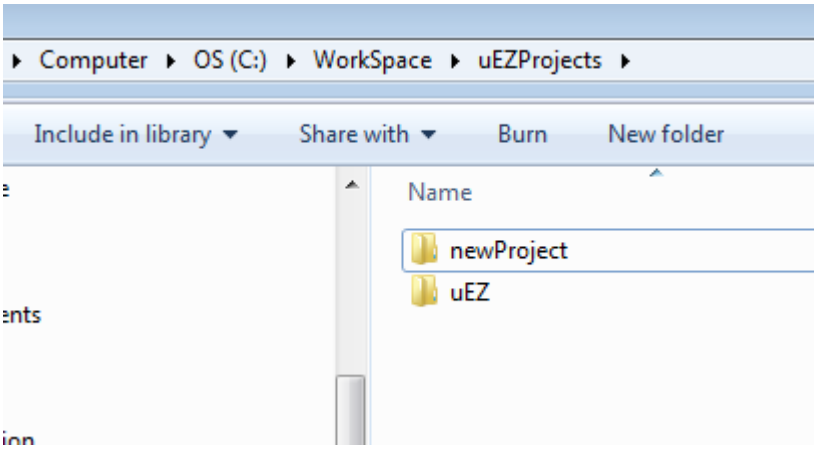


b. Follow the instructions on each screen to select the RTOS, processor, platform, and IDE you'll be using.
c. When prompted enter the project name.
d. When prompted select a directory where you would like the project to be created. This project maker version will automatically select the current path, which will be correct for the adjacent uEZ folder.
e. At the summary screen, verify all the information is correct and press the <Create> button.

f. On the final screen, the Project Maker will provide a link to the new project build directory on your computer and a web link for downloading uEZ.



g. When running uEZ Project Maker from the uEZ release package, the uEZ folder will already be present in the project's root directory. This is the directory that you told the project maker to create your project.



h. Before you can compile and run your new project, you'll need to compile the uEZ library project in the uEZ directory. This can be found by following navigating to uEZ/Build/Generic/[Manufacturer]/[processor]/[RTOS]/[IDE]/.

i. Open the library project found at this location and compile it. Now you should be able to open your new application project, compile and run. For more information on how to do this, please refer to the "uEZ QuickStart Guide"

3. Installing uc/Probe (to run associated demo)

µc/Probe must be installed from the Micrium Website before the demonstration project can be run. Follow the steps below to install it.

a. Visit the µc/Probe website at micrium.com/tools/ucprobe
b. At the bottom of the page, click the "download a trial version" link.
c. Under the "Software Installers" section, click the "µc/Probe Windows Installer" link.

NOTE: On this same page the µc/Probe user's manual is available for download.

d. Click the "Log in to Download" link on the left side of the page.
e. Follow the directions to sign in with your Micrium account, or create a new account.
f. After logging in successfully download the installer.
g. After the file has downloaded, run the installation file.
h. Use the default options when installing uc/Probe, and follow the directions on-screen to install by pressing the <Next> button.
i. After the installation is finished, µc/Probe is ready to be used.

To install the trial or permanent license key, follow these steps:

a. Click <File> in the µc/Probe window in the top left corner.
b. Next click the <Activation> menu option on the left side. A dialog box will pop up.
c. Enter the 20-digit license key in this dialog box.

NOTE: The uEZGUI kit will come with a 30-day trial key, located on a card inside the kit.

NOTE: On this same dialog box is a link to purchase a full license, which will direct you to this webpage: https://www.micrium.com/buy/micriumdirect/

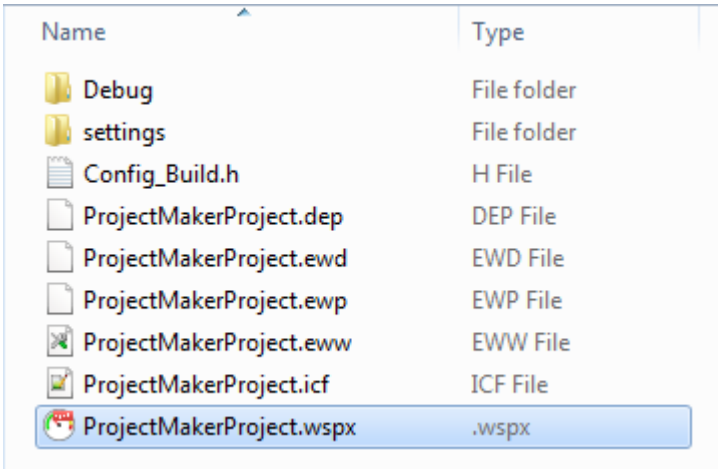
d. Click the <Activate> button to finish activation the license.
e. You may now click the <close> button to close the dialog box.

4. Running the associated µc/Probe Demo

To run the µc/Probe demo, the uEZ GUI must be running with the debug build programmed from the project maker project. The µc/Probe demo file is setup to look for the executable inside of the debug output directory.

NOTE: As of µc/Probe version 4.2.1.544 the output file must be compiled with the compiler option "--no_dwarf4" to be compatible with µc/Probe. Please consult the compiler's manual for information on this setting if it is needed.

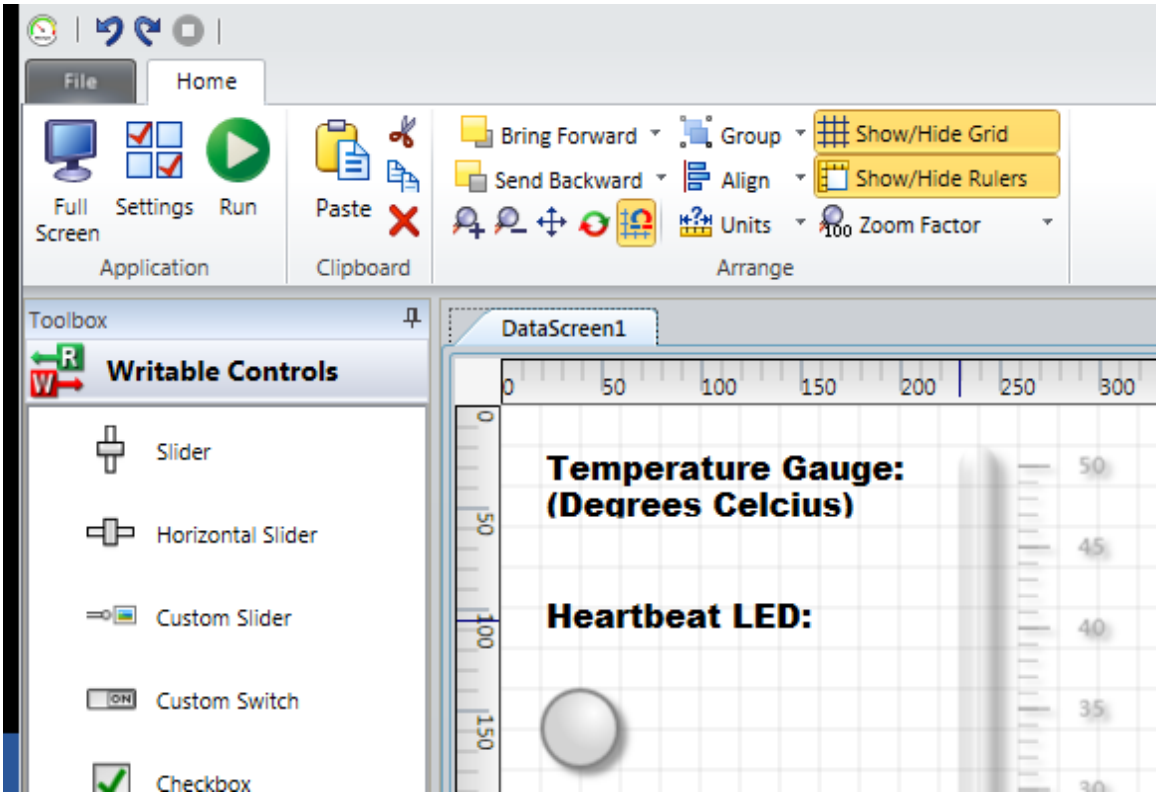
a. After the uEZ GUI has been programed, navigate to the project directory. See the example below for the project maker project named: "ProjectMakerProject".



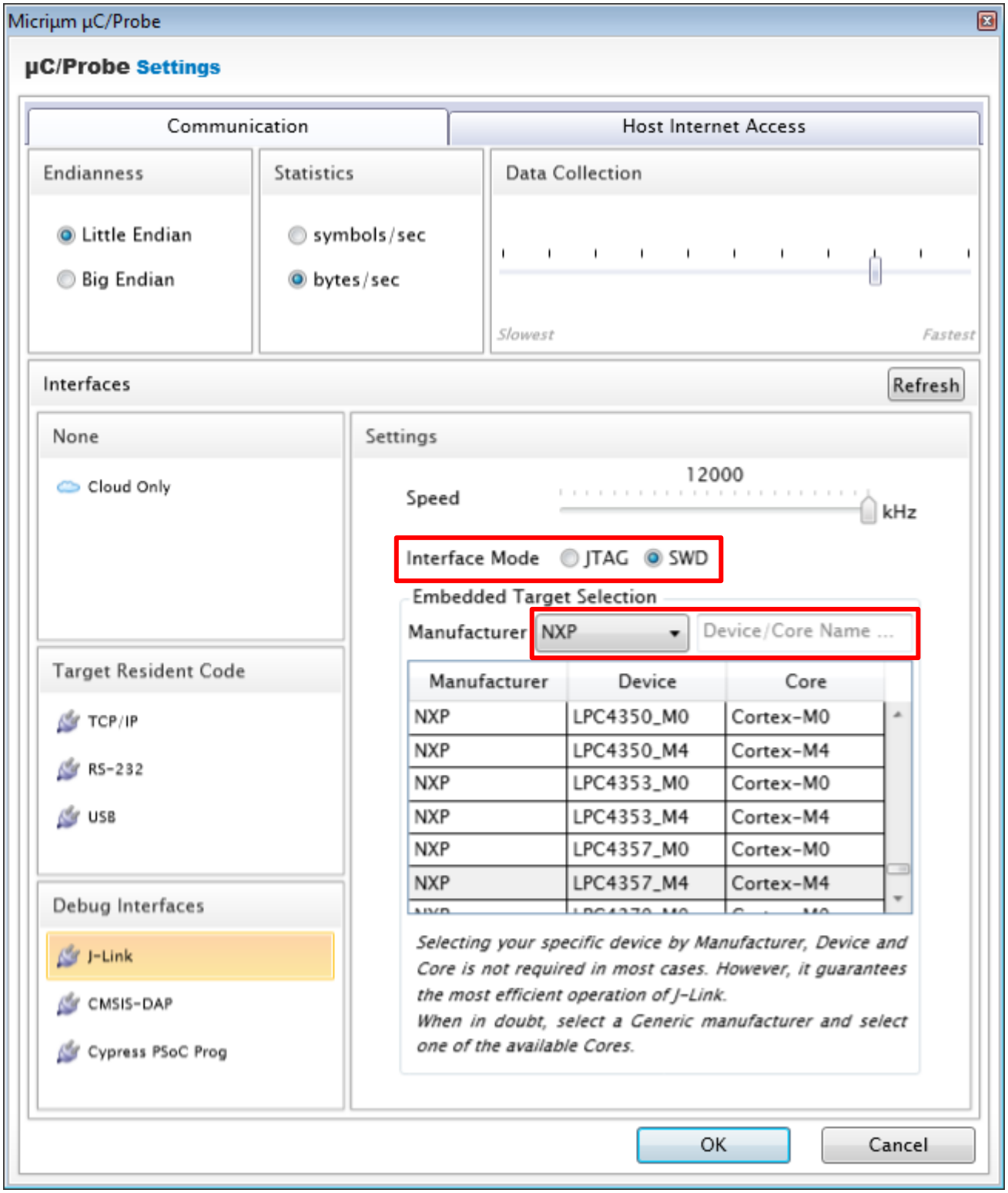
b. You will see a file with the file type ".wspx". This is the µc/Probe project file.
c. Double click the project file to open it. µc/Probe should now load.

NOTE: µc/Probe might take several seconds to load.

d. After µc/Probe has loaded, the following screen will be visible.



e. Click the <Settings> button in the top left corner of the application. The dialog window shown below should appear.



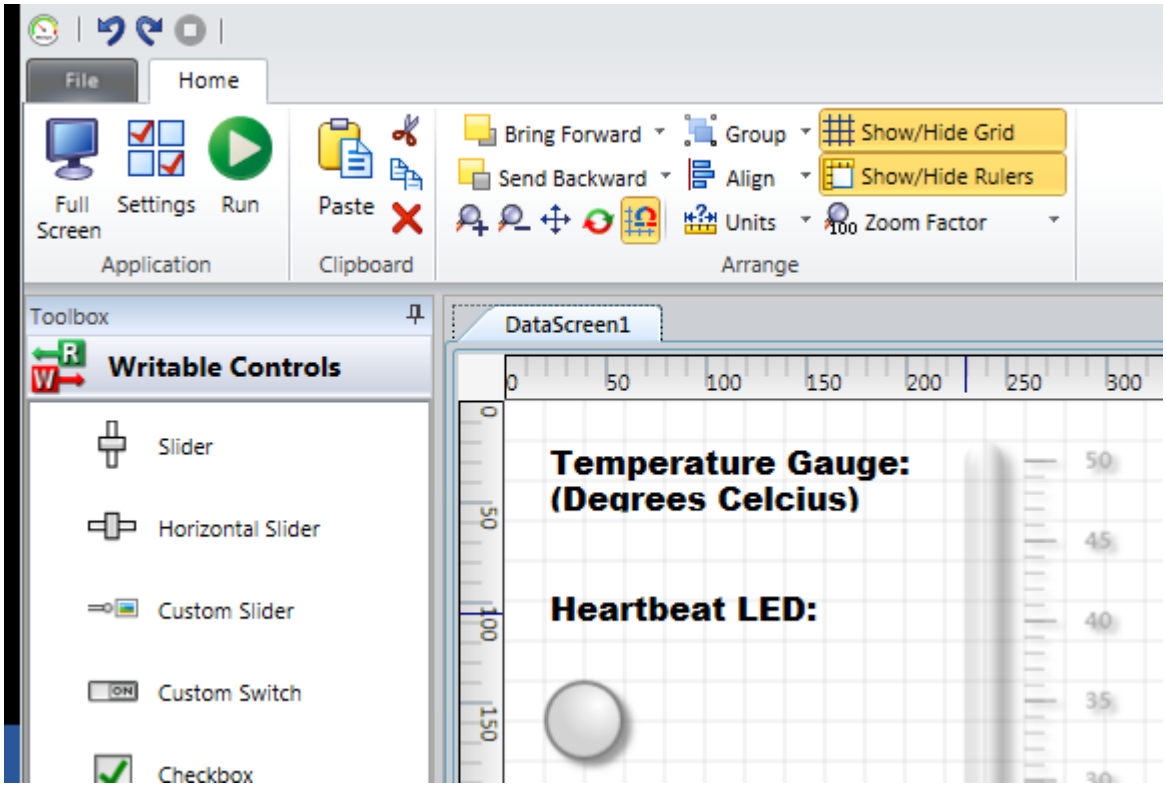
j. Verify that the Debug Interface is set to the "J-Link" option.
k. Verify that the Interface mode (either JTAG or SWD) matches the uEZ GUI project setting.
l. Verify that the micro-controller used on the uEZGUI is selected from the manufacturing list.

NOTE: The micro-controller name can be typed into the box for faster selection.

m. Click <OK> to close the dialog.
n. Next, verify that the uEZGUI is actively running the project maker project with the J-Link probe physically attached.

NOTE: The debugger from the IDE does NOT need to be running. However, it can run in parallel with µc/Probe, provided that you start the debugger first.

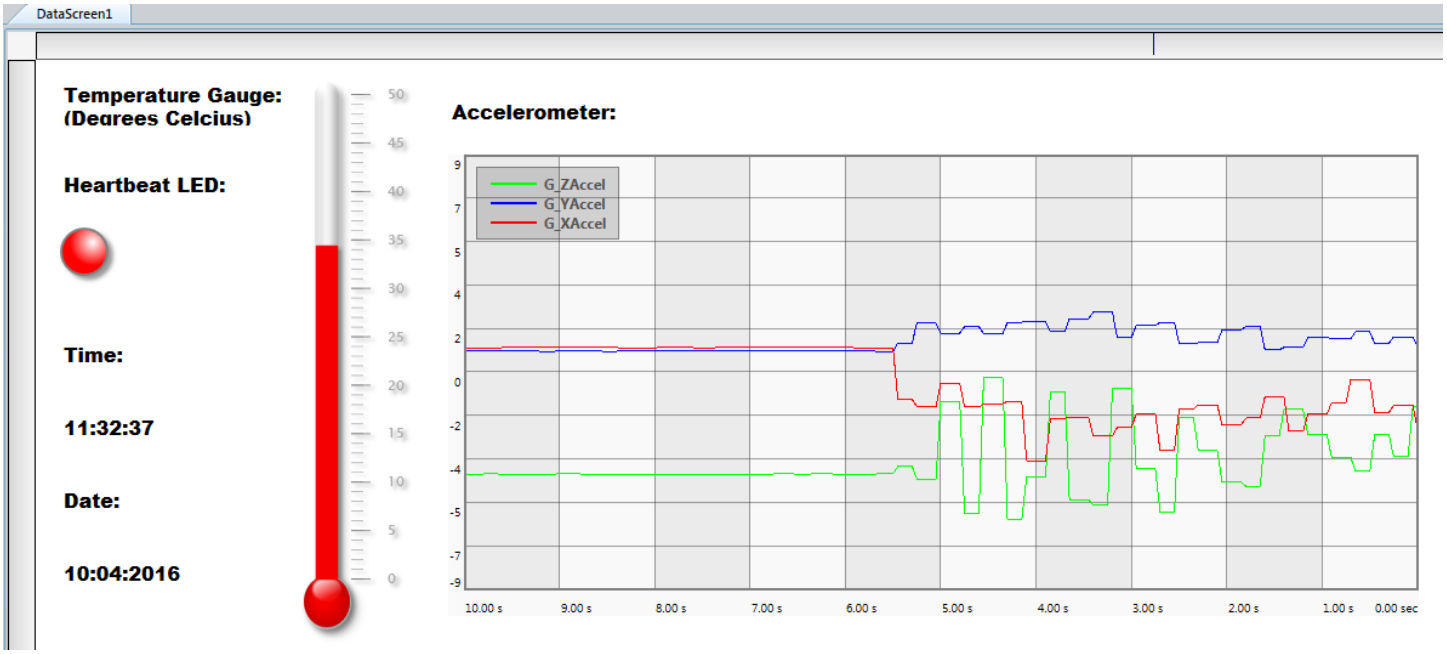
o. Finally, click the <Run> button in the top left corner of the IDE.



p. The µc/Probe should know show the datascreen window in a "maximized" view, and most of the GUI buttons will disappear. At this point, the datascreen window should show live updates from the uEZGUI.

NOTE: uEZ GUI variables will only update in µc/Probe when the variable is updated in Software. Make sure to enter into the "Sensor" and Time/Date" menus on the uEZGUI to trigger updates.

q. At this point, you can now interact with the uEZGUI, such as tilting it, or pressing your figure against the temperature sensor, to see real-time updates on the screen.
r. While the project is running, the DataScreen window will show the updated information as the variables are updated in real-time. Note that variables on the screen only update when the variables do. For example, the temperature and accelerometer data only updates when the sensor screen is active, and the time/date only updates when the time/date screen is active. However, the heartbeat task always updates, no matter which screen is active.



a. When done viewing the information, click the <Stop> button to return to the main interface.

NOTE: It is recommended to stop µc/Probe before restarting the debugger or loading new code onto the unit.

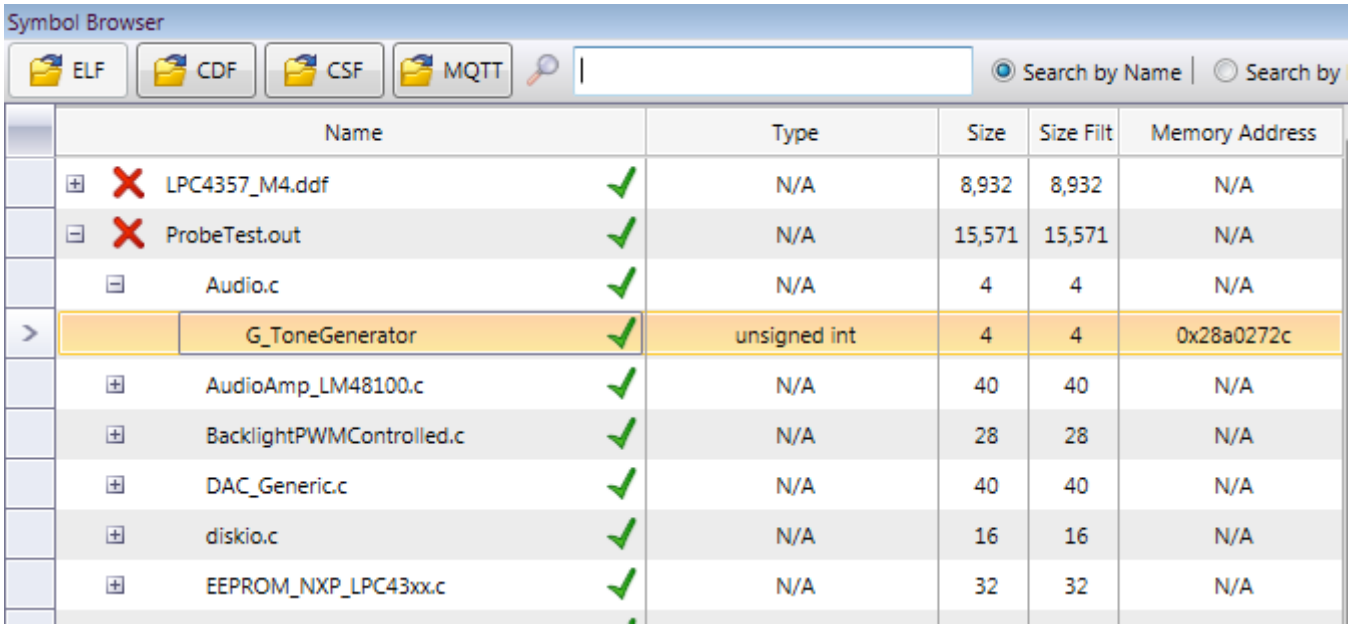
5. Adding new widgets to the µc/Probe Demo

To add new widgets to the data screen, follow these steps:

a. Make sure that the project is not currently running.
b. Use the "Toolbox" menu to drag and drop the desired dialog onto the data screen area.
c. Inside of the symbol browser, click the "+" sign next to the project output file, this will expand the tree listing.
d. Navigate to the desired corresponding ".c" file.
e. Click the "+" sign again to expand the available variables in that file.
f. Drag and drop the desired variable on top of the desired "writeable control". This will add the variable to the control, or set the control to that specific variable.
g. See the µc/Probe user's manual for more details.

NOTE: The micro-controller specific ".ddf" definition file can be used to directly read registers for GPIO, ADC, DAC, etc registers on the chip. This can save time and avoid the unnecessary creation of global variables in some cases.

NOTE: If a desired section of memory is not present in the project file or definition file, a customized memory file can be defined to allow for easy access of the variable.



Name	Type	Size	Size Filt	Memory Address
LPC4357_M4.ddf	N/A	8,932	8,932	N/A
ProbeTest.out	N/A	15,571	15,571	N/A
Audio.c	N/A	4	4	N/A
G_ToneGenerator	unsigned int	4	4	0x28a0272c
AudioAmp_LM48100.c	N/A	40	40	N/A
BacklightPWMControlled.c	N/A	28	28	N/A
DAC_Generic.c	N/A	40	40	N/A
diskio.c	N/A	16	16	N/A
EEPROM_NXP_LPC43xx.c	N/A	32	32	N/A