Getting started with IAR RISC-V GD32V Eval board

This guide briefly describes how to get started using IAR Embedded Workbench for RISC-V with the I-jet Lite debug interface, to run an example application on the IAR RISC-V GD32V Eval board.

IAR RISC-V GD32V Eval board

- GD32VF103R8T6 RISC-V GigaDevice
- User LEDs
- User SWs
- 3 Axis Accelerometer
- Potentiometer
- Temperature and Humidity Sensors
- Light Sensor
- Onboard Microphone
- iPhone compatible Earbud Jack
- SPI Flash Memory
- Reset button
- JTAG connector 20 pin 0.05"
- USB micro B connector for USB-Serial converter
- Power up through USB-micro B connector or through I-jet Lite (pin 11/13 JTAG connector)

I-jet Lite debug probe
- MCU support: RISC-V, Arm Cortex-M/A/R devices
- JTAG/SWD /SWO debugging support
- Flash download into supported evaluation boards
- Up to 5V target interface voltage
- MIPI-20 cable and USB-micro cable included
- Fully integrated with IAR Embedded Workbench
- RoHS/CE compliant (used with starter kit only)

1. Install IAR Embedded Workbench for RISC-V

Please refer to the installation instructions from the welcome e-mail for the RISC-V evaluation kit.

2. Set up the evaluation board

1. Connect your computer and the I-jet Lite debug probe using the USB-micro cable (packing with the I-jet Lite). Do not connect the I-jet Lite to the evaluation board yet.

2. The "USB" LED on the front side of the I-jet Lite will be lit with green when Windows completes searching for a USB driver.

3. Connect the I-jet Lite to the JTAG J11 connector.

4. Connect your computer and the USB-mini B connector using the USB-mini cable. Optionally the power supply can be provided from I-jet Lite. See the section "Target power supply from I-jet Lite" for more details.

3. Running example applications

When you have installed and set up all the software and hardware, you can try one of the example applications provided for IAR Embedded Workbench For trial projects you can access the IAR Systems GitHub repository via this link: iar-risc-v-gd32v-eval

1. Clone or download the repository for **IAR RISC-V GD32V Eval board**
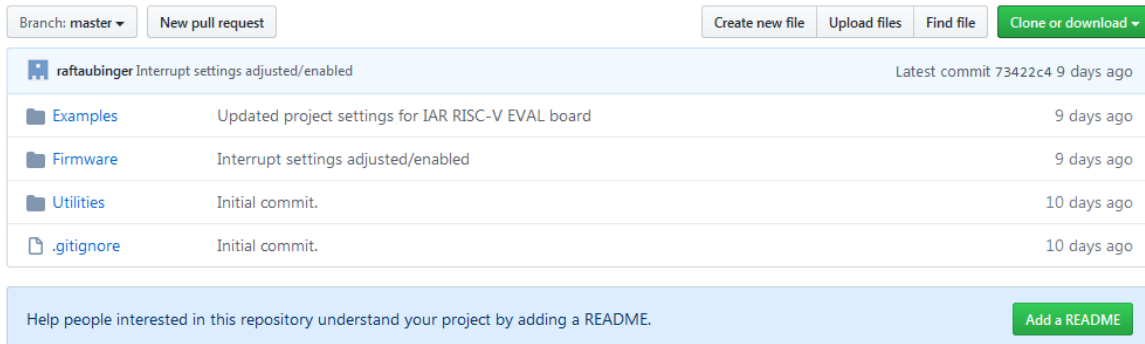
2. From the **Start** menu, start the IAR Embedded Workbench IDE by choosing **IAR Systems>IAR Embedded Workbench for RISC-V**

3. Open a project workspace through **File->Open Workspace** (with extention .eww) of your choice from the GitHub repository examples
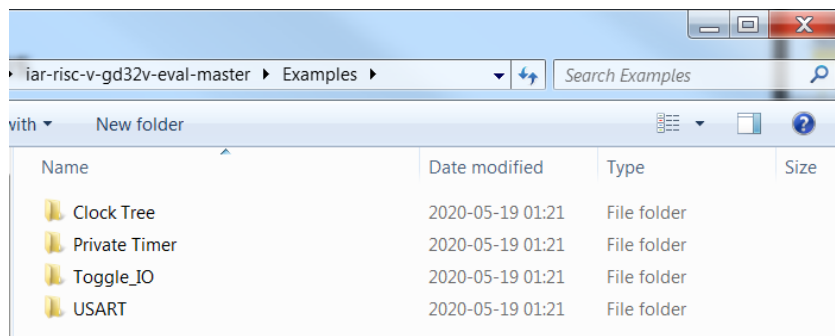

4. Choose **Project>Make** or click the **Make** button on the toolbar and the project will compile and link.

5. Choose **Project>Download and Debug** or click the **Download and Debug** button on the toolbar.

6. Use the default settings in the hardware setup dialog box that is displayed. Click **OK**. This will cause your application to be downloaded to the evaluation board.

7. The source file including the main function is now displayed in the editor window and the application is stopped at the entry point.

8. Click **Debug>Go** or click the **Go** button on the toolbar to start the application.

9. To stop C-SPY, choose Debug>Break or click the Break button on the debug bar.

10. To exit C-SPY, choose **Debug>Stop Debugging** or click the **Stop Debugging** button on the toolbar.

You can now try other example projects that are availalbe in the same repository or downloaded folder.

# 4. Viewing and editing project options

1. On the **Project** menu, select **Options**. Make sure the project name is highlighted in the workspace window and a dialog box will be displayed.
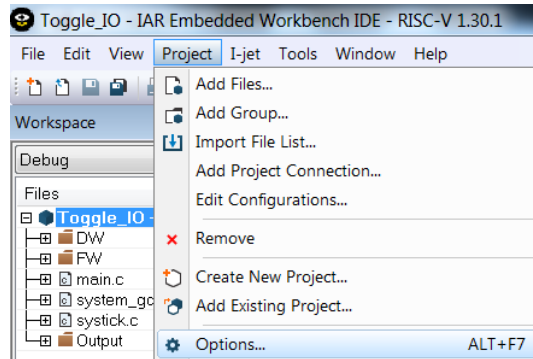
2. The **Options** dialog box provides options for the building tools and the debugger. For example, by selecting processor family and device under **General Options** in the category list to, the correct linker configuration file and device description file are automatically chosen for this device.
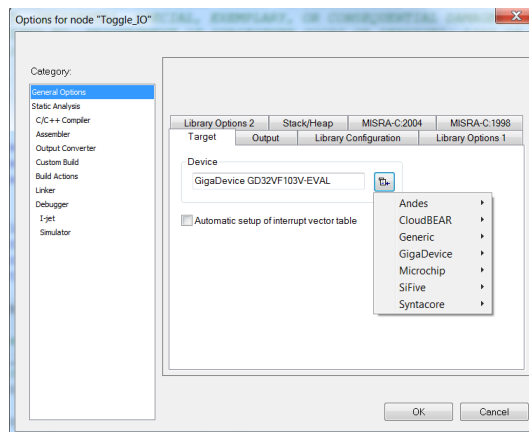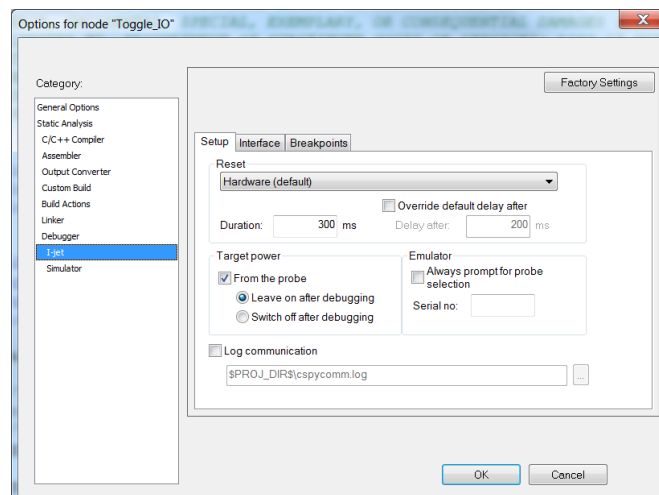

3. Select **Debugger** in the category list to verify what options are used.

4. The option **Run to** is used to specify the location to which C-SPY executes when the debugger is started and after a reset.
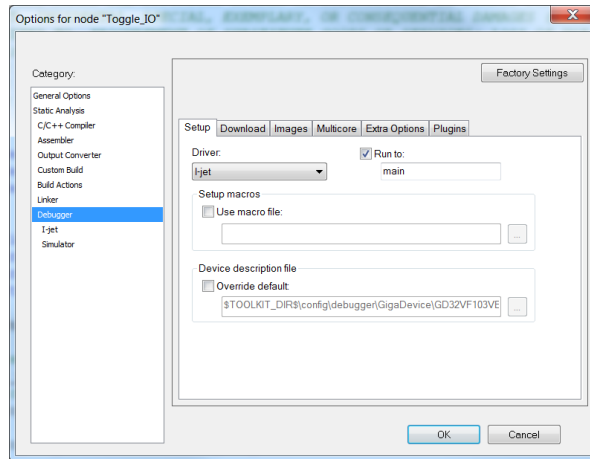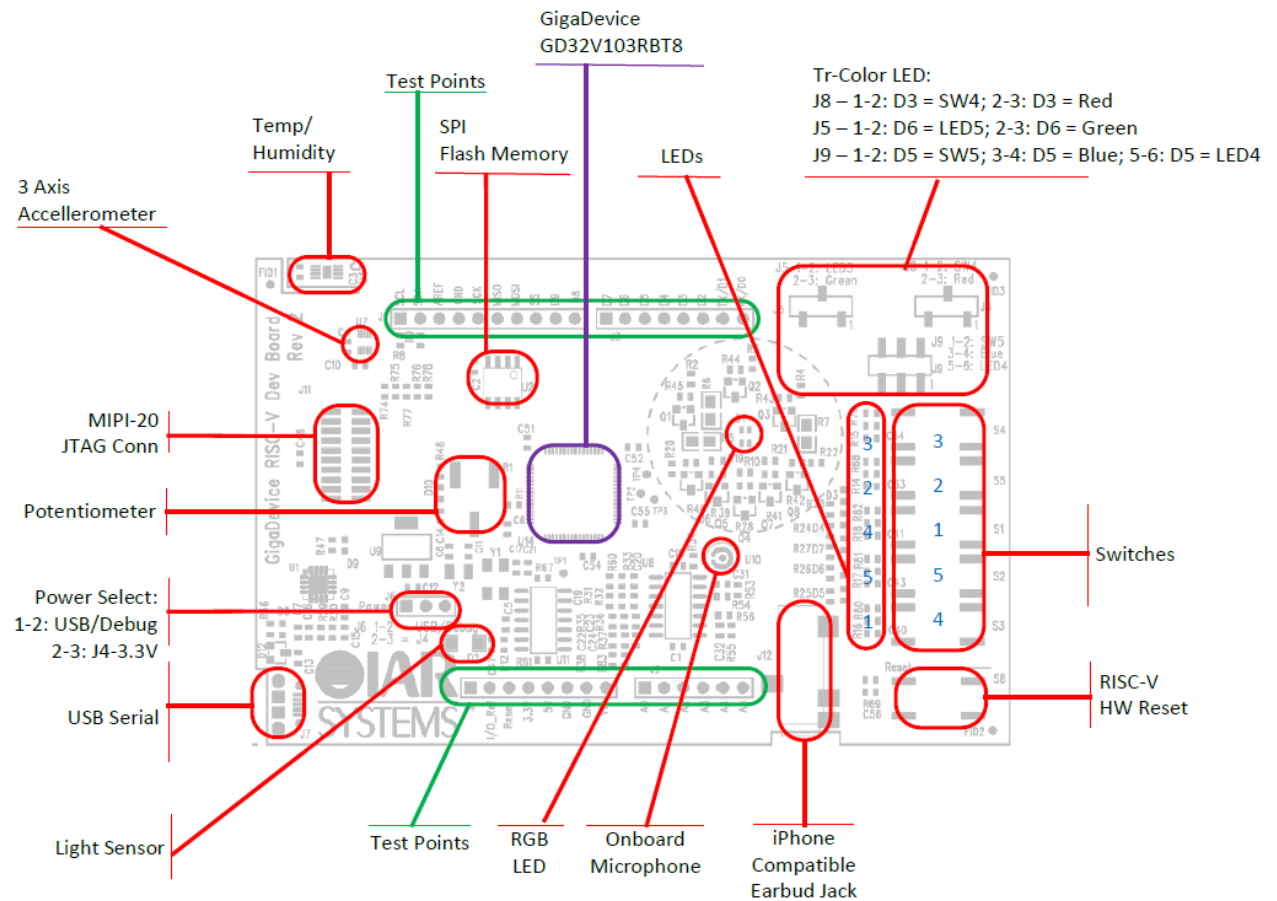
5. Click **OK** if you want to save your settings.

5. Target power supply from I-jet Lite

Choose **Project>Options>I-jet->Setup** to enable target power supply from I-jet Lite. Please notice the Power Select J6 settings in the board.

Board overview

GigaDevice
GD32V103RBT8

Test Points

Temp/
Humidity

SPI
Flash Memory

LEDs

Tr-Color LED:
J8 – 1-2: D3 = SW4; 2-3: D3 = Red
J5 – 1-2: D6 = LED5; 2-3: D6 = Green
J9 – 1-2: D5 = SW5; 3-4: D5 = Blue; 5-6: D5 = LED4

3 Axis
Accellerometer

MIPI-20
JTAG Conn

Potentiometer

Power Select:
1-2: USB/Debug
2-3: J4-3.3V

USB Serial

Light Sensor

Test Points

RGB
LED

Onboard
Microphone

iPhone
Compatible
Earbud Jack

Switches

RISC-V
HW Reset

Troubleshooting

If you are unable to find the cause of a problem, try resetting the evaluation board by using the reset button on the board. Then restart the C-SPY Debugger in the IAR Embedded Workbench IDE. You can also try disconnecting and reconnecting the power to the evaluation board, pressing the reset button and then restarting C-SPY.

Disclaimer

Information given in this document is intended as a help for the user. IAR Systems shall not be held liable for any losses or problems arising from using the information given in this document.