EVE2 Module Blank Template

An empty FTDI EVE2 Module template.

Application Note

Revision 1.0

Introduction

This application note provides users with an empty template that they can use to develop their own EVE2 module code. The template includes the read and write functions, as well as all the libraries that FTDI provides in their SampleApp note. In addition, the boot up configuration and touch screen calibration functions are also included. This template was made to help new users get their applications up and off the ground quickly.

Connections

As this is a template, it can be adapted for use with multiple microcontrollers, and communication bridges. Below is an example of how users can connect to their EVE2 modules. The setup shown below is just an example, and there are many setup variations that can take advantage of this template.

For this example, an EVE2 module is connected and powered through an EVE2 USB to SPI Bridge. The USB Bridge was directly connected to a computer using a mini USB type B cable.

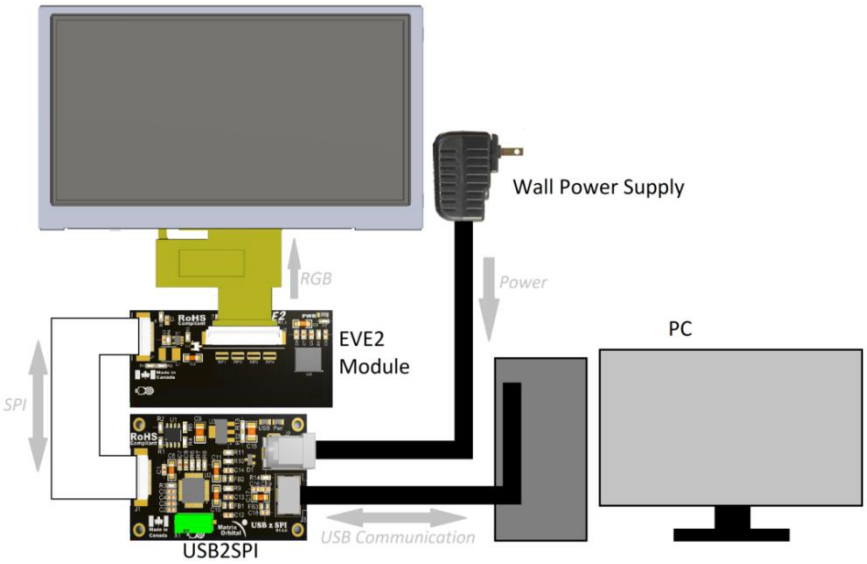

Figure 1: EVE2 Module Blank Template hardware connections.

Table 1: Parts used in the Blank Template Application note

Label	Description	Part Number
EVE2 Module	EVE2 board takes SPI data and sends RGB Information to the display	EVE2-43A-BLM-TPR Module
SPI	20 pin FFC Cable with 0.5mm pitch. Allows communication between a host controller and EVE2	Würth Elektronics 687620050002 or similar
USB2SPI	Convert USB protocol communication to SPI.	Matrix Orbital USB2SPI bridge
USB Communication.	Mini-USB cable to communicate and power smaller displays*	EXTMUSB3FT
Wall Power Supply	5V wall power supply	PWR-ACDC-5V2A

***Note:** Smaller displays can be powered using the USB Communication header. For larger displays such as the EVE2-50A and EVE2-70A, additional power must be supplied via the power jack.

Code

The code used in this example was taken from FTDI's EVE2 Sample Application, and modified to act as an EVE2 Module template. The code for this example was written in C and makes use of the libraries provided by FTDI, including their write and read functions. Modifications are contained in the SampleApp.c file and all other files remain untouched. FTDI's Sample Application code can be found on their website, www.ftdichip.com.

The code was developed in Microsoft Visual Studio, and can be compiled and run through the Visual Studio compiler. Microsoft Visual Studio can be downloaded for free at https://www.visualstudio.com/vs/community/

The template includes FTDI's write coprocessor and display list functions. These functions will write data to the EVE2 Module's coprocessor and display list respectively. A boot up configuration and touch screen calibration function are also included

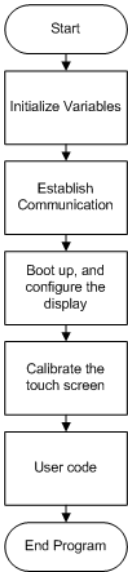

Figure 2: Blank Template Flow Chart

By default, the EVE2 module is configured for a 480 x 272 resolution display in horizontal configuration. If a different display resolution is being used, changes may need to be made to the configuration registers before the display can operate properly.

Users can place their code within the main function. If the template is left unmodified, it will boot up and prompt the user to calibrate their display touch screen. Once calibrated, the program will end.

Conclusion

This example demonstrates how one can load and display raw images on the EVE2 Module. In addition, user control was implemented, allowing for basic user inputs during operation.

The application note only scratches the surface of what the EVE2 can be programmed to do. By combining the basic primitive commands with more advanced commands, users will be able to unleash the full potential of the EVE2 module.

For more demos and tutorials on the EVE2 module and EVE2 USB-SPI Bridge, check out our forums at lcdforums.com

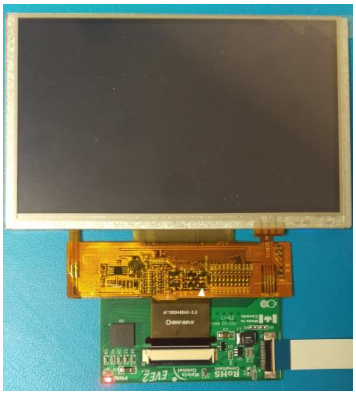

Figure 3: EVE2 Module

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