MAXVY
Technologies Pvt Ltd

Hifive1 Micro Controller

RISC-V DISPLAY CONSOLE

ABSTRACT

- Interfacing TFT-LCD touch Display with Risc-V Micro Controller
- ASIC dev Kit

  Sifive-Hifive1 Micro Controller

WHY HIFIVE1?

- Hifive1 has **SiFive Freedom E310** chip ,That has a Risc-V core.

WHAT IS RISC-V?

- RISC-V (pronounced "risk-five") is an open instruction set architecture (ISA) based on established reduced instruction set computing (RISC) principles.

- In contrast to most ISAs, the RISC-V ISA can be freely used for any purpose, permitting anyone to design, manufacture and sell RISC-V chips and software. While not the first open architecture ISA, it is significant because it is designed to be useful in a wide range of devices.

- The RISC-V ISA has been designed with small, fast, and low-power real-world implementations in mind, but without over-architecting for a particular micro architecture style

FEATURES OF HIFIVE1

1. **SiFive** E31 RISC-V Core.
2. **Architecture**: 32-bit RV32IMAC.
3. **Speed**: 320+ MHz.
4. **Performance**: 1.61 DMIPs/MHz, 2.73 Coremark/MHz.
5. **Memory**: 16 KB Instruction Cache, 16 KB Data Scratchpad.
6. **Other Features**: Hardware Multiply/Divide, Debug Module, Flexible ClockGeneration with on-chip oscillators and PLLs.

INTERFACING A TFT LCD DISPLAY WITH HIFIVE1

Requirements

+ Hifive1
+ Freedom-E-SDK
+ RISC-V Compiler
+ Adafruit 2.8” TFT-LCD Touch Display
+ OS-linux

Protocol

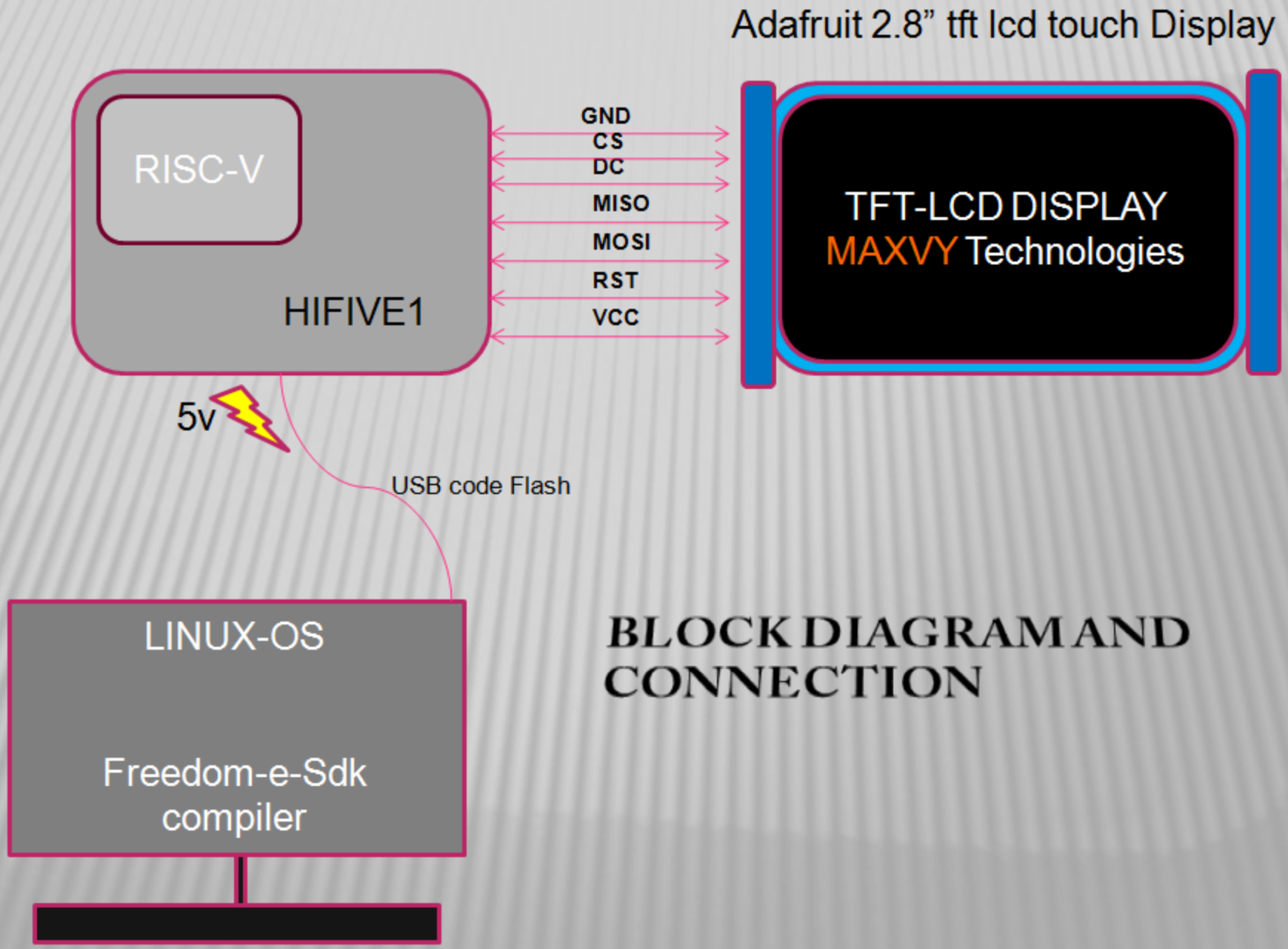
- SPI (Software)

Proposed Libraries

- MAXVY library written in C which includes GFX & ILI9341

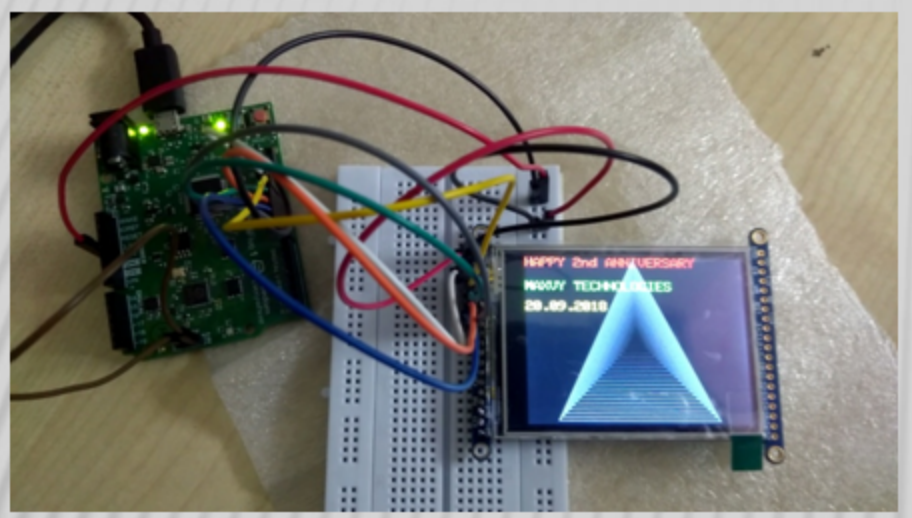
Existing Libraries

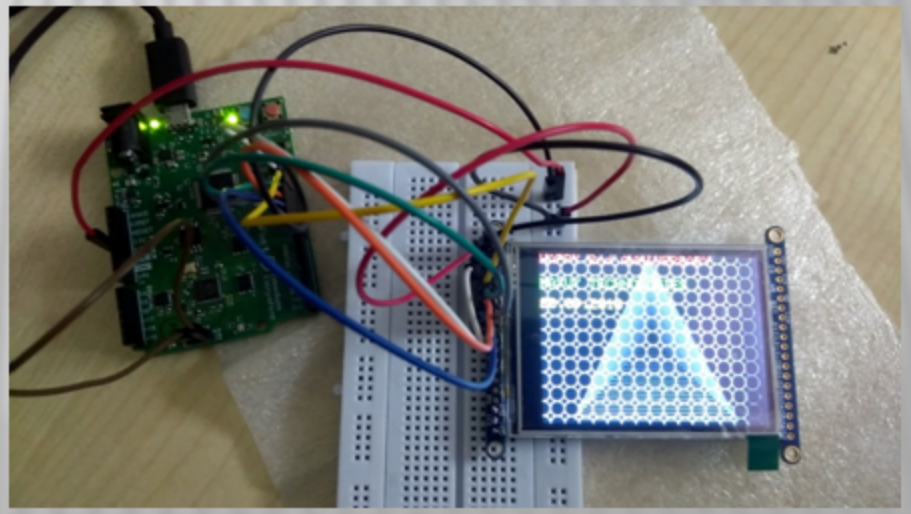
- Adafruit GFX
- Adafruit ILI9341
- Arduino SPI library (Supports with arduino compiler)
- SPI library for freedom sdk compiler



BLOCK DIAGRAM AND CONNECTION

OUTPUT SCREENSHOTS






Thank
You