

V1.1 S-8 Console Computer Design

Foreword

This document is designed for people who want to make their own S-8 emulator.

General Specs

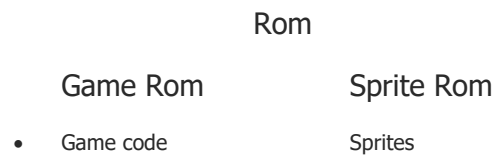
- 8 Bit computer
- Colors are represented by 1 hex digit which allows for 16 different colors
- 1028 RAM (reserved for ROM)
- One i register
- 16 usable 8 bit registers called S registers.
- 1 PC 16 Bit (Program counter)
- Screen 64x64
- DT 16 bit (counted ones per frame)
- 6 keys in total

Instructions would be 2 bytes like chip-8

Emulator specifics

- Frontend: SDL2
- Backend: custom library rust code

Rom layout



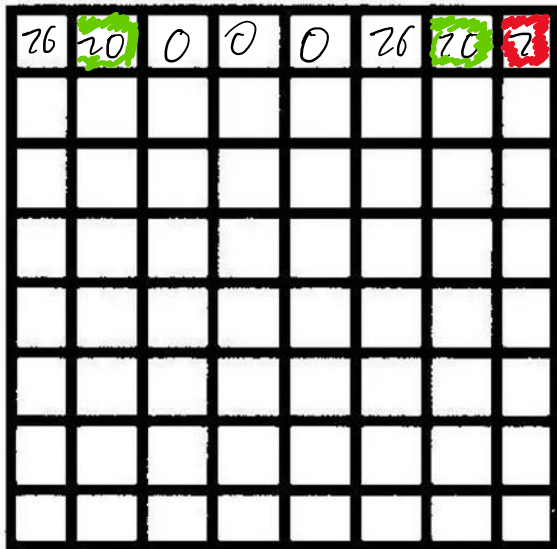
Memory Map

Name	Reserved space	Region in memory
Sprite Rom	512 bytes	512-1028 bytes
Game Rom	512 bytes	0-512 bytes

The s-8 console needs 2 rom files, a sprite rom file and a game rom files.

Sprite Structure

Sprites are a fixed size 8x8



FA000FA7

every Hex digit
corresponds to a color

8 x 8 GRID

Considering this every sprite would be 32 bytes per sprite

If the sprite rom has a size of 512 bytes we would have space for 16 sprites.

Color mapping

Hex digit

Rgb

0

0, 0, 0

3

Hex digit	Rgb
1	244, 67, 54
2	156, 39, 176
3	103, 58, 183
4	63, 81, 181
5	33, 150, 243
6	3, 169, 244
7	0, 188, 212
8	0, 150, 139
9	76, 175, 80
A	139, 195, 74
B	205, 220, 57
C	255, 235, 59
D	255, 193, 7
E	255, 87, 34
F	255, 255, 255