S1D13L03

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S1D13L03 WVGA Graphics Controller

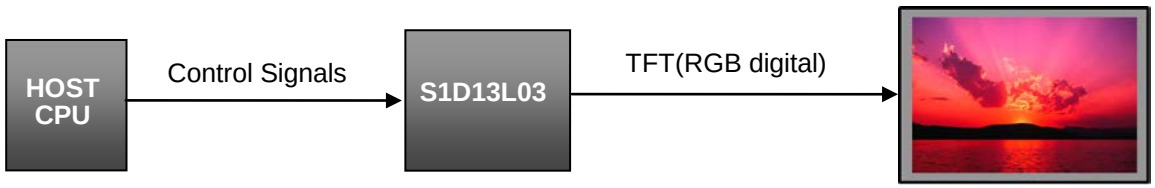
The S1D13L03 is a color LCD graphics controller with an embedded 768K byte display buffer. The S1D13L03 supports a 8/16-bit Intel 80 CPU architecture while providing high performance bandwidth into display memory allowing for fast screen updates. Resolutions supported include 800x480 single buffered and 352x416 double buffered.

The S1D13L03 uses a double-buffer architecture to prevent any visual tearing during streaming video screen updates.

■ FEATURES

- Embedded 768K byte SRAM Display Buffer
- Low Operating Voltage
- 8/16-bit Intel 80 interface (used for display or register data).
- RGB: 8:8:8, 6:6:6, 5:6:5 (8:8:8 will be truncated to 16 or 18 bpp).
- Active Matrix TFT interface - 18-bit interface.
- Supports resolutions up to 800x480.
- Hardware / Software Power Save mode.
- 16/18 bit-per-pixel (bpp) color depths.
- Double-Buffer available to prevent image tearing during streaming input
- Internal programmable PLL.
- Single MHz clock input: CLKI.
- General Purpose Input/Output pins.

■ SYSTEM BLOCK DIAGRAM



S1D13L03 Features

768kB SRAM
Gamma LUT
18-bit TFT interface

■ DESCRIPTION

Integrated Frame Buffer

- Embedded 768K byte SRAM display buffer.

CPU Interface

- 8/16-bit Intel 80 interface (used for display or register data).
- Chip select is used to select device. When inactive, any input data/command will be ignored.

Panel Support

- Active Matrix TFT interface.
- 18-bit interface.
- Supports resolutions up to 800x480.

Miscellaneous

- Internal programmable PLL.
- Single MHz clock input: CLKI.
- CLKI available as CLKOUT (separate CLKOUTEN pin associated with output).
- Hardware / Software Power Save mode.
- Input pin to Enable/Disable Power Save Mode.
- General Purpose Input/Output pins are available (GPIO[7:0]).
- COREVDD 1.5 volts and IOVDD 1.65 ~ 3.6 volts
- QFP21 176-pin package

Digital Video

- RGB: 8:8:8, 6:6:6, 5:6:5
  (8:8:8 will be truncated to 16 or 18 bpp).

Display Features

- 16/18 bit-per-pixel (bpp) color depths.
- 16 bpp to 18 bpp Input Data conversion.
- All display writes are handled by window apertures/position for complete or partial display updates. All window coordinates are referenced to top left corner of the displayed image.
- Double-Buffer available to prevent image tearing during streaming input. Resolutions supported must fit inside 384k bytes (1/2 of total available display buffer). Typical resolution of 352x416.

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