S1D13705

S1D13705 QVGA LCD Controller

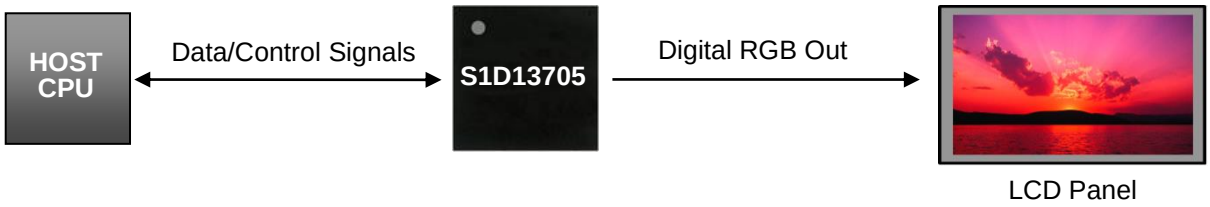
The S1D13705 is a LCD graphics controller with an embedded 80 KB SRAM display buffer. Targeting QVGA designs, the high integration of the S1D13705 provides a low cost, low power, single chip solution to meet the requirements of embedded markets such as office automation equipment, building equipment, and measuring devices where board size and battery life are major concerns.

Products requiring a rotated display can take advantage of the SwivelView 90° feature of the S1D13705. Virtual display, split screen, and double buffering are just some of the additional features supported. The S1D13705's impartiality to CPU type or operating system makes it an ideal display solution for a wide variety of applications.

FEATURES

- Embedded 80 KB SRAM display buffer
- Direct support for most popular Host Interfaces:
  - Flexible host interface options
  - Direct Addessing
  - 16-bit data bus
- Resolutions up to:
  - 640x480 at a color depth of 2 bpp
  - 640x240 at a color depth of 4 bpp
  - 320x240 at a color depth of 8 bpp
- TFT LCD panels
- Passive LCD panels
- SwivelView™ 90° Hardware Rotation
- Split screen display
- Virtual display support
- Double buffering
- LCD power-down sequencing
- QFP14-80pin package

SYSTEM BLOCK DIAGRAM



S1D13705 Features

- 80 KB SRAM
- SwivelView 90° Rotation
- Virtual Display
- Double Buffering

S1D13705

DESCRIPTION

Display Buffer

- Embedded 80 KB SRAM display buffer

CPU Interface

- Direct support for most popular Host Interfaces:
  - Flexible host interface options
  - Direct addressing
  - 16-bit data bus
- CPU write buffer

Power Down Modes

- Software suspend mode
- LCD power-down sequencing

Clock Source

- Single clock input for both pixel and memory clocks
- Clock source can be internally divided down for a higher frequency clock input
- Dynamic switching of memory clocks in portrait mode

Operating Voltage

- COREVDD 2.7 to 3.6; IOVDD 2.7 to 5.5 volts

Package

- QFP14-80pin

Display Support

- TFT interface panels
- Single-panel, single-drive passive displays
- Dual-panel, dual-drive passive displays
- 4/8-bit monochrome LCD interface
- 4/8-bit color LCD interface
- Example resolutions:
  - 640x480 at a color depth of 2 bpp
  - 640x240 at a color depth of 4 bpp
  - 320x240 at a color depth of 8 bpp

Display Modes

- 1/2/4/8 bit-per-pixel (bpp) support on LCD
- Up to 16 shades of gray using FRM on monochrome passive LCD panels
- Up to 256 simultaneous colors from a possible 4096 colors on passive STN and active matrix TFT LCD panels
- Split screen display: allows two different images to be simultaneously viewed on the same display
- Virtual display support: displays images larger than the display size through the use of panning
- Double buffering/multi-pages: provides smooth animation and instantaneous screen update
- Hardware portrait mode: direct hardware 90° rotation of display image for portrait mode display

For more information on the S1D13705 and other Epson Display Controllers, visit the Epson Global website.

https://global.epson.com/products_and_drivers/semicon/products/display_controllers/

For Sales and Technical Support, contact the Epson representative for your region.

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