

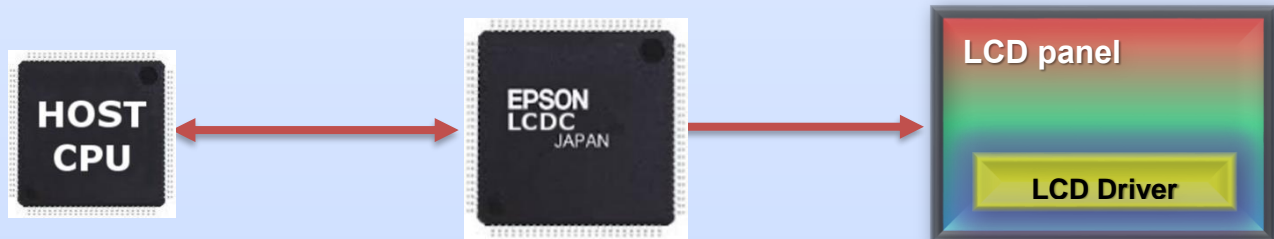
Epson Display Controllers at a glance

What is a display controller (LCDC) ?

Display Controller (hereafter, LCDC) receives image data to be displayed on the LCD panel from a host CPU and outputs the data and required synchronous signal suitable for the LCD panel.

From host CPU side, LCDC looks like a SRAM which holds display image data. All display related operations are done by LCDC according to the image data and the required LCDC register settings programmed via host CPU.

The LCDC driver populated on LCD panel receives data and timing signal then drives each pixel with required voltage.

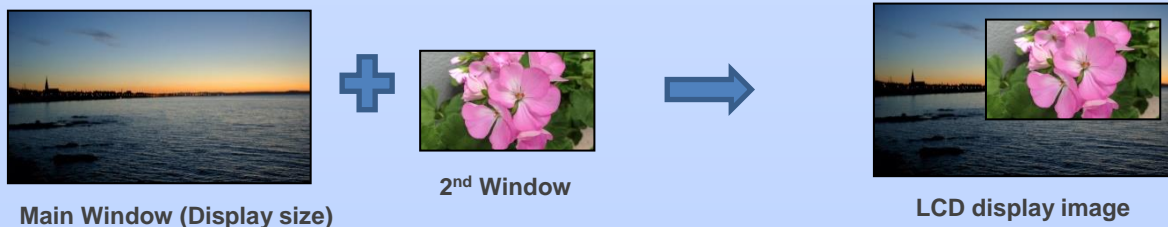


Main features of LCDC

Epson LCDCs support a wide variety of LCD panels with small resolutions under QVGA(320x240) and also panels ranging in resolution from QVGA(320x240) up to XGA(1024x768). Epson LCDCs support the following features.

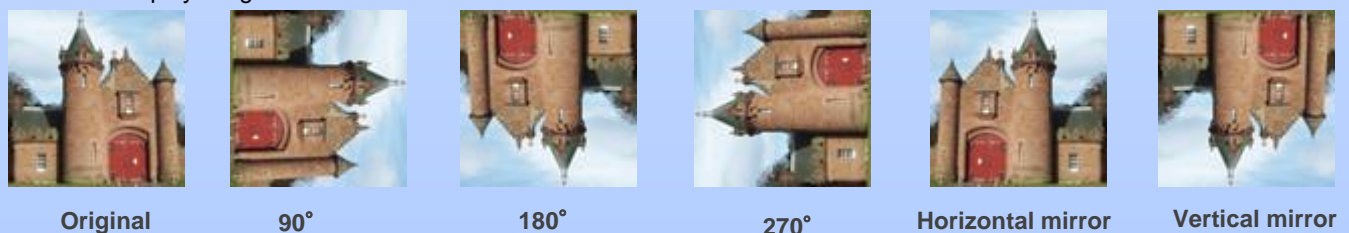
(1) Multi-window

Overlays additional window onto the main window.



(2) Window Rotation

Rotates the display image.



(3) Alpha blending

Blends two images by using a specified alpha value.



(4) Transparency

Specified key color of 2nd window will be transparent and overlaid on the main image.

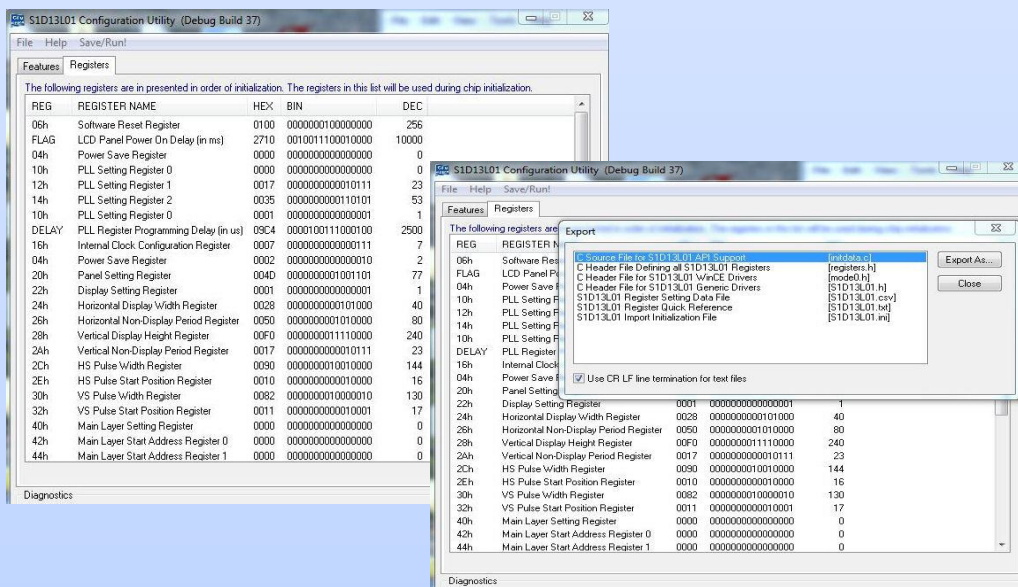


LCDC development tools

Epson provides a LCDC configuration tool and evaluation board to make LCDC evaluation and development simpler.

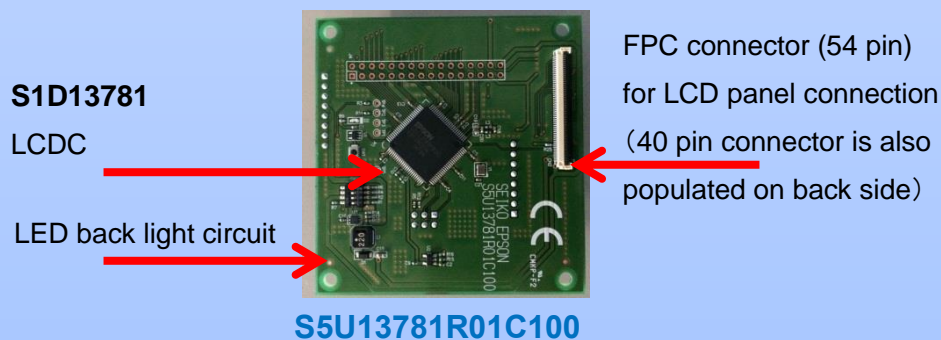
(1) LCDC set up tool

Configuration tool generates LCDC register settings for a LCD panel.



(2) LCDC evaluation board

Board populated with LCDC. Evaluation of the LCDC can be done by connecting a host CPU and LCD panel.



LCDC product line up

°Epson's product line up includes a variety of products that support a broad range of resolutions, memory types (embedded SRAM and external SDRAM), features.

[S1D13513]	TFT	MSTN	CSTN	Sprite, BitBLT, Alpha blending, Picture in Picture	16M colors (XGA)
[S1D13U11]	TFT			USB-HS interface, 3 windows display	16M colors (SVGA)
[S1D13517]	TFT			3 windows display	16M colors (SVGA)
[S1D13742]	TFT			Double buffer, Rotation, Gamma-LUT	64k colors (WVGA)
[S1D13748]	TFT			3 windows display, Alpha blending, Scaler	64k colors (WVGA)
[S1D13781]	TFT	MSTN	CSTN	Alpha Blending, Picture in Picture	16M colors (WQVGA) 256 colors (VGA)
[S1D13L04]	TFT			Simple LCDC for XGA panel	Simple LCDC 256k colors (XGA)
[S1D13L03]	TFT			Simple LCDC for WVGA panel	Simple LCDC 64k colors (WVGA)
[S1D13L02]	TFT			Simple LCDC for VGA panel	Simple LCDC 64k colors (WVGA)
[S1D13L01]	TFT			Simple LCDC for WQVGA panel	Simple LCDC 16M colors (WQVGA) 256 colors (WVGA)
[S1D13709]	TFT	MSTN		CG ROM embedded, applicable up to WVGA by scaling function (TFT)	16 gray scale, 16 colors (QVGA)

Resolution QVGA VGA WVGA SVGA XGA

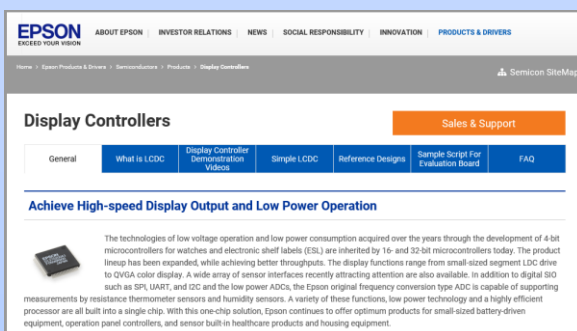
Ext. SDRAM LCDC
Embd. SRAM LCDC

LCDC technical information web site

Technical information is published on the following web sites.

(1) Summary

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



(2) Technical information site

vdc.epson.com/display-controllers/lcd-controllers

