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DS51948B

Graphics Controller PICtail™ Plus Epson S1D13517 Board Information Sheet

Features

- Graphics display controller (U1), Epson S1D13517, supporting 18/24-bit TFT interfaces, 16/24-bit color depth, maximum display resolution of 960x960, multiple frame buffering with external SDRAM, alpha-blending, picture-in-picture, transparency
- 128-Megabit (8Mx16) SDRAM (U4) for frame buffering
- 64-Megabit serial Flash memory (U3) for additional data storage
- Display connector (J2) for interfacing with different display boards
- PICtail™ Plus Interface (J1) for connecting to Explorer 16 Development Board
- Starter Kit Connector (J3) to connect any of the Starter Kits

Getting Started

An Explorer 16 Development Board (DM240001) or one of the starter kits is required, but only one should be used. An external 9V (AC162039) power supply can be connected through the Explorer 16 or directly to connector J5. When a starter kit is used, the setup can be powered via the USB debugger. If your USB is unable to supply enough power, the external power supply should be used. Finally, a display board, such as the Graphics Display Truly 7" 800x480 Board (AC164127-9), should be connected to the display connector. For more information on this board and a list of available graphics display boards, check the **Graphics** link on the Development Tools webpage at: www.microchip.com.

This board can be used in conjunction with the Microchip Graphics Library. The Microchip Graphics Library and other firmware examples can be downloaded from http://www.microchip.com/graphics. Please refer to the **"Getting Started"** topic in the Microchip Graphics Library Help file in the Microchip Application Library (MAL) to program and run demonstration projects in MAL.

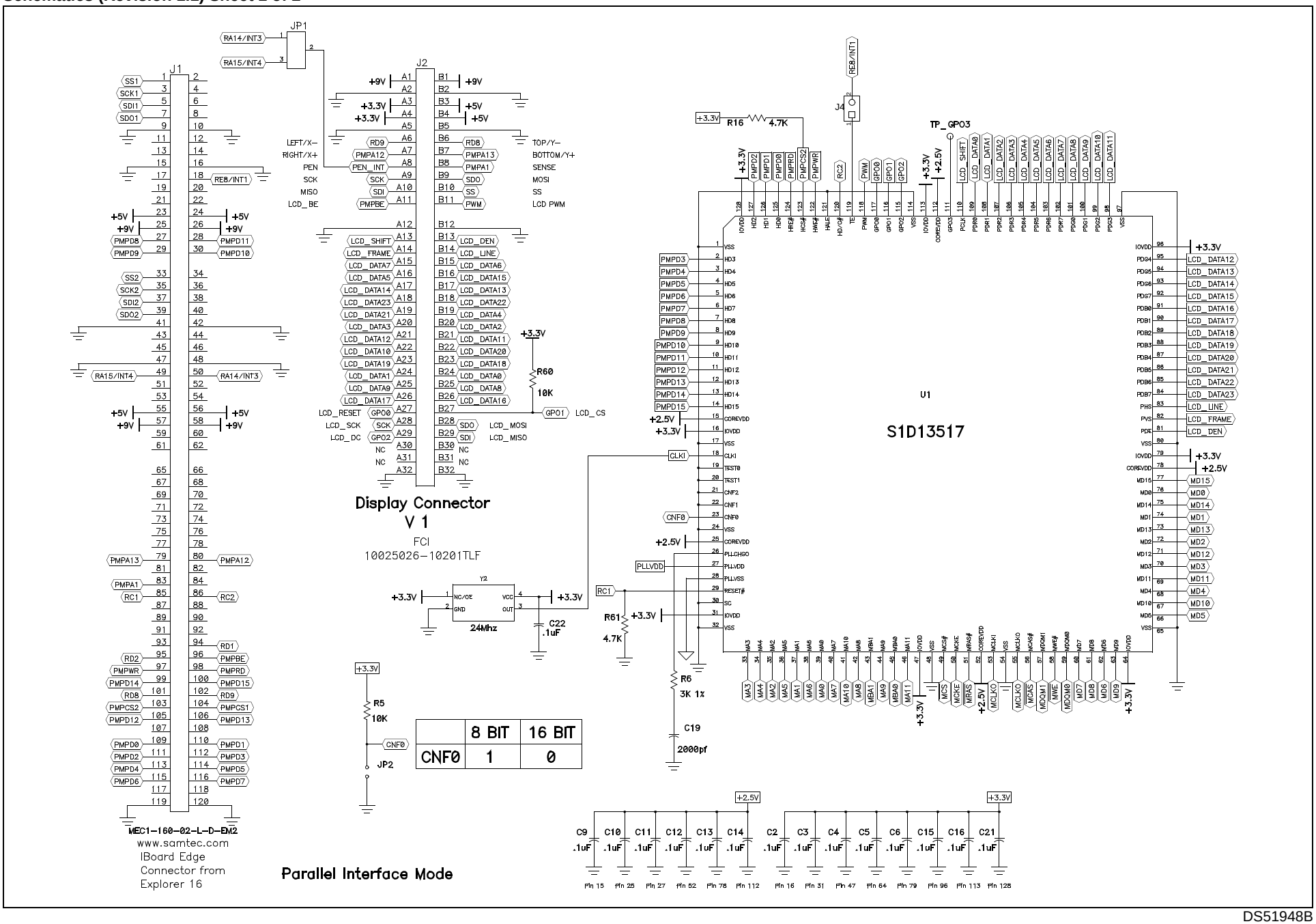
Board Settings

- Jumper, JP1, connects an interrupt signal, PEN_INT, from the Display Connector to either signal, RA14 or RA15 (open by default)
- Jumper, JP2, selects the data bus width for the S1D13517 graphics display controller. When a jumper is plugged in, the data bus is 16-bit and when unplugged, it is 8-bit (16-bit by default).
- Jumpers JP3, JP4, JP5, and JP6 select the SPI channel between SPI1 and SPI2 for communication with Flash memory (U3) (SPI2 by default).

TABLE 1: SIGNAL INTERFACE FOR DISPLAY CONNECTOR

Pin #	Symbol	Level	Description
A1, B1	+9V	+9.0V	Power supply
A2, B2	GND	GND	Ground
A3, A4	+3.3V	+3.3V	Power supply
B3, B4	+5V	+5.0V	Power supply
A5, B5	GND	GND	Ground
A6	LEFT/X-	I/O	Touch panel left
B6	TOP/Y-	I/O	Touch panel top
A7	RIGHT/X+	I/O	Touch panel right
B7	BOTTOM/Y+	I/O	Touch panel bottom
A8	PEN_INT	I	Pen interrupt (touch panel driver)
B8	SENSE	I	5-wire touch panel sense
A9	SCK	O	PIC® MCU SCK
B9	SDO	O	PIC® MCU SDO
A10	SDI	I	PIC® MCU SDI
B10	SS	O	PIC® MCU SS
A11	BKLHT_EN	O	Enable for backlight driver
B11	BKLHT_PWM	O	PWM output for backlight driver
A12, B12	GND	GND	Ground
A13	SHIFT	O	Pixel shift signal
B13	DEN	O	Data enable for 24-bit digital RGB interface
A14	FRAME	O	Frame pulse
B14	LINE	O	Line pulse
A15-A26, B15-B26	LDATA0-LDATA23	O	24-bit data
A27	GPO0	O	Can be configured as display reset or as a GP output
B27	GPO1	O	Can be used for SPI CS or as a GP output
A28	SCK	O	PIC® MCU SPI SCK
B28	SDO	O	PIC® MCU SPI SDO
A29	GPO2	O	Can be used for display DC or as a GP output
B29	SDI	I	PIC® MCU SPI SDI
A30-A31, B29-B31	NC	—	Not connected
A32, B32	GND	GND	Ground

Schematics (Revision 1.1) Sheet 1 of 2



Schematics (Revision 1.1) Sheet 2 of 2