

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

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 China - Chengdu - 86-28-8665-5511
 China - Chongqing - 86-23-8980-9588
 China - Hong Kong SAR - 852-2401-1200
 China - Nanjing - 86-25-8473-2460
 China - Qingdao - 86-532-8502-7355
 China - Shanghai - 86-21-5407-5533
 China - Shenyang - 86-24-2334-2829
 China - Shenzhen - 86-755-8203-2660
 China - Wuhan - 86-27-5980-5300
 China - Xiamen - 86-592-2388138
 China - Xian - 86-29-8833-7252
 China - Zhuhai - 86-756-3210040
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 India - New Delhi - 91-11-4160-8631
 India - Pune - 91-20-2566-1512
 Japan - Yokohama - 81-45-471-6166
 Korea - Daegu - 82-53-744-4301
 Korea - Seoul - 82-2-554-7200
 Malaysia - Kuala Lumpur - 60-3-6201-9857
 Malaysia - Penang - 60-4-227-8870
 Philippines - Manila - 63-2-634-9065
 Singapore - 65-6334-8870
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 Taiwan - Kaohsiung - 886-7-213-7830
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Europe

Austria - Weis - 43-7242-2244-39
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 Netherlands - Drunen - 31-416-690399
 Spain - Madrid - 34-91-708-08-90
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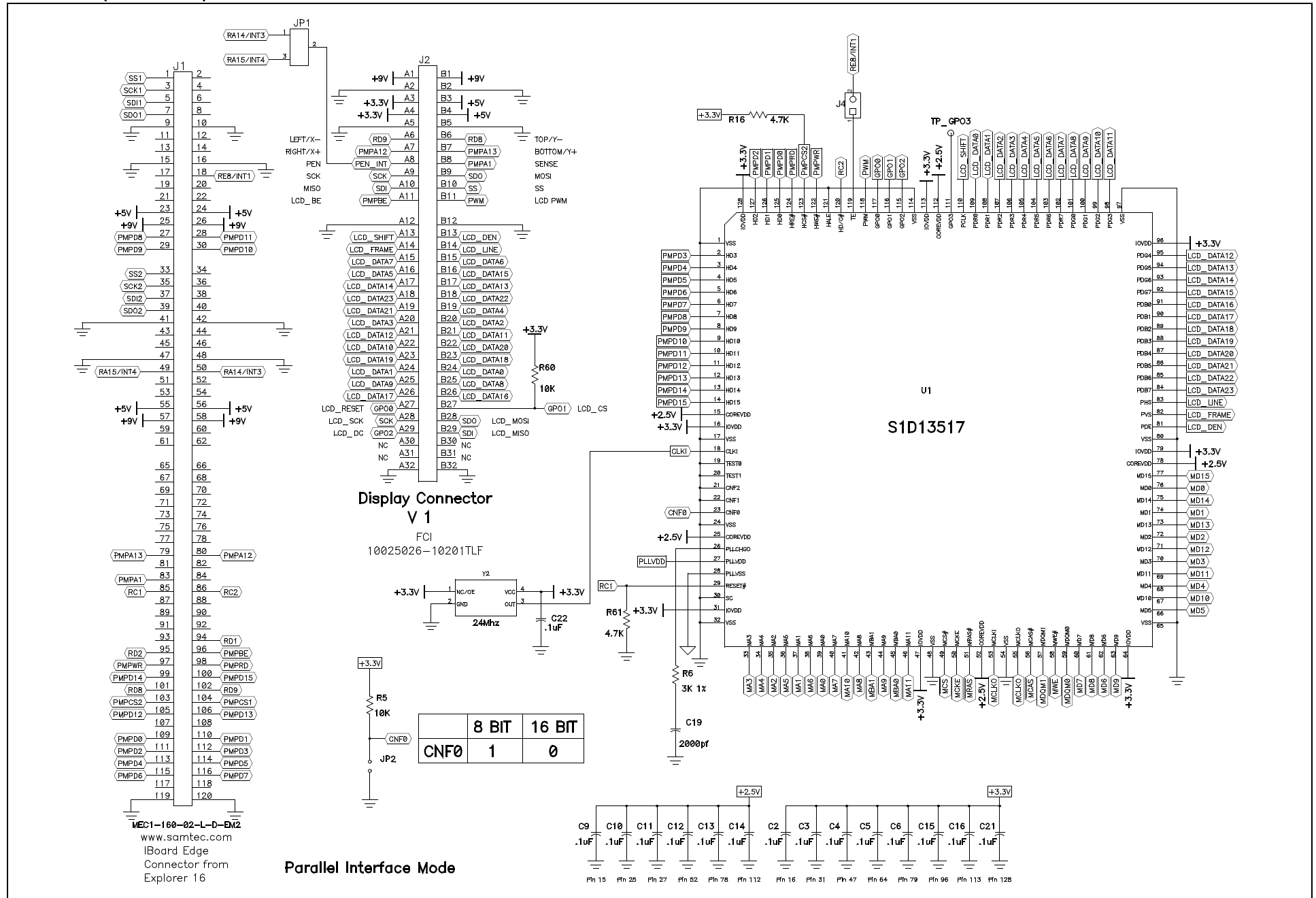
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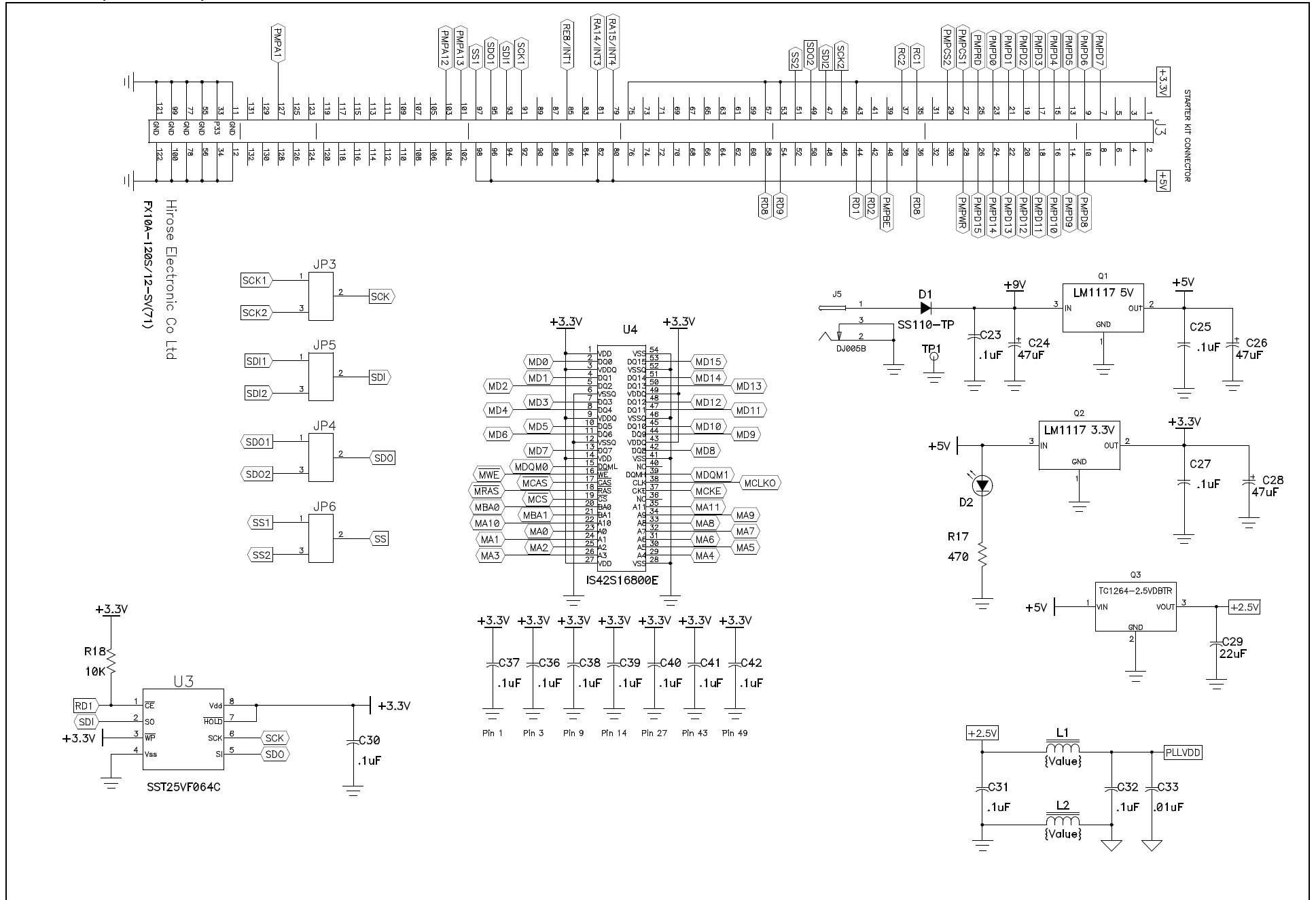
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Schematics (Revision 1.1) Sheet 1 of 2



Graphics Controller PICtail™ Plus Epson S1D13517 Board Information Sheet

Schematics (Revision 1.1) Sheet 2 of 2



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