

STEVAL-CCM002V1

TFT-LCD panel demonstration board based on the STM32 as LCD controller

Data brief

Features

- Displays images on a TFT-LCD using the STM32 as LCD controller
- Includes a slideshow of images to demonstrate static display model
- STM32 FSMC (flexible static memory interface) drives TFT using external SRAM as refresh RAM
- On-board constant current drive circuit for LED-based TFT-LCD backlighting
- Dimming control for the TFT-LCD backlighting
- Jumper headers offer easy analysis of TFT-LCD interface to the microcontroller
- RoHS compliant

Description

The STEVAL-CCM002V1 demonstration board is an STM32-based LCD controller for TFT-LCD displays. The board provides a platform for testing the capabilities of the STM32F103VET6 FSMC peripheral to drive a TFT-LCD panel without an LCD controller.

A 3.5" QVGA resolution TFT-LCD panel is interfaced with the STM32 FSMC peripheral. The board is designed to be connected as a daughterboard to the STM3210E-EVAL demonstration kit.



STEVAL-CCM002V1

Schematic diagrams STEVAL-CCM002V1

Schematic diagrams 1

LED section Figure 1.

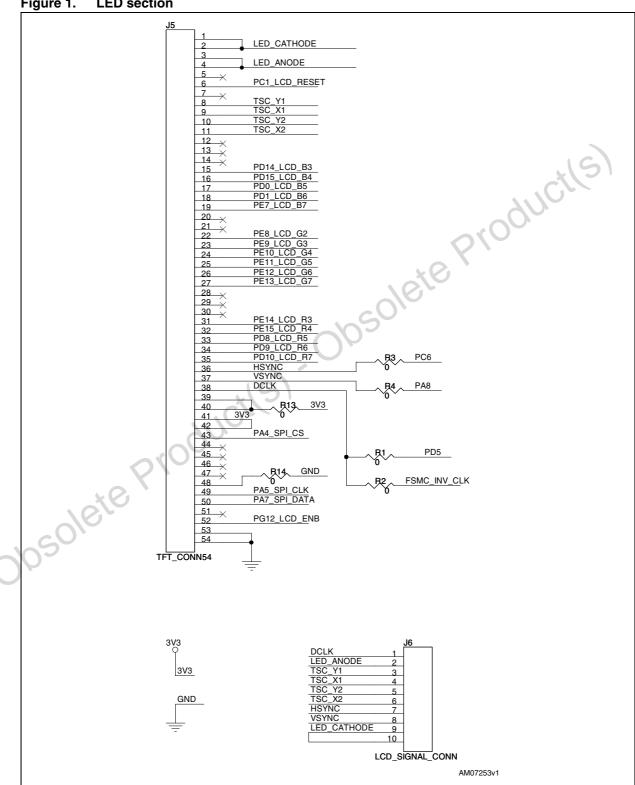


Figure 2. Demonstration board connectors

gure 2. Demonstr			
	CNC		10
GND 1	CN6 2 PG8	GND 1	J2 2 PG8
PG7 3	4 PG6	PG7 3	4 PG6
PG5 5 PG3 7	6 PG4 8 PG2	PG5 5 PG3 7	6 PG4 8 PG2
PG3 7 PC13 9	8 PG2 10 GND	PG3 7 PC13 9	8 PG2 10 GND
RESET# 11	12 PD13	RESET# 11	12 PD13
PD12 13 PD10_LCD_R7 15	14 PD11 16 PD9 LCD R6	PD12 13	14 PD11 16 PD9 LCD R6
PD10_LCD_R7	16 PD9_LCD_R6 18 PB15	PD10_LCD_R7 15 PD8_LCD_R5 17	16 PD9_LCD_R6 18 PB15
D5V 19	20 PB14	D5V 19	20 PB14
PB13 21	22 PB12	PB13 21	22 PB12
PB11_TSC_SDA2 23 PE15_LCD_R4 25	24 PB10_TSC_SCL2 26 PE14_LCD_R3	PB11_TSC_SDA2 23 PE15_LCD_R4 25	24 PB10_TSC_SCL2 26 PE14_LCD_R3
PE13 LCD G7 27	28 PE12_LCD_G6	PE13 LCD G7 27	28 PE12_LCD_G6
PE11_LCD_G5 29 PD15 LCD B4 31	30 GND	PE11_LCD_G5 29 PD15_LCD_B4 31	30 GND 32 PD14_LCD_B3
PD15_LCD_B4 31 PE9_LCD_G3 33	32 PD14_LCD_B3 34 PE10_LCD_G4	PD15_LCD_B4 31 PE9_LCD_G3 33	32 PD14_LCD_B3 34 PE10_LCD_G4
PE7_LCD_B7 35	36 PE8_LCD_G2	PE7_LCD_B7 35	36 PE8_LCD_G2
PG1 37 GND 39	38 40 PG0	PG1 37 GND 39	38 40 PG0
PF14 41	40 PG0 42 PF15	FF14 41	40 PG0 42 PF15
PF12 43	44 PF13	PF12 43	44 PF13
PB2 45	46 PF11	PB2 45	46 PF11
PB1 47 49	48 50 GND	PB1 47 49	48 50 GND
PB0 ^ 51	52 PC5	PB0 ^ 51	52 PC5
PC4 53 PA6 55	54 PA7_SPI_DATA 56 PA5_SPI_CLK	PC4 53 PA6 55	54 PA7_SPI_DATA 56 PA5_SPI_CLK
PA4_SPI_CS 57	56 PA5_SPI_CLK 58 PA3	PA6 55 PA4_SPI_CS 57	56 PA5_SPI_CLK 58 PA3
GND 59	60 PA2	GND 59	60 PA2
PA1 61 PC3_TSC_INT 63	62 64 PC2	PA1 61 PC3_TSC_INT 63	62 64 PC2
PC3_TSC_INT 63 PC1_LCD_RESET 65	64 PC2 66 PC0	PC3_TSC_INT 63 PC1_LCD_RESET 65	64 PC2 66 PC0
PF10 67	68	PF10 67	68
3V3 69	70 GND	3V3O 3V3 69	70 GND
_	CON70A		CON70A
		100	
		\bigcirc	
J3			J4
GND 1 PC7 3	2 PC6 4 PC8	GND 1 PC7 3	2 PC6 4 PC8
PC9 5	6 PA8	PC9 5	6 PA8
PA9 7	8 PA10	PA9 7	8 PA10
	10 GND	PA0 9	
., 11		44	I 12 PALI
PA12 × 11	12 PA11 14 PA13	PA12 × 11 13	12 PA11 14 PA13
PA12 13 PA14 15	12 PA11 14 PA13 16 PA15	PA12 × 11 PA14 15	14 PA13 16 PA15
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PA12 13 PA14 15 PC10 17 GND 19 PD0_LCD_B5 21	12 PA11 14 PA13 16 PA15 18 PC11 20 PC12 22 PD1_LCD_B6	PA12 × 11 PA14 15 PC10 17 GND 19 PD0_LCD_B5 21	14 PA13 16 PA15 18 PC11 20 PC12 22 PD1_LCD_B6
PA12 13 PA14 15 PC10 17 GND 19 PD0_LCD_B5 21 PE2 23	12 PA11 14 PA13 16 PA15 18 PC11 20 PC12 22 PD1_LCD_B6 24 PE1	PA12 13 PA14 15 PC10 17 GND 19 PD0_LCD_B5 21 PE2 23	14 PA13 16 PA15 18 PC11 20 PC12 22 PD1_LCD_B6 24 PE1
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Schematic diagrams STEVAL-CCM002V1

VCC Single channel inverter FSMC_INV_CLK 74V1G14CTR_SOT323-5L Josolete Product(s) 3V3 <u>L1</u> 4.7uH 3 GND FB LCD backlight driver STLD40DPUR_QFN8 C1 2.2uF R5 R6 8 ohm GND C4 =2pF C5 =2pF C6 =2pF Ξ TSC_X2 3V3 VIO DATA_IN TSC_Y2 Touchscreen controller STMPE811QTR C7 100nF TSC_X1 PB11_TSC_SDA2 16 A0 PB10_TSC_SCL2 PC3_TSC_INT PB11_TSC_SDA2 PB10_TSC_SCL2 AM07255v1

Figure 3. Single channel inverter, LCD backlight driver and touchscreen controller

STEVAL-CCM002V1 Revision history

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
16-Jun-2010	1	Initial release.



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