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

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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.

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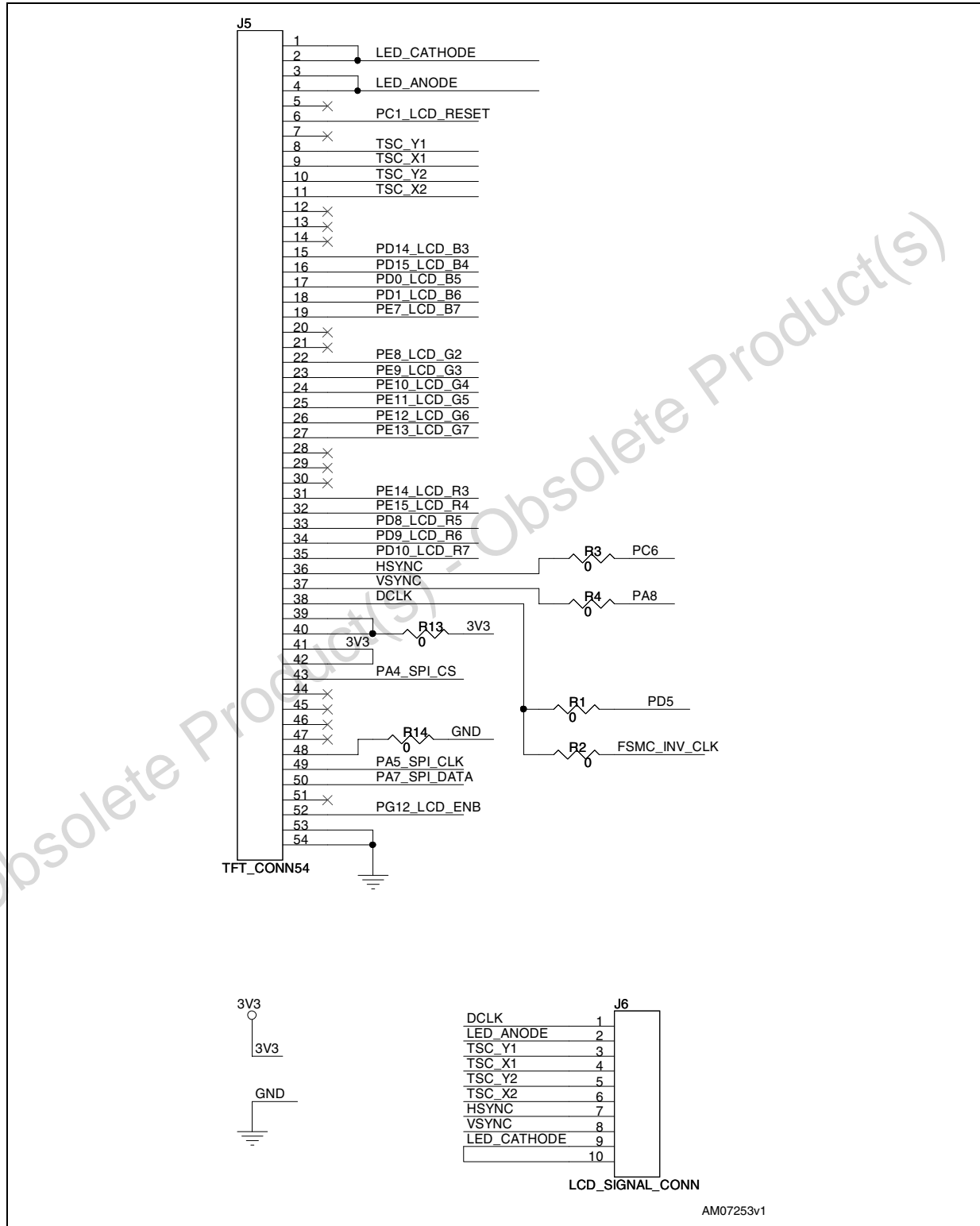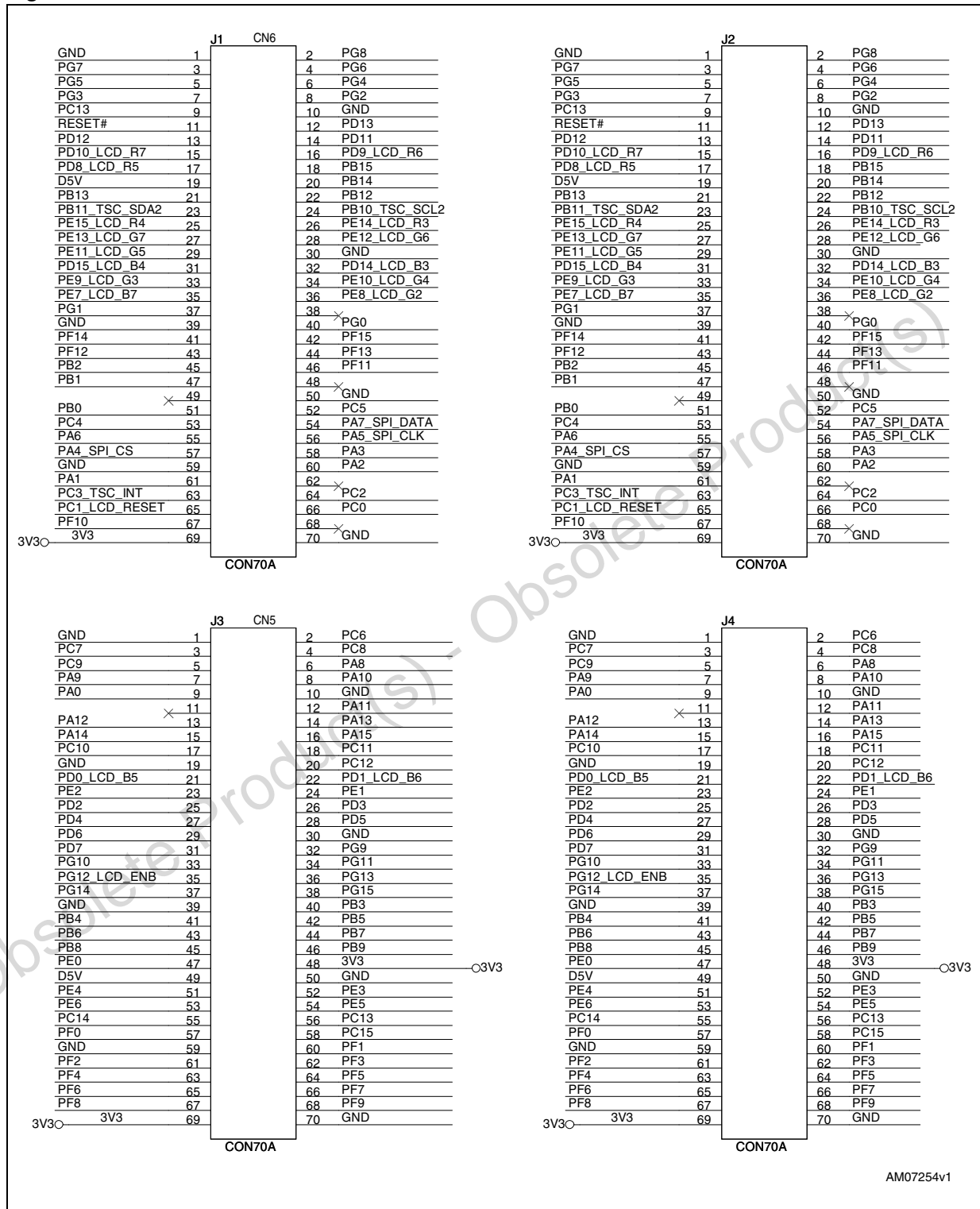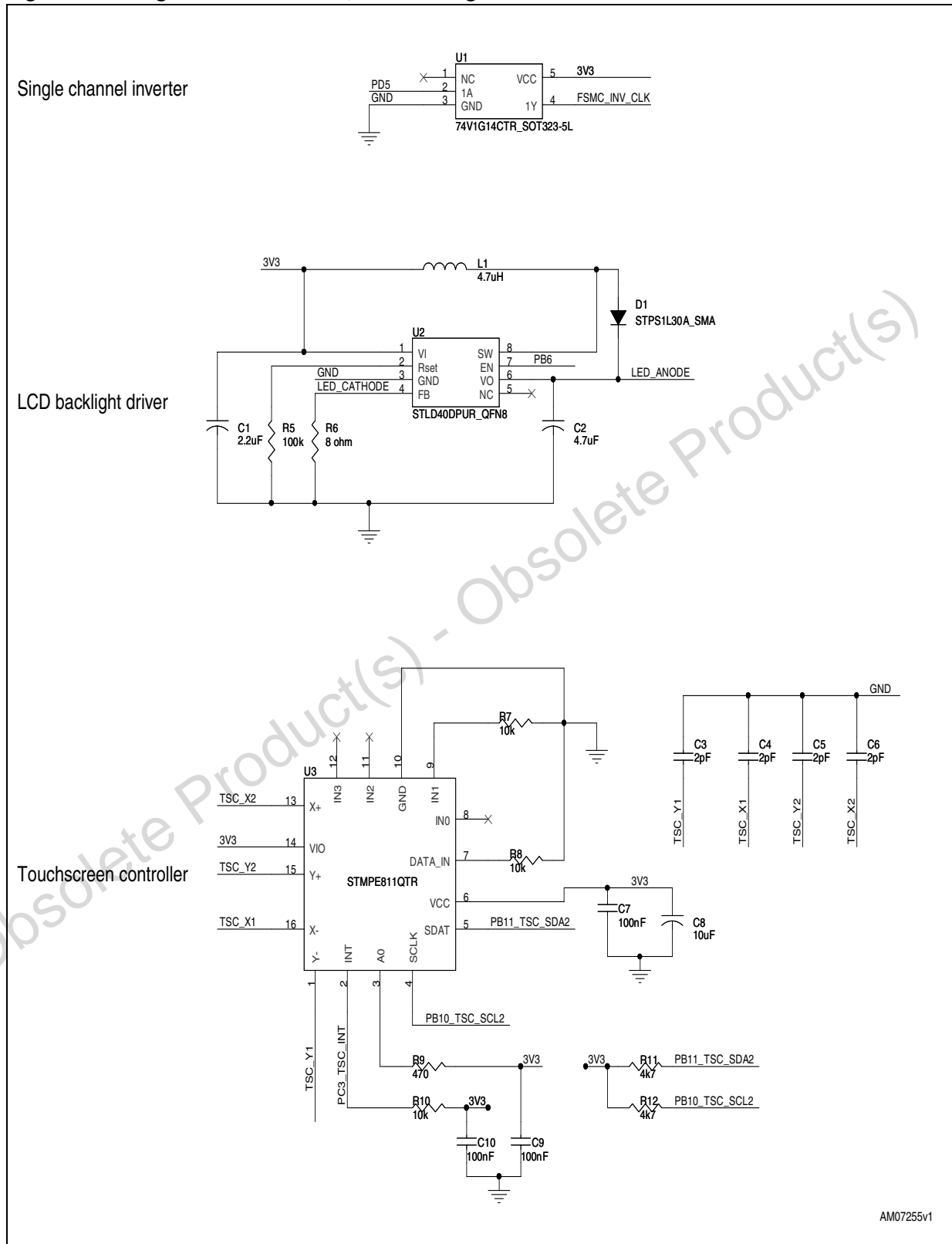# 1   Schematic diagrams

Figure 1.   LED section

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Figure 2. Demonstration board connectors

J1 / CN6 (CON70A)

Pin	Signal		Pin	Signal
1	GND		2	PG8
3	PG7		4	PG6
5	PG5		6	PG4
7	PG3		8	PG2
9	PC13		10	GND
11	RESET#		12	PD13
13	PD12		14	PD11
15	PD10_LCD_R7		16	PD9_LCD_R6
17	PD8_LCD_R5		18	PB15
19	D5V		20	PB14
21	PB13		22	PB12
23	PB11_TSC_SDA2		24	PB10_TSC_SCL2
25	PE15_LCD_R4		26	PE14_LCD_R3
27	PE13_LCD_G7		28	PE12_LCD_G6
29	PE11_LCD_G5		30	GND
31	PD15_LCD_B4		32	PD14_LCD_B3
33	PE9_LCD_G3		34	PE10_LCD_G4
35	PE7_LCD_B7		36	PE8_LCD_G2
37	PG1		38	
39	GND		40	PG0
41	PF14		42	PF15
43	PF12		44	PF13
45	PB2		46	PF11
47	PB1		48	
49			50	GND
51	PB0		52	PC5
53	PC4		54	PA7_SPI_DATA
55	PA6		56	PA5_SPI_CLK
57	PA4_SPI_CS		58	PA3
59	GND		60	PA2
61	PA1		62	
63	PC3_TSC_INT		64	PC2
65	PC1_LCD_RESET		66	PC0
67	PF10		68	
69	3V3		70	GND

3V3

J2 (CON70A)

Pin	Signal		Pin	Signal
1	GND		2	PG8
3	PG7		4	PG6
5	PG5		6	PG4
7	PG3		8	PG2
9	PC13		10	GND
11	RESET#		12	PD13
13	PD12		14	PD11
15	PD10_LCD_R7		16	PD9_LCD_R6
17	PD8_LCD_R5		18	PB15
19	D5V		20	PB14
21	PB13		22	PB12
23	PB11_TSC_SDA2		24	PB10_TSC_SCL2
25	PE15_LCD_R4		26	PE14_LCD_R3
27	PE13_LCD_G7		28	PE12_LCD_G6
29	PE11_LCD_G5		30	GND
31	PD15_LCD_B4		32	PD14_LCD_B3
33	PE9_LCD_G3		34	PE10_LCD_G4
35	PE7_LCD_B7		36	PE8_LCD_G2
37	PG1		38	
39	GND		40	PG0
41	PF14		42	PF15
43	PF12		44	PF13
45	PB2		46	PF11
47	PB1		48	
49			50	GND
51	PB0		52	PC5
53	PC4		54	PA7_SPI_DATA
55	PA6		56	PA5_SPI_CLK
57	PA4_SPI_CS		58	PA3
59	GND		60	PA2
61	PA1		62	
63	PC3_TSC_INT		64	PC2
65	PC1_LCD_RESET		66	PC0
67	PF10		68	
69	3V3		70	GND

3V3

J3 / CN5 (CON70A)

Pin	Signal		Pin	Signal
1	GND		2	PC6
3	PC7		4	PC8
5	PC9		6	PA8
7	PA9		8	PA10
9	PA0		10	GND
11			12	PA11
13	PA12		14	PA13
15	PA14		16	PA15
17	PC10		18	PC11
19	GND		20	PC12
21	PD0_LCD_B5		22	PD1_LCD_B6
23	PE2		24	PE1
25	PD2		26	PD3
27	PD4		28	PD5
29	PD6		30	GND
31	PD7		32	PG9
33	PG10		34	PG11
35	PG12_LCD_ENB		36	PG13
37	PG14		38	PG15
39	GND		40	PB3
41	PB4		42	PB5
43	PB6		44	PB7
45	PB8		46	PB9
47	PE0		48	3V3
49	D5V		50	GND
51	PE4		52	PE3
53	PE6		54	PE5
55	PC14		56	PC13
57	PF0		58	PC15
59	GND		60	PF1
61	PF2		62	PF3
63	PF4		64	PF5
65	PF6		66	PF7
67	PF8		68	PF9
69	3V3		70	GND

3V3

J4 (CON70A)

Pin	Signal		Pin	Signal
1	GND		2	PC6
3	PC7		4	PC8
5	PC9		6	PA8
7	PA9		8	PA10
9	PA0		10	GND
11			12	PA11
13	PA12		14	PA13
15	PA14		16	PA15
17	PC10		18	PC11
19	GND		20	PC12
21	PD0_LCD_B5		22	PD1_LCD_B6
23	PE2		24	PE1
25	PD2		26	PD3
27	PD4		28	PD5
29	PD6		30	GND
31	PD7		32	PG9
33	PG10		34	PG11
35	PG12_LCD_ENB		36	PG13
37	PG14		38	PG15
39	GND		40	PB3
41	PB4		42	PB5
43	PB6		44	PB7
45	PB8		46	PB9
47	PE0		48	3V3
49	D5V		50	GND
51	PE4		52	PE3
53	PE6		54	PE5
55	PC14		56	PC13
57	PF0		58	PC15
59	GND		60	PF1
61	PF2		62	PF3
63	PF4		64	PF5
65	PF6		66	PF7
67	PF8		68	PF9
69	3V3		70	GND

3V3

AM07254v1

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

2 Revision history

Table 1.   Document revision history

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