

# LM4F232 LCD Interface Expansion Board (EB-LM4F232-LCD)

## User Guide

### 1 EB-LM4F232-LCD Overview

The EB-LM4F232-LCD is an extension board for the EK-LM4F232 Development Board (see [Figure 1](#)).

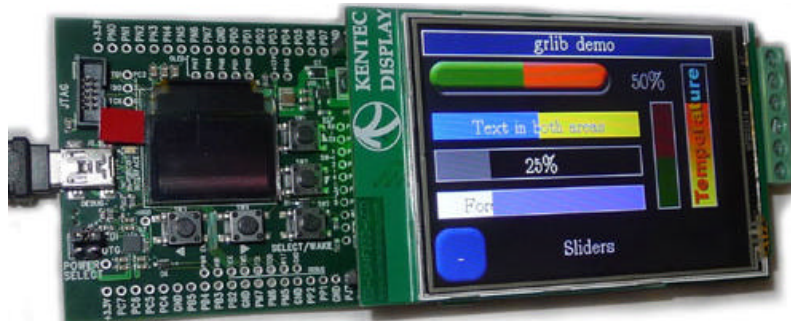


Figure 1. LCD connector expansion board for EK-LM4F232

The expansion board has built in LED backlight driver circuit and 60pin FPC connector for the Kentec LCDs ( 3.2 inch: K320QVG-V1-F; 3.5 inch: K350QVG-V2-F; 4.3 inch: K430WQC-V3-FF; 5 inch: K50DWN2-V1-FF; 7 inch: K70DWN2-V1-FF; 9 inch: K90DWN2-V1-FF).

### 2 EB-LM4F232-LCD Dimensions

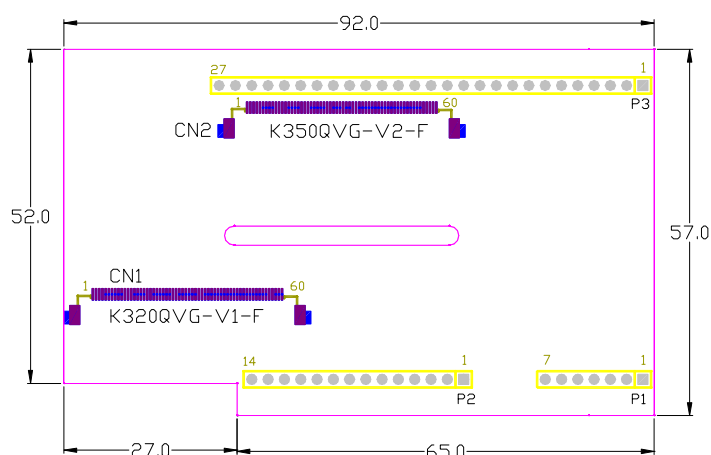


Figure 2. LCD connector Location (Bottom)

### 3 EB-LM4F232-LCD Interface

Table 1. Main Interface Signal (Pin socket connect to EK-LM4F232 MCU board)

P1 Pin	Symbol	EK-LM4F232 Pin	Description
1	LCD_D17	PJ7	Data bit 17 for LCD
2	LCD_D16	PJ6	Data bit 16 for LCD
3	LCD_D15	PJ5	Data bit 15 for LCD
4	LCD_D14	PJ4	Data bit 14 for LCD
5	LCD_D13	PJ3	Data bit 13 for LCD
6	LCD_D12	PJ2	Data bit 12 for LCD
7	LCD_D11	PJ1	Data bit 11 for LCD

Continued Table 1, Main Interface Signal (Pin socket connect to EK-LM4F232 MCU board)

P2 Pin	Symbol	EK-LM4F232 Pin	Description
1	LCD_D10	PJ0	Data bit 10 for LCD
2	GND	GND	Ground (0V)
3	LCD_CS	PL5	Chip select signal for LCD
4	LCD_RST	PL4	Reset input for LCD
5	LCD_RS	PL3	Register/Data select signal for LCD
6	LCD_RD	PL2	Read control signal for LCD
7	LCD_WR	PL1	Write control signal for LCD
8	NC	PL0	No connection
9	GND	GND	Ground (0V)
10	TOUCH_XN	PK7	4-wire resistor touch screen terminal
11	TOUCH_YN	PK6	
12	NC	PK5	No connection
13	NC	PK4	No connection
14	3.3V	3.3V	Power supply (3.3V)

Continued Table 1, Main Interface Signal (Pin socket connect to EK-LM4F232 MCU board)

P3 Pin	Symbol	EK-LM4F232 Pin	Description
1	GND	GND	Ground (0V)
2-9	NC	PF0 - PF7	No connection
10	GND	GND	Ground (0V)
11	LCD_BL	PG3	LCD backlight control signal
12-13	NC	PG6 - PG7	No connection
14	GND	GND	Ground (0V)
15-18	NC	PH0 - PH3	No connection
19	GND	GND	Ground (0V)
20	TOUCH_XP	PK3	4-wire resistor touch screen terminal
21	TOUCH_YP	PK2	
22-23	NC	PK1 - PK0	No connection
24	GND	GND	Ground (0V)
25-26	NC	PA6 - PA7	No connection
27	3.3V	3.3V	Power supply (3.3V)

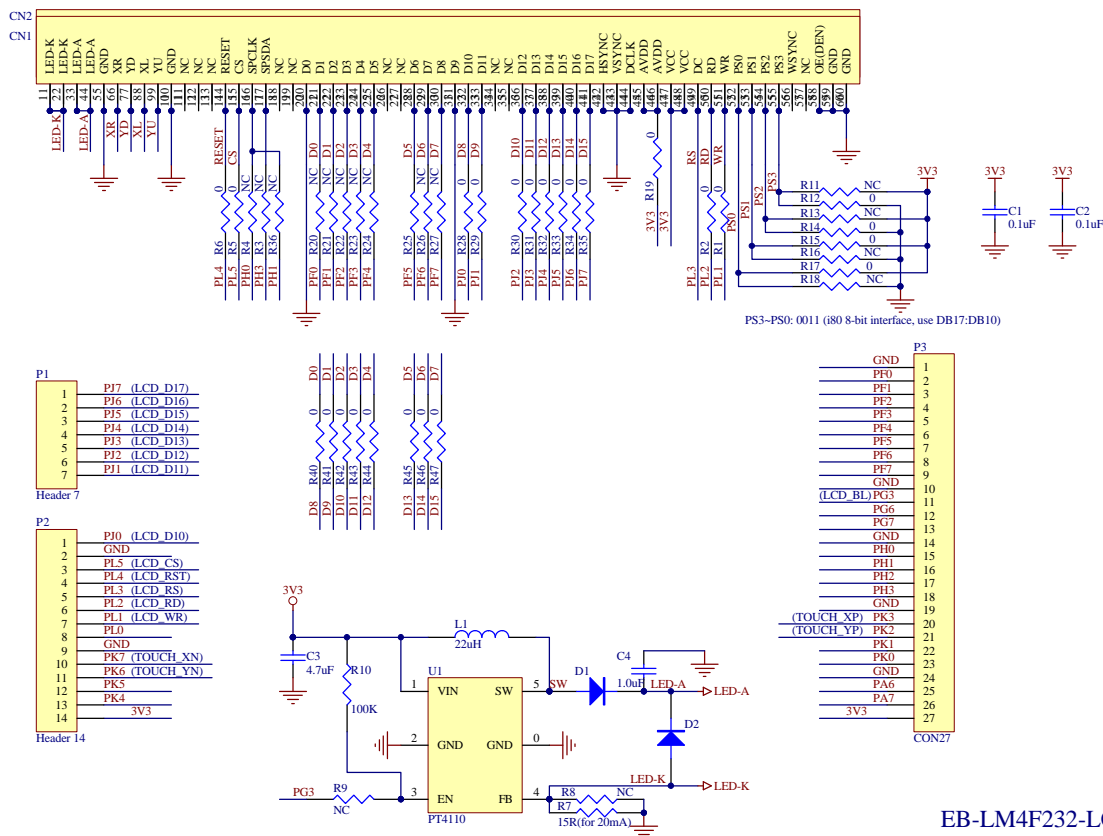
Table 2. LCD Interface Signal (CN1 and CN2, 60pin ZIF connector to LCD module)

Pin	Symbol	Description
1, 2	LED_K	LED power supply (-)
3, 4	LED_A	LED power supply (+)
5	GND	Ground (0V)
6	XR	4-wire resistor touch screen terminal
7	YD	
8	XL	
9	YU	
10	GND	Ground (0V)

Continued Table 2, LCD Interface Signal (CN1 and CN2, 60pin ZIF connector to LCD module)

11~13	NC	No Connection
14	Reset	Reset input signal for LCD
15	CS	Chip select for LCD
16~19	NC	No Connection
20	D0	Data bit 0, default connected to GND on MCU board
21~25	D1~D5	Data bit 1 ~ bit 5
26, 27	NC	No Connection
28~30	D6~D8	Data bit 6 ~ bit 8
31	D9	Data bit 9, default connected to GND on MCU board
32, 33	D10, D11	Data bit 10 ~ bit 11
34, 35	NC	No Connection
36~41	D12~D17	Data bit 12 ~ bit 17
42~44	GND	Ground (0V)
45, 46	AVDD	Power supply (3.3V)
47, 48	VCC	Power supply (3.3V)
49	RS	Command/Data select signal for LCD
50	RD	Read control signal for LCD
51	WR	Write control signal for LCD
52	PS0	LCD interface select pin for K350QVG-V2-F, default set to i8080 16-bit parallel.
53	PS1	
54	PS2	
55	PS3	
56, 57	NC	No connection
58~60	GND	Ground (0V)

### 4 Schematics



EB-LM4F232-LCD circuit diagram

Figure 3. Expansion board schematic

### 5 LCD driver code examples

Bellow attachment is the source code for the K350QVG-V2-F.

NO.	Document	Attachment
1	Source code package	