

# EM-STM3210C LCD Interface Expansion Board (EB-STM3210C-LCD) User Guide

## 1 EB-STM3210C-LCD Overview

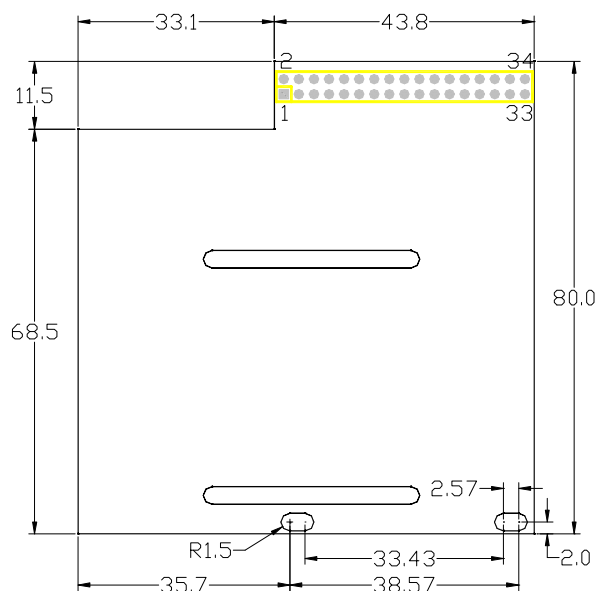
The EB-STM3210C-LCD is an extension board for the EM-STM3210C Development Board (see [Figure 1](#)).



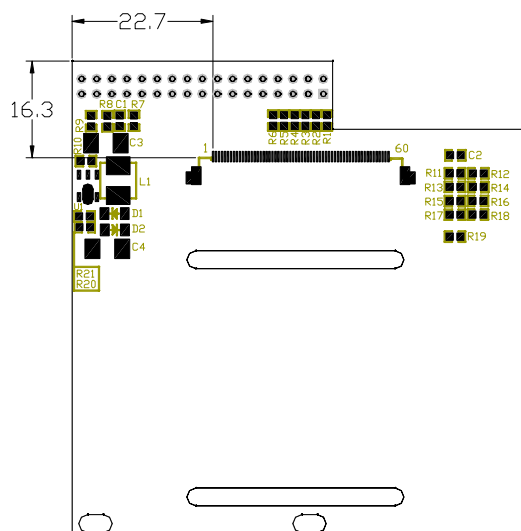
**Figure 1. LCD connector expansion board for EM-STM3210C**

The expansion board has build in LED backlight driver circuit and 60pin FPC connector for the Kentec LCDs (3.5 inch: K350QVG-V2-F; 4.3 inch: K430WQC-V3-FF; 5.0 inch: K50DWN2-V1-FF; 7.0 inch: K70DWN2-V1-FF; 9.0 inch: K90DWN2-V1-FF).

## 2 EB-STM3210C-LCD Dimensions



**Figure 2. Outline Dimensions (Top)**



**Figure 2. LCD connector Location (Bottom)**

### 3 EB-STM3210C-LCD Interface

**Table 1. Main Interface Signal (40pin header connect to EM-STM3210C MCU board)**

| Pin    | Symbol | Description                                |
|--------|--------|--------------------------------------------|
| 1      | CS     | Chip select signal for LCD                 |
| 2      | NC     | Default connected to GND on MCU board.     |
| 3      | SCL    | Serial clock input for LCD                 |
| 4      | NC     | Default connected to GND on MCU board.     |
| 5      | Reset  | Reset input signal for LCD                 |
| 6~21   | D0~D15 | 16-bit data bus, not used.                 |
| 22     | GND    | Ground (0V)                                |
| 23     | RS     | Command/Data select input for LCD          |
| 24, 25 | VDD    | Power Supply (3.3V)                        |
| 26, 27 | GND    | Ground (0V)                                |
| 28     | VDD    | Power Supply (3.3V)                        |
| 29     | NC     | No connection                              |
| 30     | SDI    | Serial data input for LCD                  |
| 31     | XL     | Reserved for 4-wire resistive touch screen |
| 32     | XR     |                                            |
| 33     | YD     |                                            |
| 34     | YU     |                                            |

**Table 2. LCD Interface Signal (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)                                       |
| 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                                     |

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

|        |         |                                                                                 |
|--------|---------|---------------------------------------------------------------------------------|
| 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 4-wire SPI interface. |
| 53     | PS1     |                                                                                 |
| 54     | PS2     |                                                                                 |
| 55     | PS3     |                                                                                 |
| 56, 57 | NC      | No connection                                                                   |
| 58~60  | GND     | Ground (0V)                                                                     |

## 4 Schematics

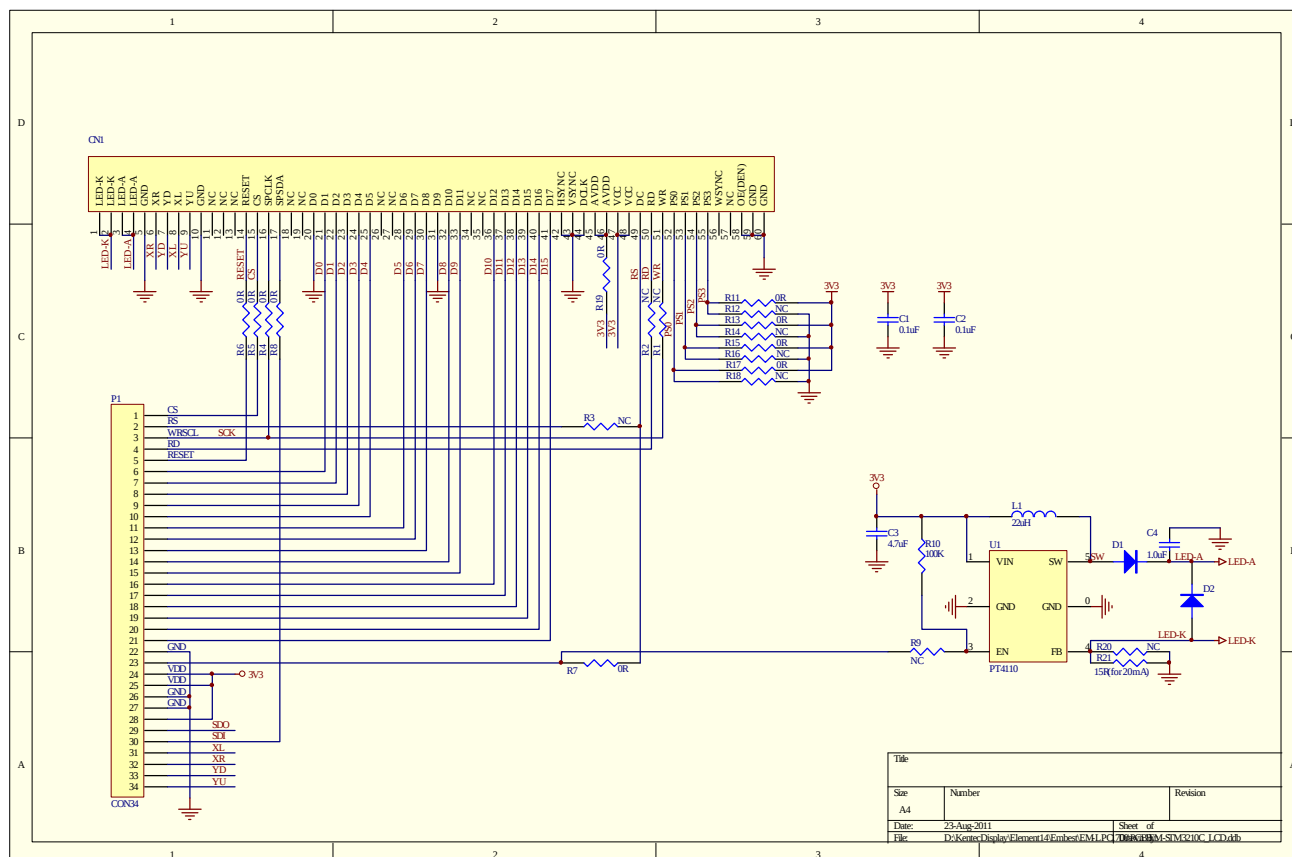


Figure 3. Expansion board schematic

## 5 LCD driver code examples

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

| NO. | Document            | Attachment                                                                            |
|-----|---------------------|---------------------------------------------------------------------------------------|
| 1   | Source code package |  |