



NOKIA 5110 is a graphic display-based LCD screen with many applications. PCD8544 controller is used. PCD8554 is a low-power CMOS LCD controller, used to drive 48 rows and 84 columns of graphic display, and connected to the microcontroller using a serial bus interface, which greatly reduces the number of peripheral control lines. It is very convenient to use and has its own unique advantages over LCD1602 and LCD12864.

### Features

- 84 x 48 dot matrix LCD can display up to four lines of Chinese characters;
- Using serial interface to communicate with the main processor, the number of interface signal lines is greatly reduced, including power and ground signal lines, there are only 9. Support multiple serial communication protocols(such as AVR microcontroller SPI, MCS51 serial port mode 0, etc.), the transmission rate is up to 4Mbps, and the display data can be written at full speed without waiting time.
- The module can be connected to the printed board by conductive glue without connecting cables. The module can be fixed to the printed board with the metal hook on the module, so it is very easy to install and replace.
- The LCD controller/driver chip has been bound to the LCD chip, and the module is very small.
- It uses low voltage power supply, the working current is below 200 $\mu$ A during normal display, and it has a power-off mode.

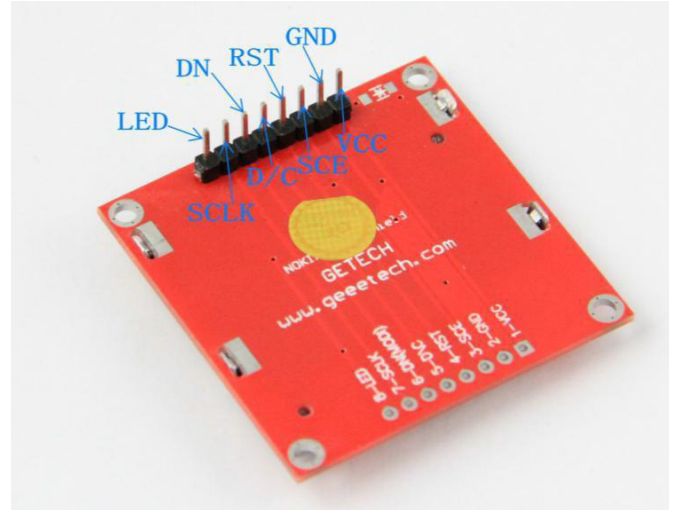
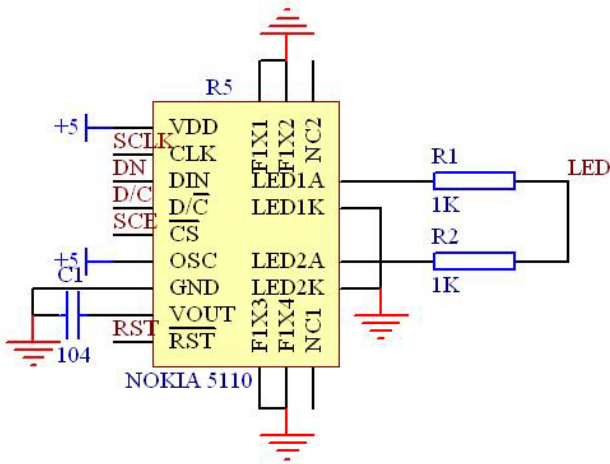
### Main parameters

- Single-chip LCD controller
- Display data buffer 48 x 84 bits
- Serial interface, maximum rate 4Mbits/S
- Supply voltage 2.7V to 3.3V, limit 7V
- Low power consumption, can be powered by battery

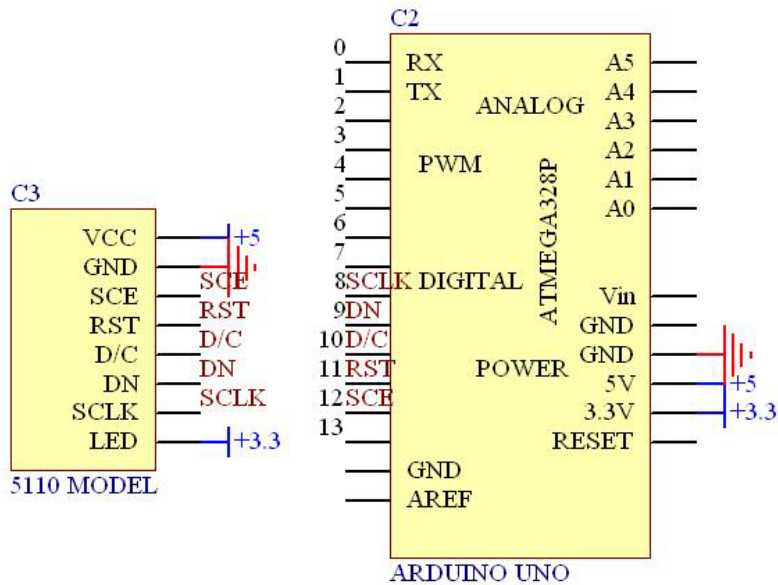
## Direction for use

The internal structure of NOKIA 5110 LCD may be a bit complicated compared to LCD1602, but this does not affect us. As long as we are familiar with the functions of its peripheral pins, we can drive it well and apply it skillfully in our design.

In order to better familiarize ourselves with the use of NOKIA 5110 LCD, I have made a schematic diagram of NOKIA 5110 LCD below.



Pin definition



Schematic diagram of connecting the module to Arduino board

## Test

### Hardware Required

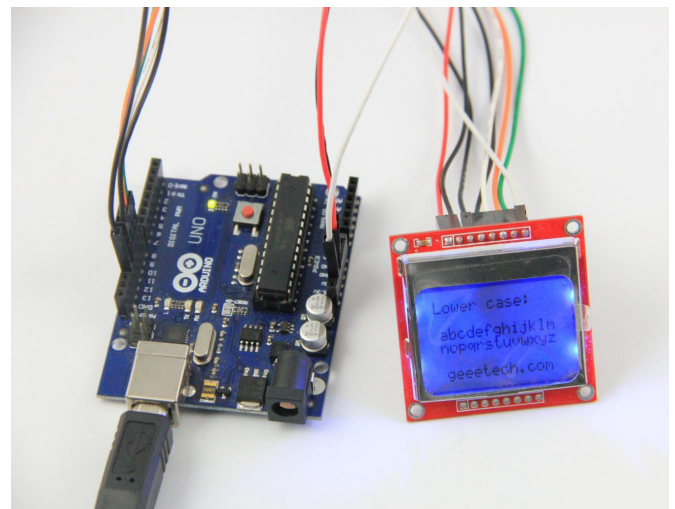
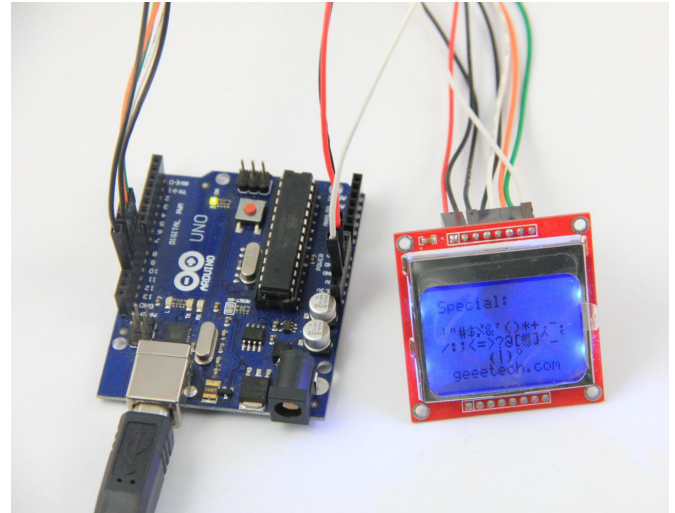
- Arduino controller × 1
- USB data cable × 1
- NOKIA 5110 LCD module × 1

Test content: Let the 5110 LCD module display 26 uppercase and lowercase letters, 10 numbers, and special characters in a loop.

### Test code:

```
// SCLK - Pin 8
// DN - Pin 9
// D/C - Pin 10
// RST - Pin 11
// SCE - Pin 12
#include <LCD5110_Basic.h>
LCD5110 myGLCD(8,9,10,11,12);
extern uint8_t
SmallFont[]; void
setup()
{
myGLCD.InitLCD();
myGLCD.setFont(SmallFont);
}
void loop()
{
myGLCD.clrScr();
myGLCD.print("Upper case:", LEFT,
0);
myGLCD.print("ABCDEFGHJKLM", CENTER, 16);
myGLCD.print("NOPQRSTUVWXYZ", CENTER, 24);
myGLCD.print("geeetech.com", CENTER, 40);
delay (5000);
myGLCD.clrScr();
myGLCD.print("Lower case:", LEFT,
0);
myGLCD.print("abcdefghijklm", CENTER, 16);
myGLCD.print("nopqrstuvwxyz", CENTER, 24);
myGLCD.print("geeetech.com", CENTER, 40);
delay (5000);
myGLCD.clrScr();
myGLCD.print("Numbers:", LEFT,
0);
myGLCD.print("0123456789", CENTER, 16);
myGLCD.print("geeetech.com", CENTER, 40);
delay (5000);
myGLCD.clrScr();
myGLCD.print("Special:",
LEFT, 0);
myGLCD.print("!\"#$%&?'()*+,-.", CENTER, 16);
myGLCD.print("/;:<=>?@[\\]^_`", CENTER, 24);
myGLCD.print("{|}~", CENTER, 32);
myGLCD.print("geeetech.com", CENTER, 40);
delay (5000);
}
}
```

Add the header files to be used in the code to the library folder, compile the test code above, and connect the circuit



Distributed by:  
Electus Distribution Pty Ltd  
46 Eastern Creek Dr,  
Eastern Creek NSW 2766 Australia  
1300 738 555  
[www.electusdistribution.com.au](http://www.electusdistribution.com.au)

Made in China