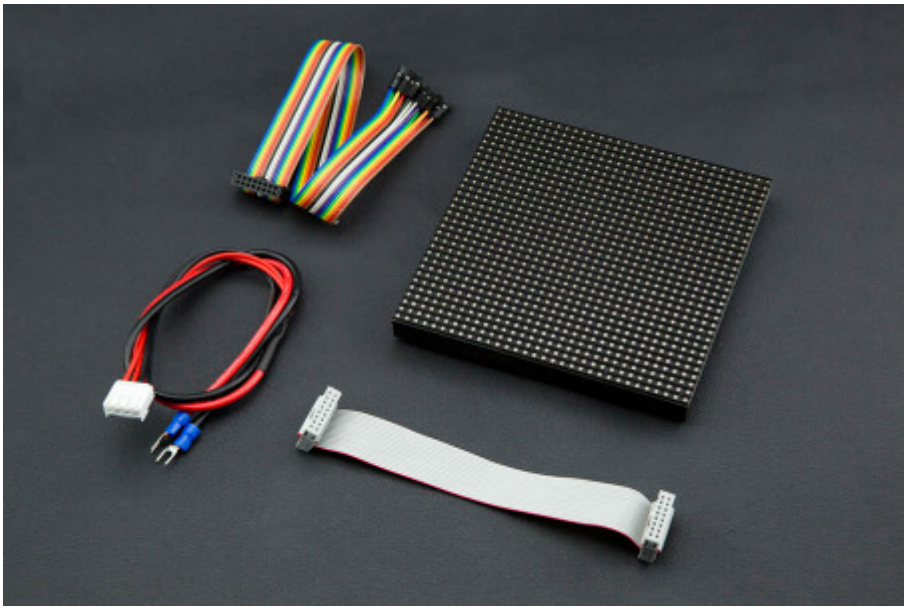
32x32 RGB LED Matrix - 4mm pitch SKU:DFR0472



INTRODUCTION

City night is always beautiful. She is just like a charming girl, showing her beauty every time. The colorful light is jewelry, dotted on her dress.
This is a 32x32 RGB LED Matrix Panel, it has 1024 full-color RGB LEDs in all. Each LED can be independently addressed and controlled. It requires at least 13 digital GPIOs to control the LED matrix. The led matrix has 2 IDC connectors (DATA_IN, DATA_OUT) on the back, you can cascade multiple panels and make a huge screen together. BUT Arduino doesn't support this function, its speed is not enough to multiple panel.
What's more, it is a high brightness, long life, no pollution, pure color LED display module. It can be used both indoor and outdoor, safety and stability, the module can not be mutually extrusion deformation, also can be used normally in harsh environment.

Note: This panel needs a 5V@3A power supply. And if you connect 2 or more screen, it needs a high performance controller, such as Mega 2560, Raspberry. .etc.

SPECIFICATION

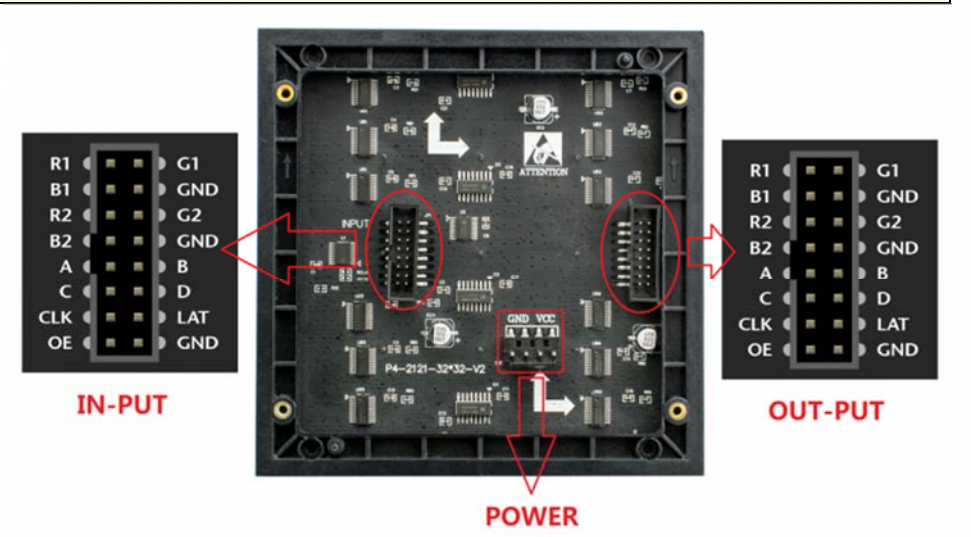
- Operating voltage: DC 5V
- Average power consumption: <500W/㎡
- Maxim Power Consumption: <1000w/㎡
- Pixel: 32x32=1024
- Level of viewing Angle: ≧160°
- Control mode: Synchronous control
- Drive mode: 1/16 scan rate
- Repetition frequency: ≧60Hz
- White Balance Brightness: ≧1200cd/㎡
- Refresh frequency : ≧300Hz
- MTTF: ≧5000 hours
- Service Life: 75000~100000 hours
- Pixel pitch: 4mm
- Dimension: 128mm*128mm/5.04*5.04 inches
- Thickness: 11mm

SHIPPING LIST

- 32x32 RGB LED Matrix Panel (4mm pitch) x1
- IDC to XH2.54 cable x1
- IDC to IDC cable x1
- Power supply cable x1

Board Overview

Note：The pin order of DATA-IN and ADTA-OUT is same, POWER SUPPLY 5V.



DATA-IN and DATA-OUT

Label	Name	Function
1	DR1	High R data
2	DG1	High G data
3	DB1	High B data
4	GND	GND
5	DR2	Low R data
6	DG2	Low G data
7	DB2	Low B data
8	GND	GND
9	A	A line selection
10	B	B line selection
11	C	C line selection
12	D	D line selection

13	CLK	CLOCK
14	LAT	LATCH
15	OE	Output Enable
16	GND	GND

POWER

Label	Name	Function
1	VCC	5V
2	VCC	5V
3	GND	GND
4	GND	GND

Tutorial

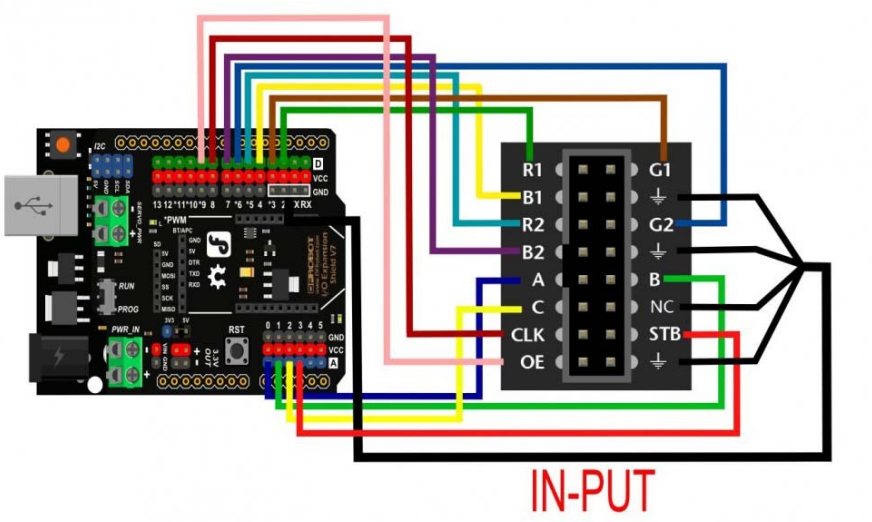
According to the pinout to connect, then upload the code to UNO, you will be able to see a beautiful display effect.

Requirements

- **Hardware**
  DFRduino UNO R3 x1
  DFR0471 x1
  DuPont cables

- **Software**
  Arduino IDE Click to Download Arduino IDE from Arduino®
  https://www.arduino.cc/en/Main/Software

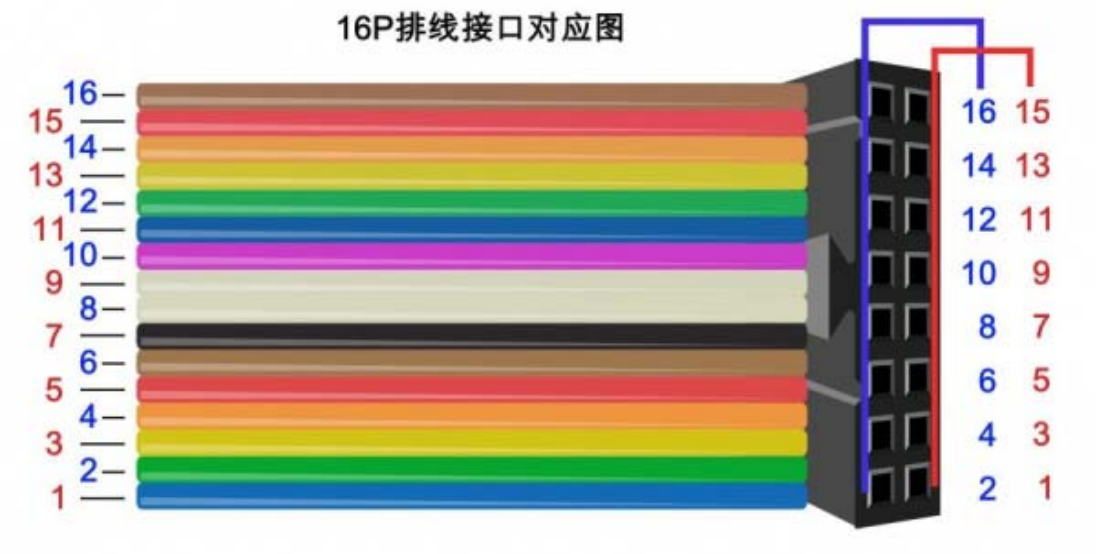
Connection Diagram



DFR0471 Connection Diagram

⚠	Note: It needs an external power supply, the USB is only 5V@500mA, not enough power.

16P Interface Diagram



DFR0471 16P Pinout

Sample Code 1

Click to download the library Adafruit-GFX-Library. RGB-matrix-Panel. How to install the library?

https://github.com/adafruit/Adafruit-GFX-Library/archive/master.zip

https://github.com/adafruit/Adafruit-GFX-Library/archive/master.zip

http://www.dfrobot.com.cn/community/forum.php?mod=viewthread&tid=1854&page=1&extra=#pid6955

```
/*************************************************
*
* For 32x32 RGB LED matrix.
*
* @author lg.gang
* @version  V1.0
* @date  2016-10-28
*
* GNU Lesser General Public License.
* See <http://www.gnu.org/licenses/> for details.
* All above must be included in any redistribution
* ************************************************/

#include <Adafruit_GFX.h>   // Core graphics library
#include <RGBmatrixPanel.h> // Hardware-specific library

// If your 32x32 matrix has the SINGLE HEADER input,
// use this pinout:
#define CLK 8  // MUST be on PORTB! (Use pin 11 on Mega)
#define OE  9
#define LAT 10
#define A   A0
#define B   A1
#define C   A2
#define D   A3
// If your matrix has the DOUBLE HEADER input, use:
//#define CLK 8  // MUST be on PORTB! (Use pin 11 on Mega)
```

```
//#define LAT 9
//#define OE  10
//#define A   A3
//#define B   A2
//#define C   A1
//#define D   A0
RGBmatrixPanel matrix(A, B, C, D, CLK, LAT, OE, false);

void setup() {
  int      x, y, hue;
  float    dx, dy, d;
  uint8_t  sat, val;
  uint16_t c;

  matrix.begin();

  for(y=0; y < matrix.width(); y++) {
    dy = 15.5 - (float)y;
    for(x=0; x < matrix.height(); x++) {
      dx = 15.5 - (float)x;
      d  = dx * dx + dy * dy;
      if(d <= (16.5 * 16.5)) { // Inside the circle(ish)?
        hue = (int)((atan2(-dy, dx) + PI) * 1536.0 / (PI * 2.0));
        d = sqrt(d);
        if(d > 15.5) {
          // Do a little pseudo anti-aliasing along perimeter
          sat = 255;
          val = (int)((1.0 - (d - 15.5)) * 255.0 + 0.5);
        } else
        {
          // White at center
          sat = (int)(d / 15.5 * 255.0 + 0.5);
          val = 255;
        }
```

```
        c = matrix.ColorHSV(hue, sat, val, true);
      } else {
        c = 0;
      }
      matrix.drawPixel(x, y, c);
    }
  }
}

void loop() {
  // do nothing
}
```

Smaple Code 2

```
/*************************************************
*
* For 32x32 RGB LED matrix.
*
* @author lg.gang
* @version  V1.0
* @date  2016-10-28
*
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* See <http://www.gnu.org/licenses/> for details.
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//#define LAT 9
//#define OE  10
//#define A   A3
//#define B   A2
//#define C   A1
//#define D   A0
RGBmatrixPanel matrix(A, B, C, D, CLK, LAT, OE, false);

void setup() {

  matrix.begin();

  // whew!
}

void loop() {
  // fix the screen with red
  matrix.fillRect(0, 0, 32, 32, matrix.Color333(7, 0, 0));
  delay(500);
  // fix the screen with green
  matrix.fillRect(0, 0, 32, 32, matrix.Color333(0, 7, 0));
  delay(500);
  // fix the screen with blue
  matrix.fillRect(0, 0, 32, 32, matrix.Color333(0, 0, 7));
  delay(500);
```

```
// fix the screen with yellow
matrix.fillRect(0, 0, 32, 32, matrix.Color333(7, 7, 0));
delay(500);
// fix the screen with purple
matrix.fillRect(0, 0, 32, 32, matrix.Color333(7, 0, 7));
delay(500);
// fix the screen with cyan
matrix.fillRect(0, 0, 32, 32, matrix.Color333(0,7, 7));
delay(500);
// fix the screen with white
matrix.fillRect(0, 0, 32, 32, matrix.Color333(3, 3, 3));
delay(500);

 // fill the screen with 'black'
matrix.fillScreen(matrix.Color333(0, 0, 0));
// draw a pixel in solid white
matrix.drawPixel(0, 0, matrix.Color333(7, 7, 7));
delay(500);

// fix the screen with green
matrix.fillRect(0, 0, 32, 32, matrix.Color333(0, 7, 0));
delay(500);

// draw a box in yellow
matrix.drawRect(0, 0, 32, 32, matrix.Color333(7, 7, 0));
delay(500);

// draw an 'X' in red
matrix.drawLine(0, 0, 31, 31, matrix.Color333(7, 0, 0));
matrix.drawLine(31, 0, 0, 31, matrix.Color333(7, 0, 0));
delay(500);

// draw a blue circle
matrix.drawCircle(10, 10, 10, matrix.Color333(0, 0, 7));
```

```
  delay(500);


  // fill a violet circle
  matrix.fillCircle(21, 21, 10, matrix.Color333(7, 0, 7));
  delay(500);


  // fill the screen with 'black'
  matrix.fillScreen(matrix.Color333(0, 0, 0));


  // draw some text!
  matrix.setCursor(1, 0);    // start at top left, with one pixel
of spacing
  matrix.setTextSize(1);     // size 1 == 8 pixels high
  matrix.setTextWrap(false); // Don't wrap at end of line - will
do ourselves


  matrix.setTextColor(matrix.Color333(0,7,0));
  matrix.println("green");
  matrix.setTextColor(matrix.Color333(0,7,7));
  matrix.println("robot");


  // print each letter with a rainbow color
  matrix.setTextColor(matrix.Color333(7,0,0));
  matrix.print('3');
  matrix.setTextColor(matrix.Color333(7,4,0));
  matrix.print('2');
  matrix.setTextColor(matrix.Color333(7,7,0));
  matrix.print('x');
  matrix.setTextColor(matrix.Color333(4,7,0));
  matrix.print('3');
  matrix.setTextColor(matrix.Color333(0,7,0));
  matrix.println('2');


  matrix.setTextColor(matrix.Color333(0,7,7));
  matrix.print('*');
```

```
  matrix.setTextColor(matrix.Color333(0,4,7));
  matrix.print('R');
  matrix.setTextColor(matrix.Color333(0,0,7));
  matrix.print('G');
  matrix.setTextColor(matrix.Color333(4,0,7));
  matrix.print('B');
  matrix.setTextColor(matrix.Color333(7,0,4));
  matrix.print('*');
  delay(5000);
}
```

Expected Results

- Smaple Code 1: A color filled circle
- Sample Code 2: The LED module will take turns display: a white point, full screen green, full screen yellow, a yellow rectangle, a yellow rectangle, a red X and a blue circle,

.

FAQ

For any questions, advice or cool ideas to share, please visit the **DFRobot Forum**.