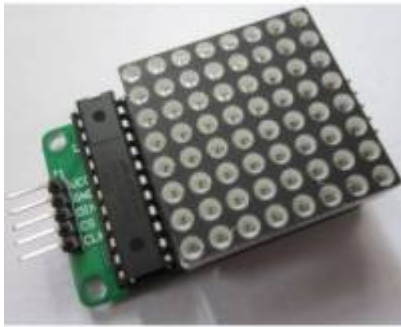


## Tutoriels MAX7219 avec matrice 8X8



### Liens web tuto MAX7219

- [Montage Kit MAX7219 EN](#)
- [utilisation-du-module-matrice-a-leds-8x8-max7219-avec-arduino](#)
- [Montage Kstart:arduino:max7219:FRit MAX7219 FR](#)
- [Concevez des matrices de LED](#)
- [Tuto MAX7219 Arduino](#)
- [Matrice 8X8](#)
- [Tutoriel Arduino – MAX7219 Afficheur 8X8 LED](#)
- [MAX 7219](#)
- [LED Matrix Kit](#)
- [64 LEDS et MAX7219](#)
- [MAX7219 avec 4 matrices de LEDS 8X8 en cascade](#)
  - [Matrice LEDS 5 fois 8x8](#)
- [LEDS 8X8 par internet](#)
- [Une Video](#)

### Programmes

### Préparation Logiciels



Utiliser ou télécharger la dernière version de [l'IDE Arduino](#)

Le diagramme de synchronisation pour Max7219 et son format de données série sont joints ci-dessous avec ses caractéristiques électroniques.

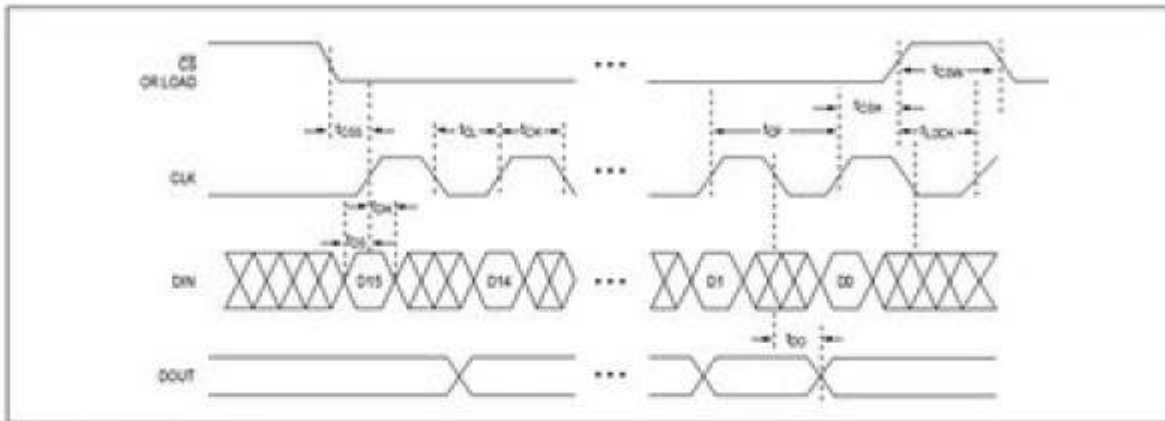


Figure 1. Timing Diagram

Table 1. Serial-Data Format (16 Bits)

| D15 | D14 | D13 | D12 | D11     | D10 | D9 | D8 | D7  | D6   | D5 | D4 | D3 | D2 | D1 | D0  |
|-----|-----|-----|-----|---------|-----|----|----|-----|------|----|----|----|----|----|-----|
| X   | X   | X   | X   | ADDRESS |     |    |    | MSB | DATA |    |    |    |    |    | LSB |

## ELECTRICAL CHARACTERISTICS (continued)

(V<sub>+</sub> = 5V ± 10%, R<sub>SET</sub> = 9.53kΩ ± 1%, T<sub>A</sub> = T<sub>MIN</sub> to T<sub>MAX</sub>, unless otherwise noted.)

| PARAMETER                                                 | SYMBOL                            | CONDITIONS                             | MIN                | TYP | MAX  | UNITS |
|-----------------------------------------------------------|-----------------------------------|----------------------------------------|--------------------|-----|------|-------|
| <b>LOGIC INPUTS</b>                                       |                                   |                                        |                    |     |      |       |
| Input Current DIN, CLK, LOAD, CS                          | I <sub>IN</sub> , I <sub>IL</sub> | V <sub>IN</sub> = 0V or V <sub>+</sub> | -1                 |     | 1    | μA    |
| Logic High Input Voltage                                  | V <sub>IH</sub>                   |                                        | 3.5                |     |      | V     |
| Logic Low Input Voltage                                   | V <sub>IL</sub>                   |                                        |                    |     | 0.8  | V     |
| Output High Voltage                                       | V <sub>OH</sub>                   | DOUT, I <sub>SOURCE</sub> = -1mA       | V <sub>+</sub> - 1 |     |      | V     |
| Output Low Voltage                                        | V <sub>OL</sub>                   | DOUT, I <sub>SENK</sub> = 1.6mA        |                    |     | 0.4  | V     |
| Hysteresis Voltage                                        | ΔV <sub>I</sub>                   | DIN, CLK, LOAD, CS                     |                    | 1   |      | V     |
| <b>TIMING CHARACTERISTICS</b>                             |                                   |                                        |                    |     |      |       |
| CLK Clock Period                                          | t <sub>CP</sub>                   |                                        | 100                |     |      | ns    |
| CLK Pulse Width High                                      | t <sub>CH</sub>                   |                                        | 50                 |     |      | ns    |
| CLK Pulse Width Low                                       | t <sub>CL</sub>                   |                                        | 50                 |     |      | ns    |
| CS Fall to SCLK Rise Setup Time (MAX7221 only)            | t <sub>CSS</sub>                  |                                        | 25                 |     |      | ns    |
| CLK Rise to CS or LOAD Rise Hold Time                     | t <sub>CSH</sub>                  |                                        | 0                  |     |      | ns    |
| DIN Setup Time                                            | t <sub>DS</sub>                   |                                        | 25                 |     |      | ns    |
| DIN Hold Time                                             | t <sub>DH</sub>                   |                                        | 0                  |     |      | ns    |
| Output Data Propagation Delay                             | t <sub>DO</sub>                   | C <sub>LOAD</sub> = 50pF               |                    |     | 25   | ns    |
| Load-Rising Edge to Next Clock Rising Edge (MAX7219 only) | t <sub>DCK</sub>                  |                                        | 50                 |     |      | ns    |
| Minimum CS or LOAD Pulse High                             | t <sub>CSW</sub>                  |                                        | 50                 |     |      | ns    |
| Data-to-Segment Delay                                     | t <sub>DSFD</sub>                 |                                        |                    |     | 2.25 | ms    |

## Un programme de test sans librairie à inclure

### exemple\_code\_MAX7219.ino

```

    unsigned char i;
    unsigned char j;
    /*Port Definitions*/
    int Max7219_pinCLK = 10;
    int Max7219_pinCS = 9;
    int Max7219_pinDIN = 8;

    unsigned char displ[38][8]={
    {0x3C,0x42,0x42,0x42,0x42,0x42,0x42,0x3C},//0
    {0x10,0x18,0x14,0x10,0x10,0x10,0x10,0x10},//1
    {0x7E,0x2,0x2,0x7E,0x40,0x40,0x40,0x7E},//2
    {0x3E,0x2,0x2,0x3E,0x2,0x2,0x3E,0x0},//3
    {0x8,0x18,0x28,0x48,0xFE,0x8,0x8,0x8},//4
    {0x3C,0x20,0x20,0x3C,0x4,0x4,0x3C,0x0},//5
    {0x3C,0x20,0x20,0x3C,0x24,0x24,0x3C,0x0},//6
    {0x3E,0x22,0x4,0x8,0x8,0x8,0x8,0x8},//7
    {0x0,0x3E,0x22,0x22,0x3E,0x22,0x22,0x3E},//8
    {0x3E,0x22,0x22,0x3E,0x2,0x2,0x2,0x3E},//9
    {0x8,0x14,0x22,0x3E,0x22,0x22,0x22,0x22},//A
    {0x3C,0x22,0x22,0x3E,0x22,0x22,0x3C,0x0},//B
    {0x3C,0x40,0x40,0x40,0x40,0x40,0x3C,0x0},//C
    {0x7C,0x42,0x42,0x42,0x42,0x42,0x7C,0x0},//D
    {0x7C,0x40,0x40,0x7C,0x40,0x40,0x40,0x7C},//E
    {0x7C,0x40,0x40,0x7C,0x40,0x40,0x40,0x40},//F
    {0x3C,0x40,0x40,0x40,0x40,0x44,0x44,0x3C},//G
    {0x44,0x44,0x44,0x7C,0x44,0x44,0x44,0x44},//H
    {0x7C,0x10,0x10,0x10,0x10,0x10,0x10,0x7C},//I
    {0x3C,0x8,0x8,0x8,0x8,0x8,0x48,0x30},//J
    {0x0,0x24,0x28,0x30,0x20,0x30,0x28,0x24},//K
    {0x40,0x40,0x40,0x40,0x40,0x40,0x40,0x7C},//L
    {0x81,0xC3,0xA5,0x99,0x81,0x81,0x81,0x81},//M
    {0x0,0x42,0x62,0x52,0x4A,0x46,0x42,0x0},//N
    {0x3C,0x42,0x42,0x42,0x42,0x42,0x42,0x3C},//O
    {0x3C,0x22,0x22,0x22,0x3C,0x20,0x20,0x20},//P
    {0x1C,0x22,0x22,0x22,0x22,0x26,0x22,0x1D},//Q
    {0x3C,0x22,0x22,0x22,0x3C,0x24,0x22,0x21},//R
    {0x0,0x1E,0x20,0x20,0x3E,0x2,0x2,0x3C},//S
    {0x0,0x3E,0x8,0x8,0x8,0x8,0x8,0x8},//T
    {0x42,0x42,0x42,0x42,0x42,0x42,0x22,0x1C},//U
    {0x42,0x42,0x42,0x42,0x42,0x42,0x24,0x18},//V
    {0x0,0x49,0x49,0x49,0x49,0x2A,0x1C,0x0},//W
    {0x0,0x41,0x22,0x14,0x8,0x14,0x22,0x41},//X
    {0x41,0x22,0x14,0x8,0x8,0x8,0x8,0x8},//Y
    {0x0,0x7F,0x2,0x4,0x8,0x10,0x20,0x7F},//Z
    };

```

```
void Write_Max7219_byte(unsigned char DATA)
{
    unsigned char i;
    digitalWrite(Max7219_pinCS,LOW);
    for(i=8;i>=1;i--)
    {
        digitalWrite(Max7219_pinCLK,LOW);
        digitalWrite(Max7219_pinDIN,DATA&0x80);// Extracting a bit
        DATA = DATA<<1;
        digitalWrite(Max7219_pinCLK,HIGH);
    }
}

void Write_Max7219(unsigned char address,unsigned char dat)
{
    digitalWrite(Max7219_pinCS,LOW);
    Write_Max7219_byte(address);           //address=code of LED
    Write_Max7219_byte(dat);              //data=figure on LED
    digitalWrite(Max7219_pinCS,HIGH);
}

void Init_MAX7219(void)
{
    Write_Max7219(0x09, 0x00);           //decoding =BCD
    Write_Max7219(0x0a, 0x03);           //brightness
    Write_Max7219(0x0b, 0x07);           //scanlimit=8 LEDs
    Write_Max7219(0x0c, 0x01);           //power-down mode=0=normal mode=1
    Write_Max7219(0x0f, 0x00);           //test display=1=EOT=display=0
}

void setup()
{
    pinMode(Max7219_pinCLK,OUTPUT);
    pinMode(Max7219_pinCS,OUTPUT);
    pinMode(Max7219_pinDIN,OUTPUT);
    delay(50);
    Init_MAX7219();
}

void loop()
{
    for(j=0;j<38;j++)
```

```
{  
  for(i=1;i<9;i++)  
    Write_Max7219(i,disp1[j][i-1]);  
  delay(500);  
}
```

### Programmes avec librairies à inclure

- afficheur8x8.zip
- max7219\_dot\_matrix\_scroll\_text.ino.zip
  - web-scroll-matrix-master.zip
  - max7219\_100.ino.tar.gz

### Librairies

Différentes librairies à tester

- ledcontrol.zip
- ledcontrol-master.zip
- maxmatrix.zip

Une librairie pour les matrices en cascade ( à essayer ...)

- ledcontrolms\_f79uc7xhkcmpgv.zip

Une autre librairie mais pour le Raspberry ( A voir lors d'une autre soirée ...)

- luma.led\_matrix-master\_raspberry.zip
- On peut y voir une demo en image animée...

### Pour la création de codes pour matrices de LEDS

Envoyer par Fernand

#### [8x8 Matrix Character Creator](#)

Pour la création de caractères 8x8 sur la matrice de LEDS

- [Leds Matrice editor](#)
- Le programme qui va avec :
- [Programme pour matrice](#)

Toujours envoyer par Fernand : un programme de test, ne pas oublier d'inclure les 2 librairies ci-dessous

## Matrix 32x8 Max7219



- - exemple 002 programme 32X8
    - Librairie Adafruit\_gfx
    - Librairie Max72xx

### exemple\_002\_code\_max7219\_32X8.ino

```
include SPI.h
#include Adafruit_GFX.h
#include Max72xxPanel.h

int pinCS = 10; // Attach CS to this pin, DIN to MOSI and CLK to SCK
                (cf http://arduino.cc/en/Reference/SPI )
int numberOfHorizontalDisplays = 1;
int numberOfVerticalDisplays = 4;

Max72xxPanel matrix = Max72xxPanel(pinCS, numberOfHorizontalDisplays,
numberOfVerticalDisplays);

String tape = "Ayo belajar Arduino bersama DA Electronics";
int wait = 50; // In milliseconds

int spacer = 1;
int width = 5 + spacer; // The font width is 5 pixels

void setup() {

matrix.setIntensity(7); // Use a value between 0 and 15 for brightness

// Adjust to your own needs
matrix.setRotation(matrix.getRotation() + 1 ); // The first display is
position upside down
// matrix.setRotation(1, 1); // The first display is position upside
down
}
```

```
void loop() {  
  
  for ( int i = 0 ; i < width * tape.length() + matrix.width() - 1 -  
    spacer; i++ ) {  
  
    matrix.fillScreen(LOW);  
  
    int letter = i / width;  
    int x = (matrix.width() - 1) - i % width;  
    int y = (matrix.height() - 8) / 2; // center the text vertically  
  
    while ( x + width - spacer >= 0 && letter >= 0 ) {  
      if ( letter < tape.length() ) {  
        matrix.drawChar(x, y, tape[letter], HIGH, LOW, 1);  
      }  
  
      letter--;  
      x -= width;  
    }  
  
    matrix.write(); // Send bitmap to display  
  
    delay(wait);  
  }  
}
```

From:

<https://chanterie37.fr/fablab37110/> - Castel'Lab le Fablab MJC de Château-Renault

Permanent link:

<https://chanterie37.fr/fablab37110/doku.php?id=start:arduino:max7219&rev=1786198919>

Last update: **2026/08/08 16:21**

