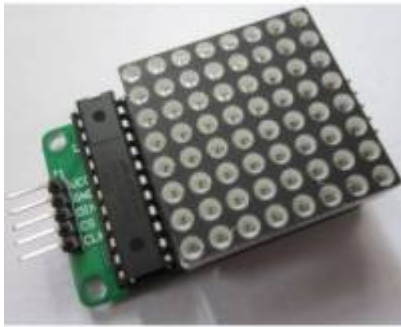


Tutoriels MAX7219 avec matrice 8X8



Liens web tuto MAX7219

- [Montage Kit MAX7219 EN](#)
- [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.

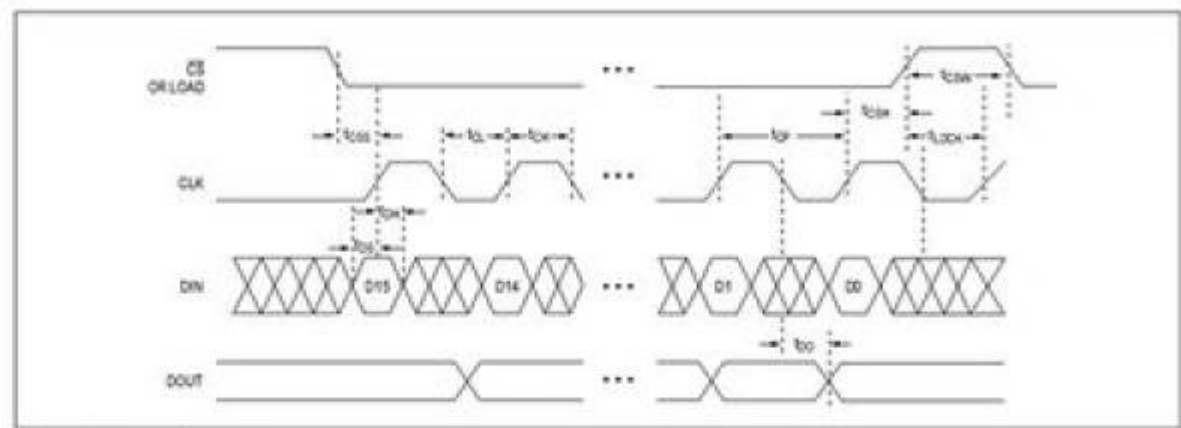


Figure 1. Timing Diagram

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+ = 5V ± 10%, RSET = 9.53kΩ ± 1%, TA = TMIN to TMAX, unless otherwise noted.)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
LOGIC INPUTS						
Input Current DIN, CLK, LOAD, CS	IIH, IIL	VIN = 0V or V+	-1		1	µA
Logic High Input Voltage	VIH		3.5			V
Logic Low Input Voltage	VIL				0.8	V
Output High Voltage	VOH	DOUT, ISOURCE = -1mA	V+ - 1			V
Output Low Voltage	VOL	DOUT, ISEAK = 1.6mA			0.4	V
Hysteresis Voltage	ΔVI	DIN, CLK, LOAD, CS		1		V
TIMING CHARACTERISTICS						
CLK Clock Period	tCP		100			ns
CLK Pulse Width High	tCH		50			ns
CLK Pulse Width Low	tCL		50			ns
CS Fall to SCLK Rise Setup Time (MAX7221 only)	tCSS		25			ns
CLK Rise to CS or LOAD Rise Hold Time	tCSH		0			ns
DIN Setup Time	tDS		25			ns
DIN Hold Time	tDH		0			ns
Output Data Propagation Delay	tDO	CLOAD = 50pF			25	ns
Load-Rising Edge to Next Clock Rising Edge (MAX7219 only)	tDCK		50			ns
Minimum CS or LOAD Pulse High	tCSW		50			ns
Data-to-Segment Delay	tDSPD				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 = 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);
}
```

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<https://chanterie37.fr/fablab37110/doku.php?id=start:arduino:max7219&rev=1753366897>

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