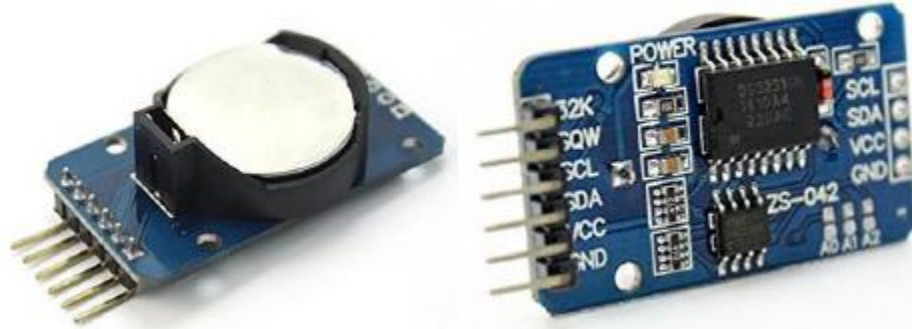# DS3231 Experiment

Overview

The module can achieve the clock function, alarm clock function, temperature function. This course teaches you how to use the DS3231 module clock function, the next lesson will teach you how to display the time and temperature on the LCD1602.
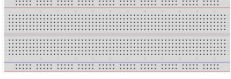
Specification

Please view DS3231-datasheet.pdf.
Path: \Public_materials\Datasheet\ DS3231-datasheet.pdf

Pin definition

DS3231	Arduino
32K	->null
SQW	->null
SCL	->A5
SDA	->A4
VCC	->5V
GND	->GND

Hardware required

Material diagram	Material name	Number
	DS3231	1
	USB Cable	1
	MEGA 2560	1
	Breadboard	1
	Jumper wires	Several

Connection

Schematic
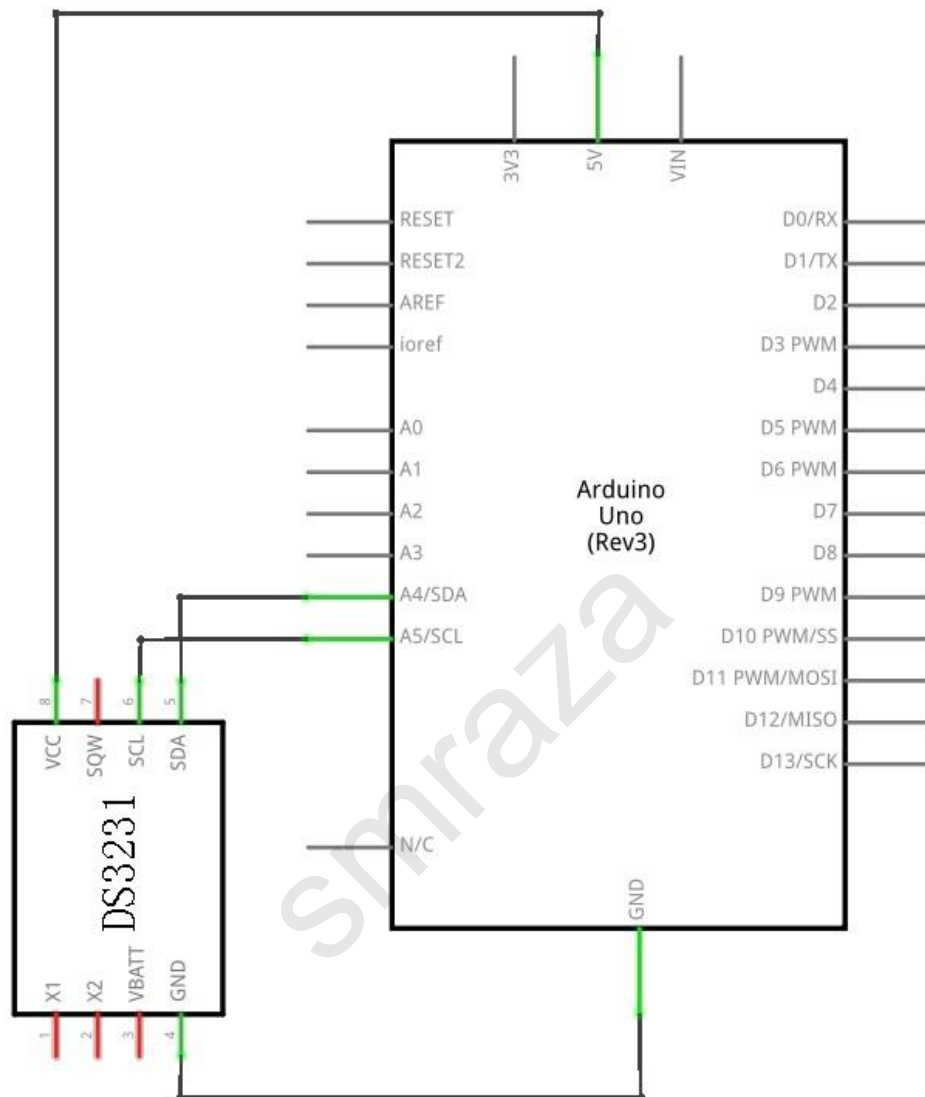
Connection diagram
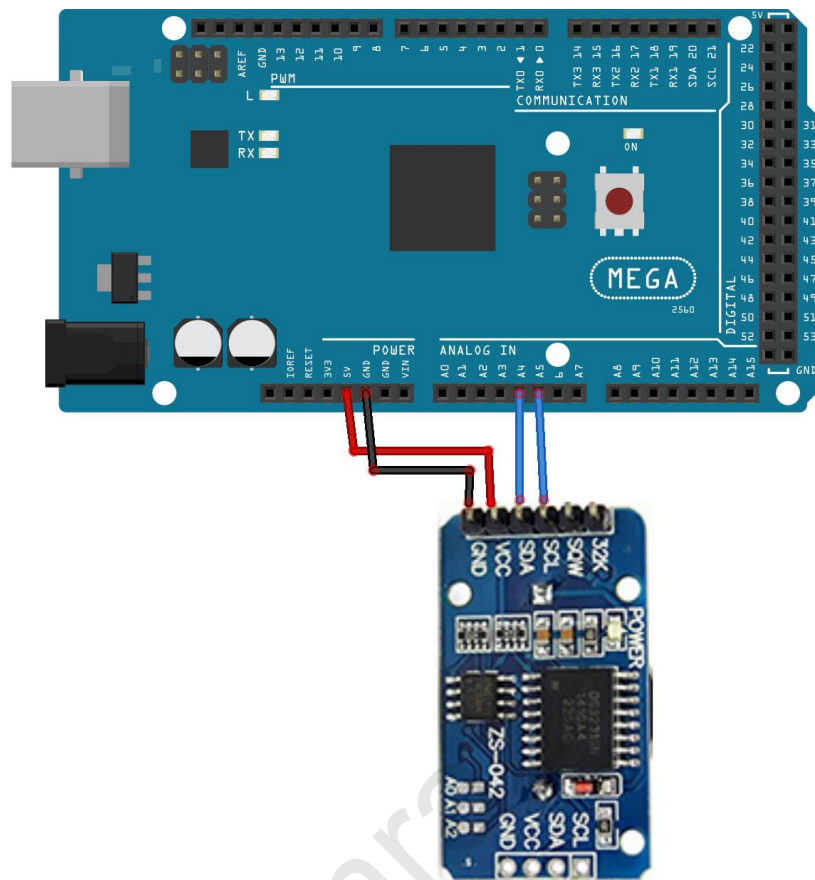
Sample code

Note: sample code under the **Sample code** folder
You need to add the DS3231 to the Arduino library file directory, otherwise the compiler does not pass. **Please refer to 'How to add library files.docx'.**

```
#include <DS3231.h>
#include <Wire.h>
//initialize variable
DS3231 Clock;
boolean Century=false;
boolean h12;
boolean PM;
byte ADay, AHour, AMinute, ASecond, ABits;
boolean ADy, A12h, Apm;
int second,minute,hour,date,month,year,val;
void setup(void)
{
    Wire.begin();
    Serial.begin(115200);
}

void ReadDS3231()
{
    int second,minute,hour,date,month,year,pm;
    second=Clock.getSecond();
    minute=Clock.getMinute();
    hour=Clock.getHour(h12,PM);
    date=Clock.getDate();
    month=Clock.getMonth(Century);
    year=Clock.getYear();
    Serial.print("20");
    Serial.print(year,DEC);
    Serial.print('-');
    Serial.print(month,DEC);
    Serial.print('-');
    Serial.print(date,DEC);
    Serial.print(' ');
    Serial.print(hour,DEC);
    Serial.print(':');
    Serial.print(minute,DEC);
    Serial.print(':');
    Serial.print(second,DEC);
    Serial.print('\n');
}
```

```
void loop()
{
    ReadDS3231();
    delay(150);
}
```

Example picture
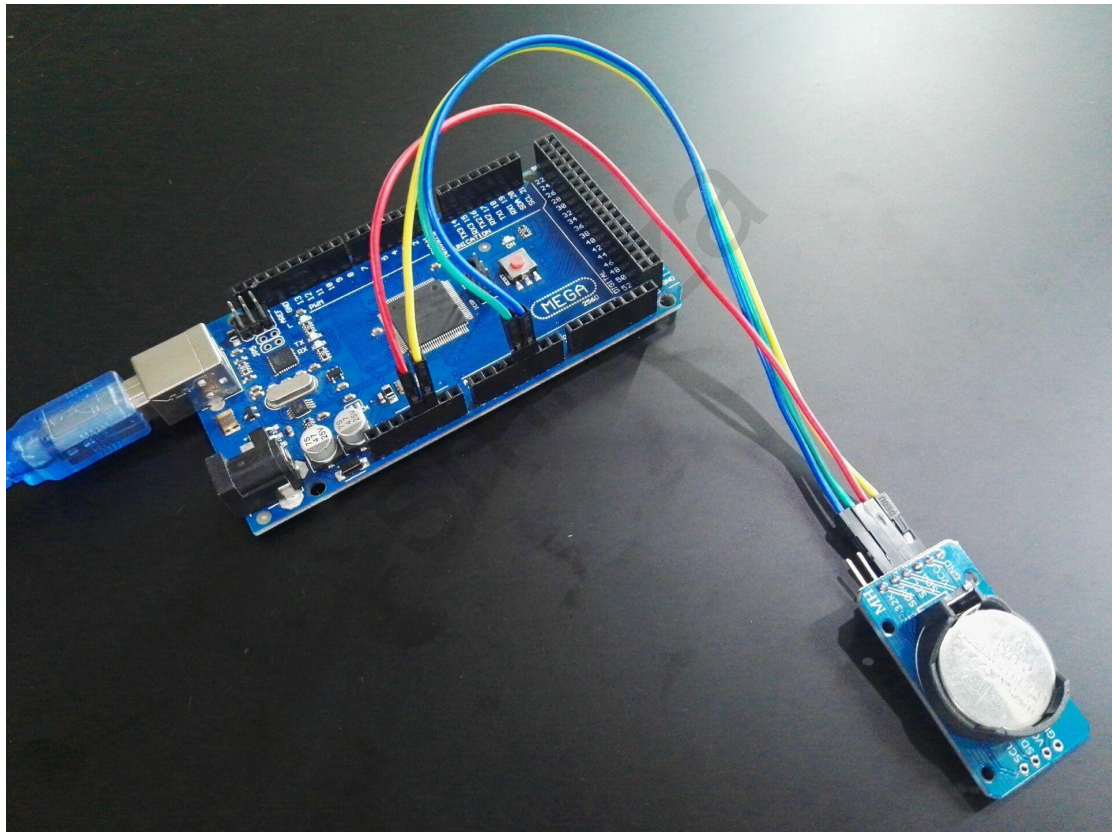
Result
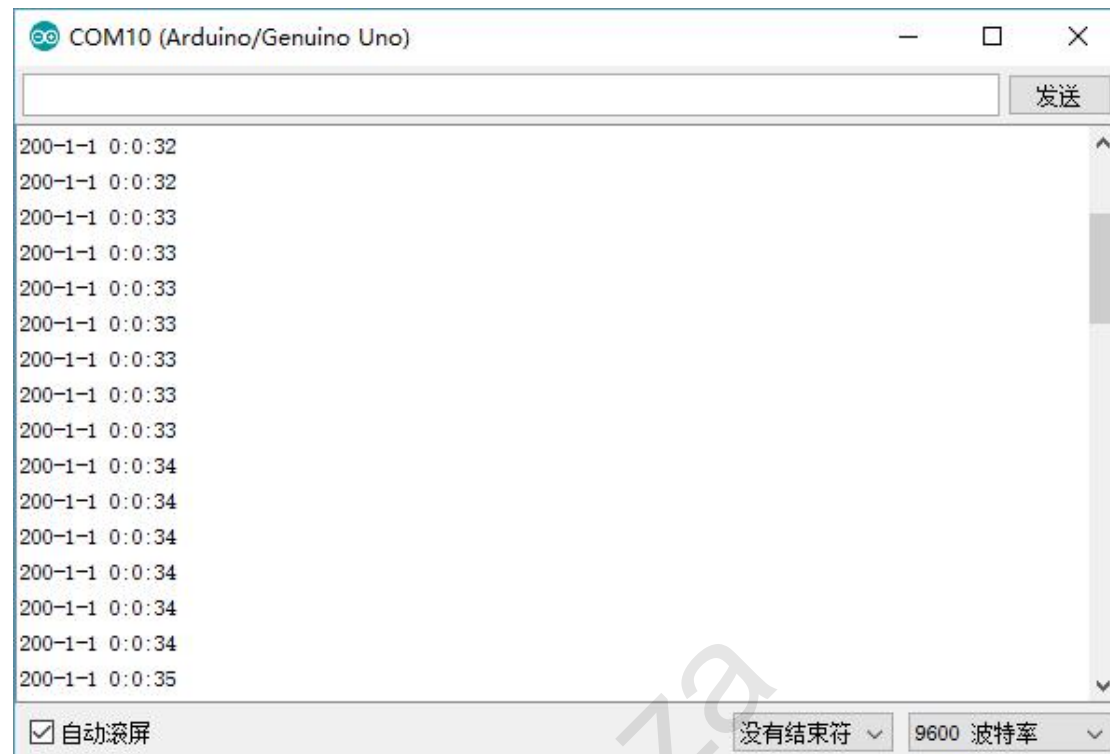
Language reference

Tips : click on the following name to jump to the web page.
If you fail to open, use the Adobe reader to open this document.
boolean
byte

Application effect

Open the serial port monitor, you will be able to see the time displayed on the serial port monitor.

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* About Smraza:
* We are a leading manufacturer of electronic components for Arduino and Raspberry Pi.
* Official website: http://www.smraza.com/
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Amazon US store: http://www.amazon.com/shops/smraza
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Amazon UK store: http://www.amazon.co.uk/shops/AVEAJYX3AHG8Q
Amazon DE store: http://www.amazon.de/shops/AVEAJYX3AHG8Q
Amazon FR store: http://www.amazon.fr/shops/AVEAJYX3AHG8Q
Amazon IT store: http://www.amazon.it/shops/AVEAJYX3AHG8Q
Amazon ES store: https://www.amazon.es/shops/AVEAJYX3AHG8Q
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