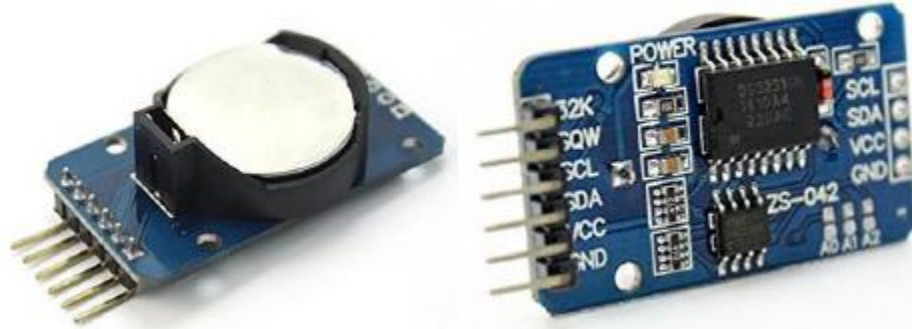# DS3231 Experiment

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.
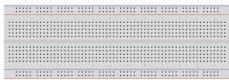
Specification

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
	UNO R3	1
	Breadboard	1
	Jumper wires	Several

Connection

Schematic

Connection diagram

Connection
DS3231 :
32K -> null
SQW -> null
SCL -> A5
SDA -> A4
VCC -> +5V
GND -> GND
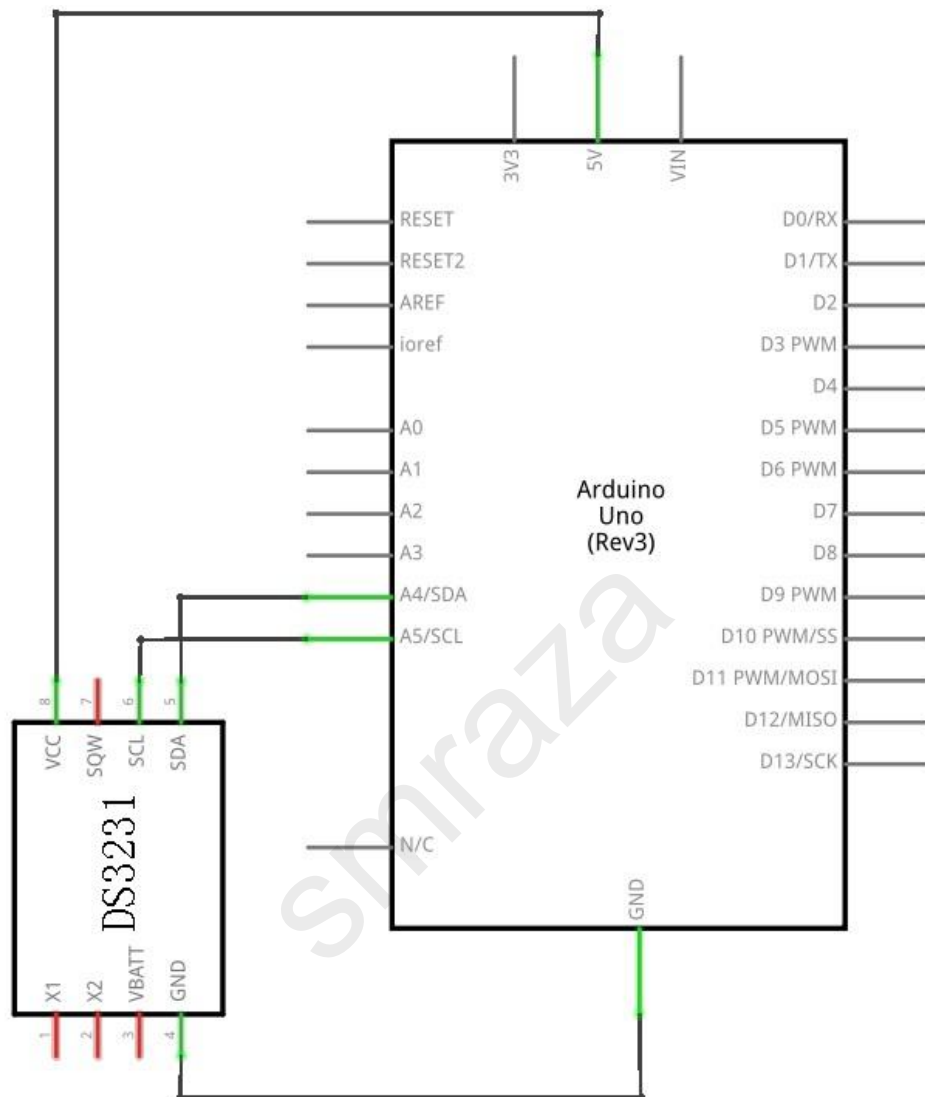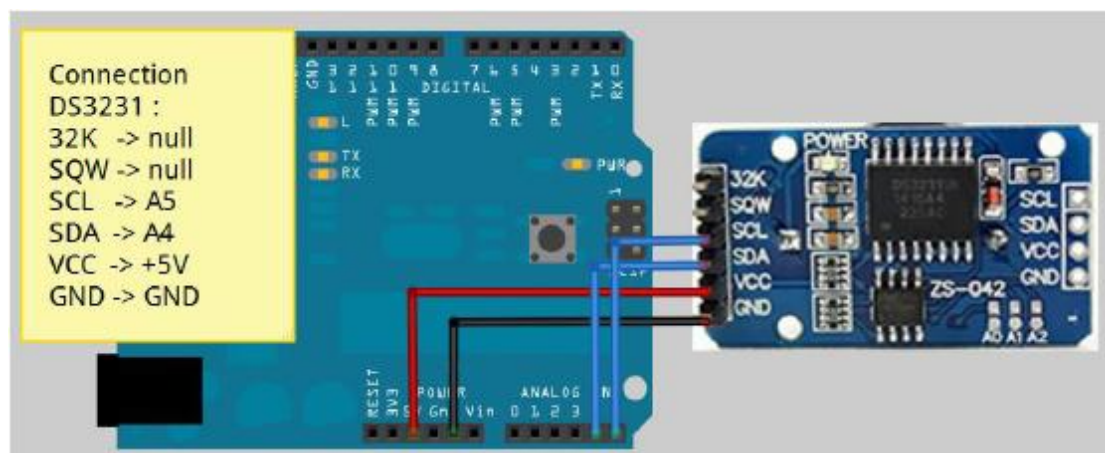
Sample code

Note: sample code under the **Sample code** folder

```cpp
#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

COM10 (Arduino/Genuino Uno)

发送

```
200-1-1 0:0:32
200-1-1 0:0:32
200-1-1 0:0:33
200-1-1 0:0:33
200-1-1 0:0:33
200-1-1 0:0:33
200-1-1 0:0:33
200-1-1 0:0:33
200-1-1 0:0:33
200-1-1 0:0:34
200-1-1 0:0:34
200-1-1 0:0:34
200-1-1 0:0:34
200-1-1 0:0:34
200-1-1 0:0:34
200-1-1 0:0:35
```

☑ 自动滚屏   没有结束符 ∨   9600 波特率 ∨
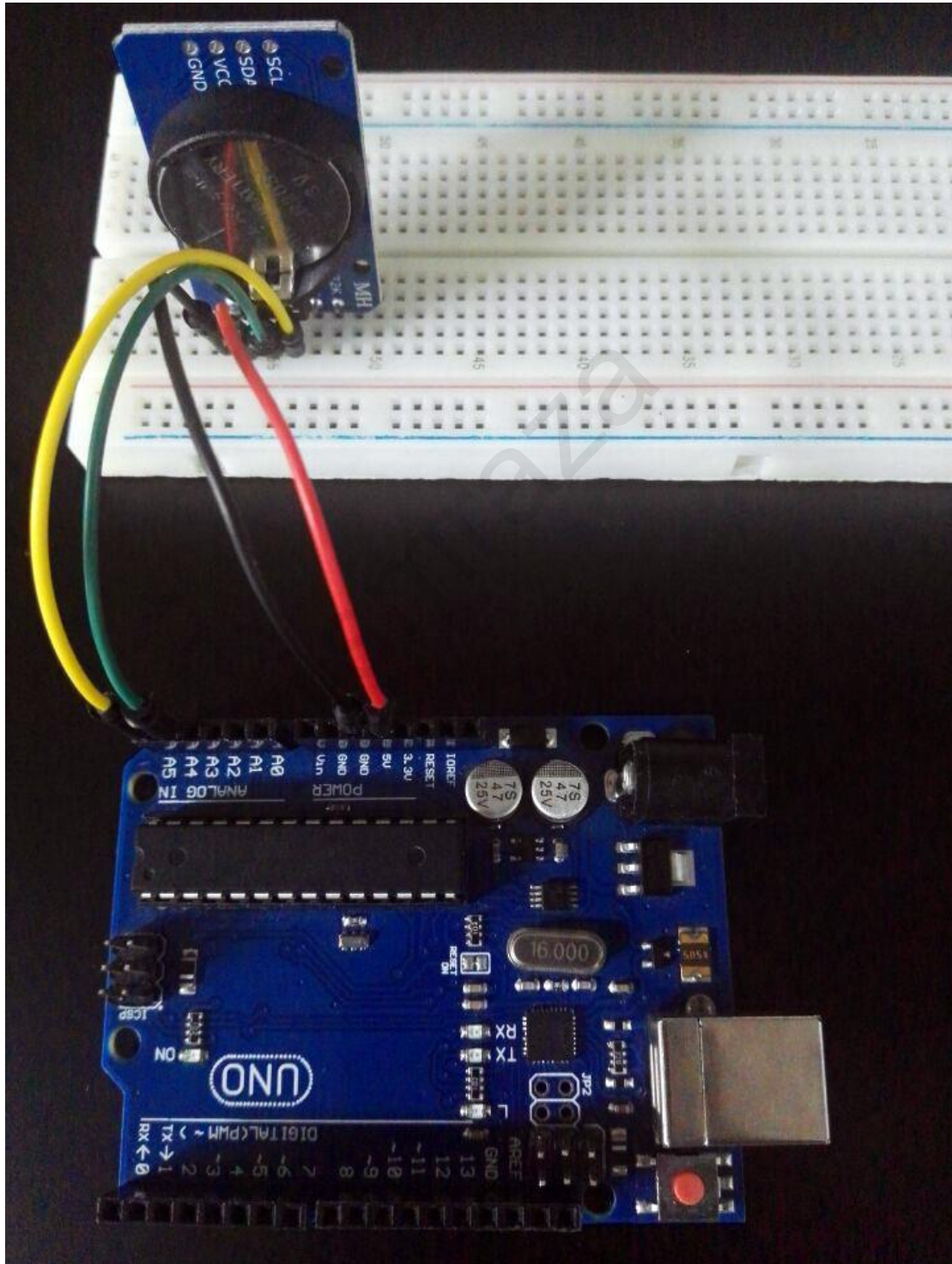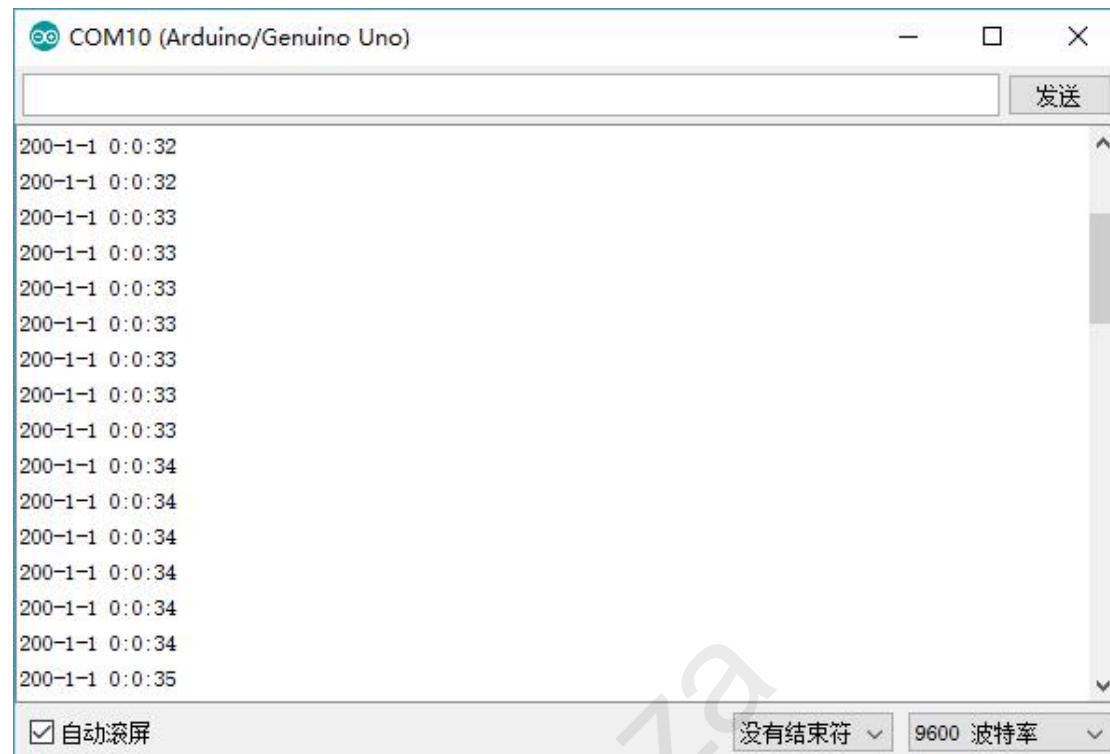
Language reference

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.

****

* About Smraza:

* We are a leading manufacturer of electronic components for Arduino and Raspberry Pi.

* Official website: http://www.smraza.com/

* We have a professional engineering team dedicated to providing tutorials and support to help you get started.

* If you have any technical questions, please feel free to contact our support staff via email at support@smraza.com

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Amazon IT store: http://www.amazon.it/shops/AVEAJYX3AHG8Q

Amazon ES store: https://www.amazon.es/shops/AVEAJYX3AHG8Q

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