

Raspberry Pi DS3231 Module



1) Overview:

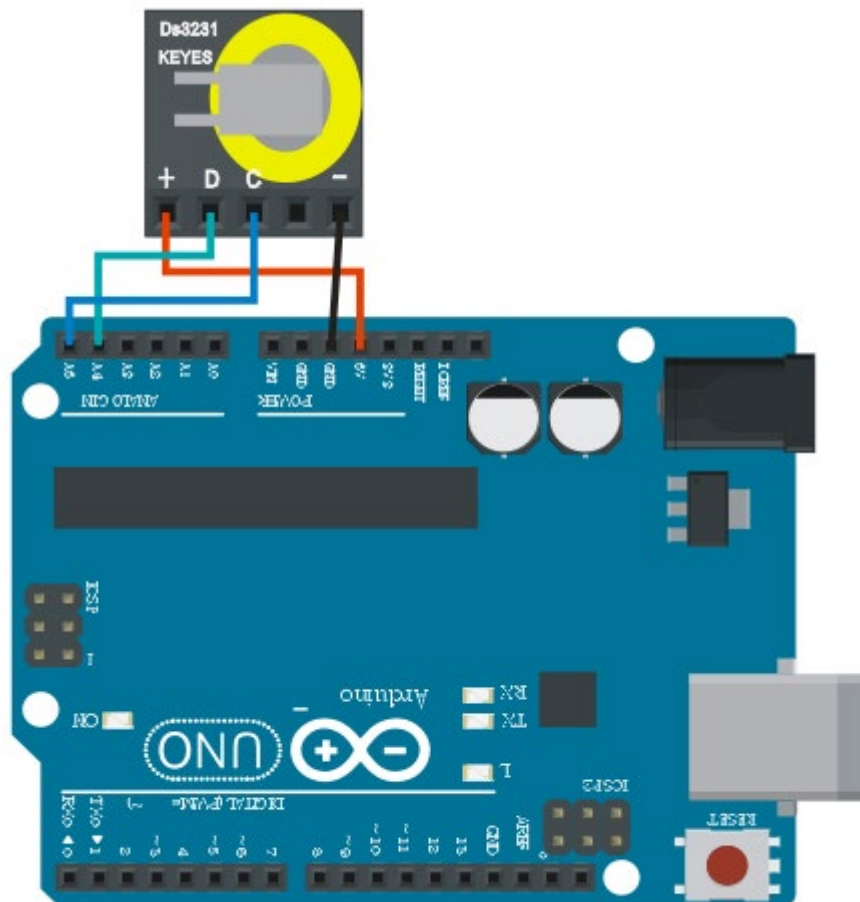
Raspberry Pi highest precision clock module DS3231. This module can also be used on the mainboard. The module itself can run on 3.3V and 5V systems without level conversion, which is super convenient!

2) Characteristics:

1. Within the temperature range of -40°C to $+85^{\circ}\text{C}$, the timing accuracy shall be maintained at $\pm 5\text{ppm}$ (± 0.432 seconds / day)
2. Provide battery backup for continuous timing
3. Low power consumption
4. The device package and function are compatible with DS3231
5. The complete clock calendar function includes second, minute, hour, week, date, month and annual timing, and provides leap year compensation valid until 2100
6. Two calendar alarm clocks
7. 1 Hz and 32.768 KHz output
8. Reset output and button debounce input
9. High speed (400 kHz) I2C serial bus
10. +2.3V to +5.5V supply voltage
11. Digital temperature sensor with accuracy of $\pm 3^{\circ}\text{C}$
12. -40°C to $+85^{\circ}\text{C}$ operating temperature range
13. 16-pin SO (300 mil) package

3) Module Test

This module adopts the IIC test method, so you only need to connect D on the module to Arduino A4, C to A5, + to VCC and - to GND, as shown in the figure below



Test program code: (copy/paste into your Arduino IDE)

```
// Date and time functions using a RX8025 RTC connected via I2C and Wire lib
```

```
#include <RTCLib.h>
```

```
RTC_DS3231 rtc; //Create the DS3231 object
```

```
char weekDay[][4] = {"Sun", "Mon", "Tue", "Wed", "Thu", "Fri", "Sat" }; /*year, month,
date, hour, min, sec and week-day(starts from 0 and goes to 6) //writing any non-
existent time-data may interfere with normal operation of the RTC.
Take care of week-day also.*/
```

```
DateTime dt(2023, 7, 27, 15, 05, 0);
```

```
/*Open the serial port to see the time here. Of course, it can also be modified to the
time you want here*/
```

```
void setup ()
```

```
{
  Serial.begin(57600); //Set baud rate to 57600
  Wire.begin();
  rtc.begin();
  rtc.adjust(dt); //Adjust date-time as defined 'dt' above
}
```

```
void loop ()
```

```
{
  DateTime now = rtc.now(); //get the current date-time
  Serial.print(now.year(), DEC);
  Serial.print('/');
  Serial.print(now.month(), DEC);
  Serial.print('/');
  Serial.print(now.day(), DEC);
  Serial.print(' ');
  Serial.print(now.hour(), DEC);
  Serial.print(':');
  Serial.print(now.minute(), DEC);
  Serial.print(':');
  Serial.print(now.second(), DEC);
  Serial.println();
  Serial.print(weekDay[now.dayOfTheWeek()]);
  Serial.println();
  delay(1000);
}
```

