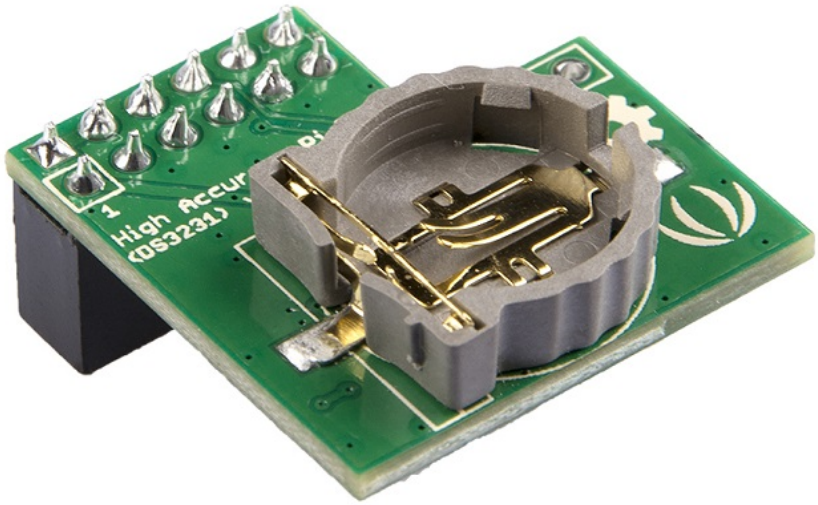
High Accuracy Pi RTC (DS3231) SKU:103030278



The High Accuracy Pi RTC is based on the clock chip DS3231, the DS3231 is a low-cost, extremely accurate I2C realtime clock (RTC). It can provide a real-time clock(RTC) for raspberry pi via the UART interface. With the clock source from the TCXO(temperaturecompensated crystal oscillator), the RTC provides seconds, minutes, hours, day, date, month, and year information. The date at the end of the month is automatically adjusted for months with fewer than 31 days, including corrections for leap year.The clock operates in either the 24-hour or 12-hour format with an AM/PM indicator.

The clock provides two programmable time-of-day alarms and a programmable square-wave output. The INT/SQW pin either generates an interrupt due to alarm condition or outputs a square-wave signal and the selection is controlled by the bit INTCN.

If you want to keep this module timing when the Raspberry Pi is powered off, you need to put a 3-Volt CR1225 lithium cell in the battery-holder.

Version

Product Version	Changes	Released Date
High Accuracy Pi RTC (DS3231)	Initial	Sep 2018

!!!Note The battery is not included.

Features

- Support Raspberry Pi 2/ 3 B/B+ Zero
- Suport seconds,minuutes,hours,day of week,month, year
- Support 24-hour or 12-hour format with AM/PM indicator
- Low-Power Consumption
- Two Time-of-Day Alarms
- Fast (400kHz) I2C Interface

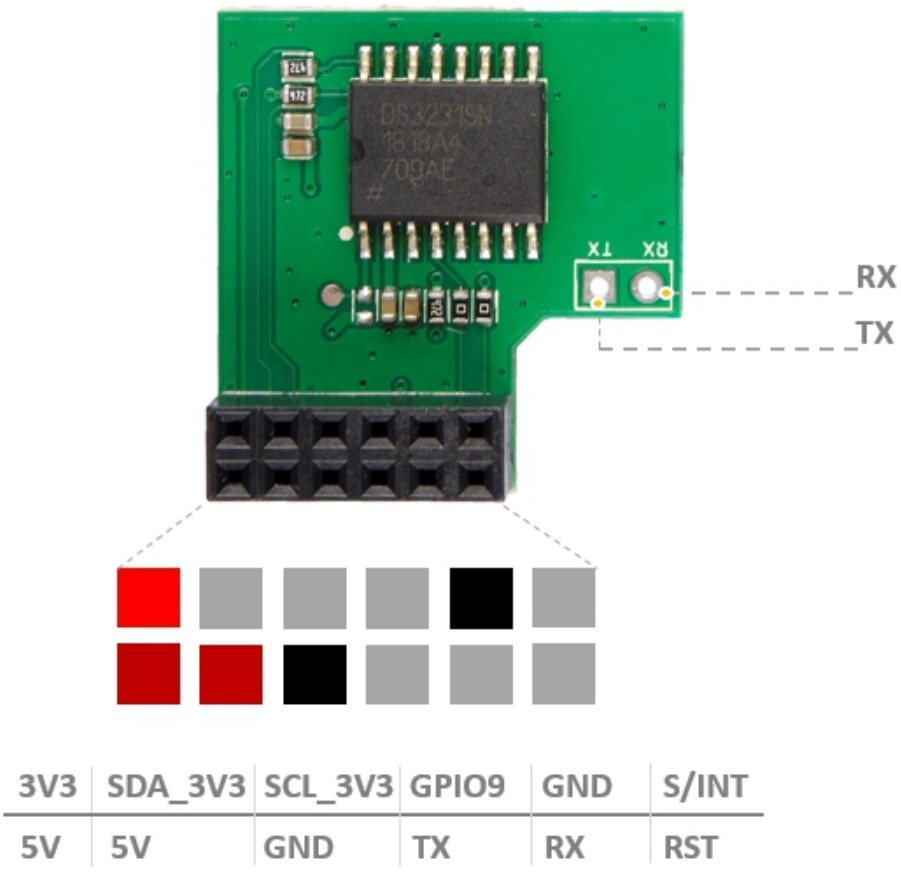
Specification

Item	Value
Operating Voltage	3.3V
Operating Temperature	0℃ to +70℃
Accuracy	±2ppm from 0°C to +40°C
Interface	I2C
I2C Address	0x68
Size	L: 25mm W: 25mm H: 8mm
Weight	4.2g
Package size	L: 85mm W: 75mm H: 25mm
Gross Weight	15g

Typical applications

Any applications need Real Time on Raspberry.

Pin Out



3V3	SDA_3V3	SCL_3V3	GPIO9	GND	S/INT
5V	5V	GND	TX	RX	RST

!!!Note 1- The chip itself supports the alarm function, we also reserved the relevant hardware interface, but our software library does not include this function(S/INT pin), you need to carry out related software development.

```
    2- RX/TX is not used in this module, but the 6x2 header takes up the RX/TX pin
of the Raspberry Pi, so we bring the RX/TX out and come with a 2pin header.
```

Platforms Supported

Arduino	Raspberry Pi	BeagleBone	Wio	LinkIt ONE
TO DO		TO DO	TO DO	TO DO

Materials required

Raspberry Pi	High Accuracy Pi RTC(DS3231)

Raspberry Pi	High Accuracy Pi RTC(DS3231)
	

!!!note Please plug the USB cable gently, otherwise you may damage the port. Please use the USB cable with 4 wires inside, the 2 wires cable can't transfer data. If you are not sure about the wire you have, you can click here to buy

Install

The driver we provide only applied for Raspbian Jessie/Stretch.

!!!Tip If you do not know how to use a raspberry pi, please check here before start.

- **Step 1. Driver Installation**

Tap the following command in your terminal

```
git clone https://github.com/Seeed-Studio/pi-hats.git
```

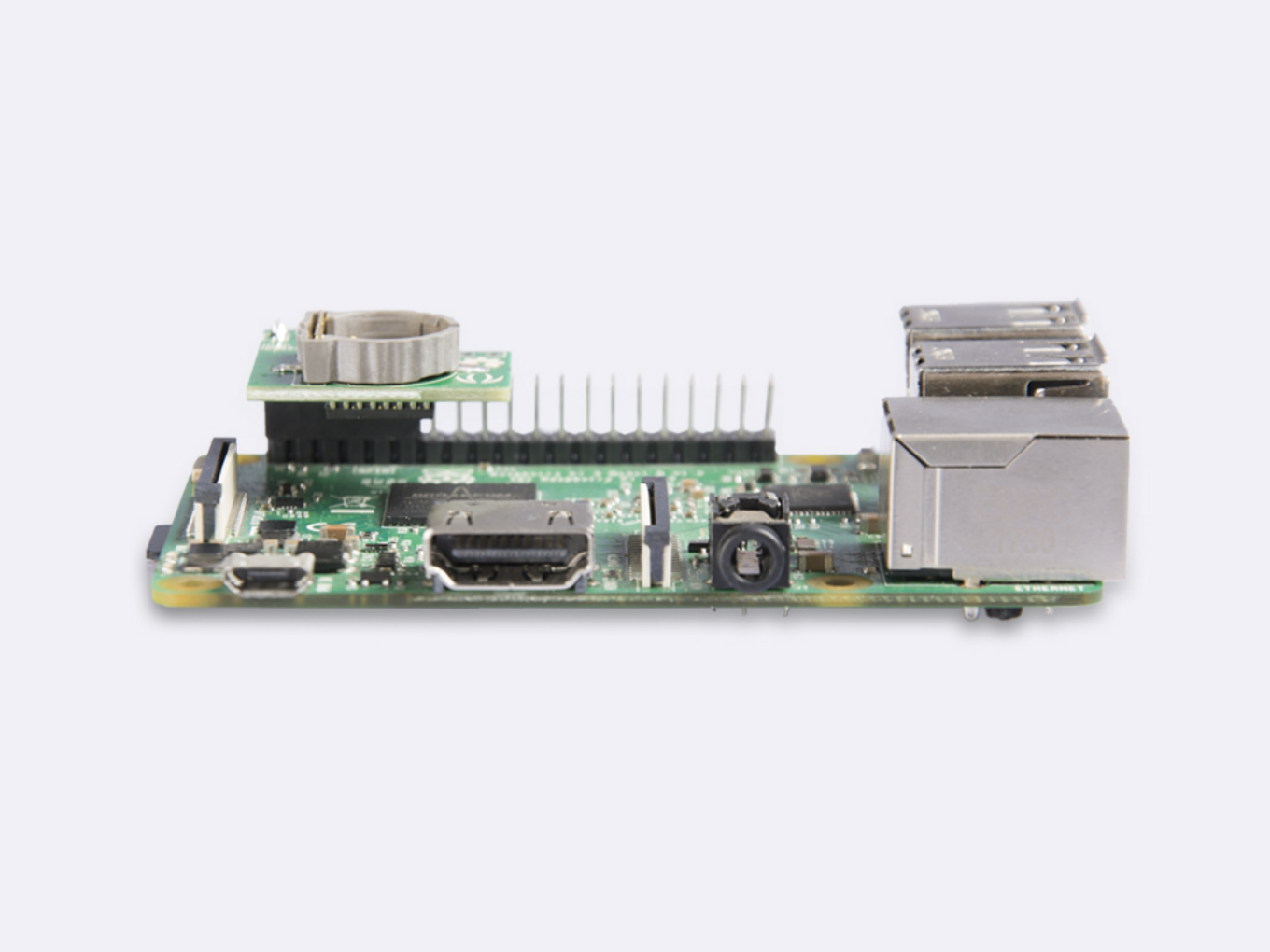
When the download finish, tap the following command in your terminal

```
cd pi-hats
sudo ./install.sh -u rtc_ds3231
```

- **Step 2. Power off Raspberry Pi**

```
sudo shutdown -h now
```

- **Step 3. Insert the HAT to Raspberry Pi**



Please make sure plug the pin 1 of this hat into the pin 1 of raspberry GPIO, just like the picture above.

- **Step 4. Power up Raspberry Pi**

Usage

Now you can use the command to check whether the driver is installed successfully.

```
./install.sh -l
```

If you want to uninstall the driver you can use the command below:

```
sudo ./install.sh -u
```

Now let's see what the RTC module can do:

Read hardware clock and print result

```
sudo hwclock -r
```

Set the system time from the hardware clock

```
sudo hwclock -s
```

Set the hardware clock from the current system time

```
sudo hwclock -w
```

More usage

```
hwclock --help
```

Resources

- **[Zip]** High Accuracy Pi RTC(DS3231) Eagle Files
- **[http]** Seeed Pi RTC Library
- **[PDF]** Datasheet DS3231

Project

This is the introduction Video of this product

Tech Support

Please do not hesitate to submit the issue into our forum