Introduction

RTC WatchDog HAT For Raspberry Pi, Auto Reset, High Precision RTC.

More

RTC WatchDog HAT

- MAX705 monitoring circuit with auto reset function.
- Incorporates DS3231SN high precision RTC chip, with backup battery holder.
- Reset pin selection for switching watchdog.
- Indicator for watchdog output warning.

Parameters

- RTC Communication Interface: I2C
- RTC Chip: DS3231
- WatchDog Chip: MAX705
- Power Supply: 5V
- Dimensions: 30.5mm x 65mm
- Mounting Hole Diameter: 3.0mm

How to use

Working With Raspberry Pi

PS: The system of the Bullseye branch only supports Python3.

RTC

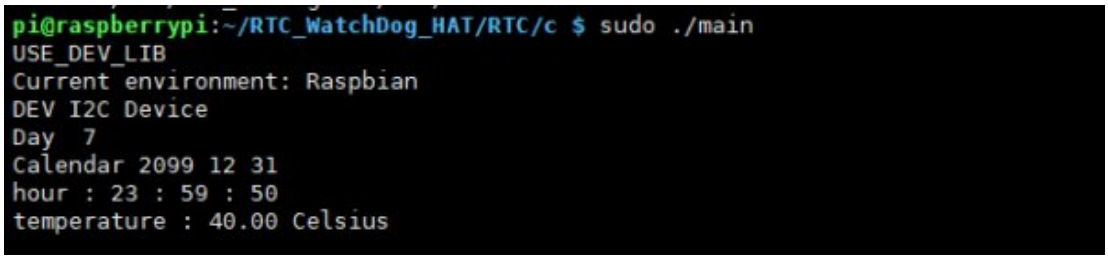
Open a terminal and run the following command to download the demos.

```
sudo apt-get install p7zip-full
wget https://files.waveshare.com/upload/b/bd/RTC_WatchDog_HAT.zip
7z x -tzip -y RTC_WatchDog_HAT.zip -o./RTC_WatchDog_HAT
sudo chmod 777 -R RTC_WatchDog_HAT
```

```
cd RTC_WatchDog_HAT/RTC
```

C Example

```
cd ~/RTC_WatchDog_HAT/RTC/c/
make clean
make
sudo ./main
```



Python Example

```
cd python/examples/
sudo python main.py
```

Add Kernel Mode Driver

Note that with this method, you cannot use the above sample demo.
Modify /boot/config.txt and add the following commands at the end:

```
 dtoverlay=i2c-rtc,ds3231
```

Hwclock is simple to use

Synchronize System Clock -> Hardware Clock.

```
sudo hwclock -w
```

Synchronize Hardware Clock -> System Clock.

```
sudo hwclock -s
  #Need to close the network or close the network time, otherwise, it will be changed back.
```

Set the hardware clock time:

```
sudo hwclock --set --date="9/8/2021 16:45:05"
```

View the hardware clock.

```
sudo hwclock -r
```

Display version information.

```
sudo hwclock --verbose
```

WatchDog

In the WatchDog example, it feeds the watchdog chip if the D4 pin toggle. If the watchdog doesn't be feed in T time, it will cut off the power and the voltage falls to 1.25V, in this case, the MAX705 chip will reset and restart the power. About the time T:

```
T = 0.7*R*C+1.6s
```

R is default 5.1M, and C is default 44uF.

Tge default delay time is 157.08s ±6%.

RC are set in the board:

Working With Horizon Sunrise Pi X3

RTC

Download the sample demo, extract it to a specified directory, and run the sample demo:

```
sudo apt-get install p7zip-full
wget https://files.waveshare.com/upload/f/fe/X3PI_RTC_WatchDog_HAT.zip
7z x -tzip -y X3PI_RTC_WatchDog_HAT.zip -o./X3PI_RTC_WatchDog_HAT
sudo chmod 777 -R X3PI_RTC_WatchDog_HAT
cd X3PI_RTC_WatchDog_HAT/RTC
```

C

```
cd c/
make clean
make
sudo ./main
```

```
sunrise@ubuntu:~/X3PI_RTC_WatchDog_HAT/RTC/c$ sudo ./main
USE_DEV_LIB
Current environment: Ubuntu
```

```
DEV I2C Device
Day  7
Calendar 2099 12 31
hour : 23 : 59 : 50
temperature : 33.00 Celsius
```

Python

```
cd python/examples/
sudo python main.py
```

```
sunrise@ubuntu:~/X3PI_RTC_WatchDog_HAT/RTC/python/examples$ sudo python3 main.py
Day Sat
[2099, 12, 31]
hour : 23 : 59 : 50
hour : 23 : 59 : 50
temperature : 33.00 Celsius
```

Resource

Documentation

- Schematic
- Schematic V2
- RTC WatchDog HAT 3D drawing
- MAX705 Datasheet
- DS3231 Datasheet

Demo codes

- Raspberry Pi demo
- Horizon Sunrise X3 Pi demo

Support

Technical Support

If you need technical support or have any feedback/review, please click the **Submit Now** button to submit a ticket, Our support team will check and reply to you within 1 to 2 working days. Please be patient as we make every effort to help you to resolve the issue.
Working Time: 9 AM - 6 AM GMT+8 (Monday to Friday)

Submit Now