deveth0 / Alarm_Demo.ino

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Arduino Demonstration of an alarm triggered by a DS3231 RTC

Alarm_Demo.ino

```
/**
 *  Sets an alarm using a DS3231 device, goes to sleep and wakes up again
 * @author: dev-eth0
 * @url: https://www.dev-eth0.de/
 */

#include <DS3231.h> // https://github.com/NorthernWidget/DS3231
#include <Wire.h>
#include <LowPower.h> // https://github.com/rocketscream/Low-Power

DS3231 Clock;

// Some static test-date for the RTC
byte Year = 2017;
byte Month = 9;
byte Date = 17;
byte Hour = 19;
byte Minute = 29;
byte Second = 30;

// Interrupt Pin used
static const byte wakeUpPin = 2;


// Those are the ALARM Bits that can be used
// They need to be combined into a single value (see below)
// Found here: https://github.com/mlepard/ArduinoChicken/blob/master/roboCoop/alarmControl.ino
#define ALRM1_MATCH_EVERY_SEC  0b1111  // once a second
#define ALRM1_MATCH_SEC        0b1110  // when seconds match
#define ALRM1_MATCH_MIN_SEC    0b1100  // when minutes and seconds match
#define ALRM1_MATCH_HR_MIN_SEC 0b1000  // when hours, minutes, and seconds match

#define ALRM2_ONCE_PER_MIN     0b111   // once per minute (00 seconds of every minute)
#define ALRM2_MATCH_MIN        0b110   // when minutes match
#define ALRM2_MATCH_HR_MIN     0b100   // when hours and minutes match


int ledState = HIGH;

```

```
39  void setup() {
40    // Start the serial port
41    Serial.begin(115200);
42    Serial.println("Alarm Test");
43
44    // Configure Interrupt Pin
45    pinMode(wakeUpPin, INPUT_PULLUP);
46    digitalWrite(wakeUpPin, HIGH);
47
48    // Start the I2C interface
49    Wire.begin();
50
51    // Set time
52    Clock.setClockMode(false);
53    Clock.setYear(Year);
54    Clock.setMonth(Month);
55    Clock.setDate(Date);
56    Clock.setHour(Hour);
57    Clock.setMinute(Minute);
58    Clock.setSecond(Second);
59
60    // Set alarm
61    Serial.println("Setting alarm");
62
63    // This is the interesting part which sets the AlarmBits and configures, when the Alarm be tr
64    byte ALRM1_SET = ALRM1_MATCH_MIN_SEC; // trigger A1 when minute and second match
65    byte ALRM2_SET = ALRM2_MATCH_MIN;     // trigger A2 when minute matches (and second is 0 as A
66
67    // combine the AlarmBits
68    int ALARM_BITS = ALRM2_SET;
69    ALARM_BITS <<= 4;
70    ALARM_BITS |= ALRM1_SET;
71
72    // Trigger Alarm when Minute == 30 or 0
73    // Clock.setA1Time(Day, Hour, Minute, Second, AlarmBits, DayOfWeek, 12 hour mode, PM)
74    Clock.setA1Time(0, 0, 0, 0, ALARM_BITS, false, false, false);
75    // Clock.setA2Time(Day, Hour, Minute, AlarmBits, DayOfWeek, 12 hour mode, PM)
76    Clock.setA2Time(0, 0, 30, ALARM_BITS, false, false, false);
77
78    // Turn on Alarm
79    Clock.turnOnAlarm(1);
80    Clock.turnOnAlarm(2);
81
82    Serial.println(ALARM_BITS, BIN);
83    Serial.println("Alarm 1:");
84    Serial.println(Clock.checkAlarmEnabled(1));
85    Serial.println("Alarm 2:");
86    Serial.println(Clock.checkAlarmEnabled(2));
87
88    // Attach interrupt
89    attachInterrupt(digitalPinToInterrupt(wakeUpPin), wakeUp, FALLING);
90
```

```
  // sleep
  delay(500);
  LowPower.powerDown(SLEEP_FOREVER, ADC_OFF, BOD_OFF);
}

// loop is started once the device wakes up again
void loop() {
  blinkLED();
  delay(1000);
}

void blinkLED() {
  if (ledState == LOW) {
    ledState = HIGH;
  } else {
    ledState = LOW;
  }
  digitalWrite(LED_BUILTIN, ledState);
}

void wakeUp() {
  // wake up again
  Serial.println("Woke up this morning...");
}
```

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manuelescotech commented on 12 Aug 2019

Hi,
I am trying to run the above code to set an alarm so that the DS3231 will wake the Uno once an hour.
However when I try to verify the code I get a "no matching function for call to 'DS3231::DS3231()'.
You can probably tell from my question that I'm a compete novice at this.
Can anyone shed some light?
Thanks in advance.

deveth0 commented on 14 Aug 2019 • edited

Can you please double check, if you imported the correct library? There are multiple ds3232 libs available that all work different.

manuelescotech commented on 14 Aug 2019

Thanks deveth0.
There are so many different libs it's really confusing.
I tried to download the one specified in the code: https://github.com/NorthernWidget/DS3231 however it wouldn't unpack from zip so I had to do it manually.
Now at least the code verifies..

Now I have another issue...Sorry.

I run the code and this is what I get..
Alarm Test
Setting alarm
1101100
Alarm 1:
1
Alarm 2:
1
It doesn't wake up after 30 seconds.
If I toggle the interrupt wire myself it does.

All I want to do is:

1. Set the time on the RTC once to real time.
2. Set an interrupt to wake the uno every hour so take some voltage readying, GPS reading, send it via SIGFOX and then go to sleep.
   I'm really new at this and can't seem to get this going.

manuelescotech commented on 14 Aug 2019

Also the voltage on the interrupt pin is always low.

deveth0 commented on 14 Aug 2019

OK, that might mean, that you do use the wrong interrupt pin. In the example I use pin 2, can you please check, if this is the same as in your case? Probably an picture would also help.

manuelescotech commented on 14 Aug 2019

Thanks Alex. I do use D2 for the interrupt. If I remove the wire from SQW to D2, SQW is low and D2 has 5V. I reconnect. If I toggle D2 then “woke up this morning “ prints on serial monitor. Otherwise nothing else seems to happen. However the LED does blink and keeps blinking. So the RTC isn’t triggering the interrupt. From: Manuel Escobar JOYQUIP 0452 303 726 Manuel@escotech.com.au
...
_____ From: Alex Muthmann <notifications@github.com> Sent: Wednesday, August 14, 2019 9:15:26 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino OK, that might mean, that you do use the wrong interrupt pin. In the example I use pin 2, can you please check, if this is the same as in your case? Probably an picture would also help.

— You are receiving this because you commented. Reply to this email directly, view it on GitHub<https://gist.github.com/796afa5d35a6c9d79e30008938d42e4e?email_source=notifications&email_token=AM4GXVXXSIN7CFHGFMMTSSLQEPSM5A5CNFSM4ILA6QH2YY3PNVWWK3TUL52HS4DFVNDWS43UINXW23LFNZ2KUY3PNVWWK3TUL5UWJTQAFXAB2#gistcomment-2998301>, or mute the thread<https://github.com/notifications/unsubscribe-auth/AM4GXVULDGIETKWJSDJAJKTQEPSM5ANCNFSM4ILA6QHQ>.

manuelescotech commented on 14 Aug 2019

What I don't understand is after it goes to wakeUp why it doesn't go back to sleep. It goes to blinkLED. From: Manuel Escobar JOYQUIP 0452 303 726 Manuel@escotech.com.au

...

_____ From: Alex Muthmann <notifications@github.com> Sent: Wednesday, August 14, 2019 9:15:26 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino OK, that might mean, that you do use the wrong interrupt pin. In the example I use pin 2, can you please check, if this is the same as in your case? Probably an picture would also help. — You are receiving this because you commented. Reply to this email directly, view it on GitHub<https://gist.github.com/796afa5d35a6c9d79e30008938d42e4e?email_source=notifications&email_token=AM4GXVXXSIN7CFHGFMMTSSLQEPSM5A5CNFSM4ILA6QH2YY3PNVWWK3TUL52HS4DFVNDWS43UINXW23LFNZ2KUY3PNVWWK3TUL5UWJTQAFXAB2#gistcomment-2998301>, or mute the thread<https://github.com/notifications/unsubscribe-auth/AM4GXVULDGIETKWJSDJAJKTQEPSM5ANCNFSM4ILA6QHQ>.

deveth0 commented on 14 Aug 2019

The loop function is the one, that is automatically run when the arduino is awake. Therefore it will run after setup (see arduino docs: https://www.arduino.cc/reference/en/language/structure/sketch/loop)

In my example, you let the arduino sleep and then wakeUp is called. Afterwards the Arduino is awake and will run the loop. If you want to sleep again, you'll need to either powerDown again in wakeUp or the loop.
Did you change the Times that are configured here?

manuelescotech commented on 14 Aug 2019

I have managed to add a second sleep routine in the loop. Thank you. Now all in need is for the RTC to trigger the interrupt. From: Manuel Escobar JOYQUIP 0452 303 726 Manuel@escotech.com.au

...

_____ From: Alex Muthmann <notifications@github.com> Sent: Wednesday, August 14, 2019 10:51:58 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino The loop function is the one, that is automatically run when the arduino is awake. Therefore it will run after setup (see arduino docs: https://www.arduino.cc/reference/en/language/structure/sketch/loop) In my example, you let the arduino sleep and then wakeUp is called. Afterwards the Arduino is awake and will run the loop. If you want to

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manuelescotech commented on 15 Aug 2019

Hi Alex, The SQW on the RTC is low. Should it be? If so should it go high and then back low to trigger the uno? I just can't get the RTC to alarm and trigger the uno. I haven't changed any part of the code. If you have a minute a would really appreciate advise. Thanks mate. From: Manuel Escobar JOYQUIP 0452 303 726 Manuel@escotech.com.au

...

_____ From: Alex Muthmann <notifications@github.com> Sent: Wednesday, August 14, 2019 10:51:58 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino The loop function is the one, that is automatically run when the arduino is awake. Therefore it will run after setup (see arduino docs: https://www.arduino.cc/reference/en/language/structure/sketch/loop) In my example, you let the arduino sleep and then wakeUp is called. Afterwards the Arduino is awake and will run the loop. If you want to sleep again, you'll need to either powerDown again in wakeUp or the loop. Did you change the Times that are configured here? — You are receiving this because you commented. Reply to this email directly, view it on GitHub<https://gist.github.com/796afa5d35a6c9d79e30008938d42e4e?email_source=notifications&email_token=AM4GXVTJQR2PXVJTW4RJDV3QEP5W5A5CNFSM4ILA6QH2YY3PNVWWK3TUL52HS4DFVNDWS43UINXW23LFNZ2KUY3PNVWWK3TUL5UWJTQAFXAGC#gistcomment-2998369>, or mute the thread<https://github.com/notifications/unsubscribe-auth/AM4GXVTO4SD5XRK2ADMZ6OTQEP5W5ANCNFSM4ILA6QHQ>.

deveth0 commented on 15 Aug 2019

Is there anything happening on the rtc after the times have been set? For me it sounds like either an incompatible rtc or probably a broken one.

manuelescotech commented on 15 Aug 2019

I have 2 RTC and have tried both. Same thing happens. By the way, what part of the world are you at? Manuel Escobar [cid:e8b10a3d-5904-424e-ad48-a1bf323481da] M: +61 452 303 726 E: manuel@escotech.com.au<mailto:manuel@escotech.com.au> W: www.escotech.com.au<http://www.escotech.com.au/>

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_____ From: Alex Muthmann <notifications@github.com> Sent: Thursday, 15 August 2019 6:32 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino Is there anything happening on the rtc after the times have been set? For me it

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deveth0 commented on 15 Aug 2019

Hm weird. Both rtc from the same distributor? I'm from Europe

manuelescotech commented on 15 Aug 2019

Ok so I disconnected the battery from the RTC. Ran the code and measured 5V on the SQW pin. and sure enough, 30 seconds later it triggered the Uno. The SQW pin goes low and stays low regardless of how many times I run the code. Then if I disconnect the USB and run the code, 5V on SQW and again, 30 seconds later it interrupts and stays low. How do I get the SQW to go back high so that another 30 seconds goes by and it triggers again? So it's sort of working. is this the way it is supposed to work or am I loosing it? Manuel Escobar [cid:4d4584e7-0d0e-4eb1-b67d-ff480b4d86b1] M: +61 452 303 726 E: manuel@escotech.com.au<mailto:manuel@escotech.com.au> W: www.escotech.com.au<http://www.escotech.com.au/>
...
_____ From: Alex Muthmann <notifications@github.com> Sent: Thursday, 15 August 2019 7:42 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino Hm weird. Both rtc from the same distributor? I'm from Europe — You are receiving this because you commented. Reply to this email directly, view it on GitHub<https://gist.github.com/796afa5d35a6c9d79e30008938d42e4e?email_source=notifications&email_token=AM4GXVS26KIPM6BUVFP2UGDQEUQJPA5CNFSM4ILA6QH2YY3PNVWWK3TUL52HS4DFVNDWS43UINXW23LFNZ2KUY3PNVWWK3TUL5UWJTQAFXB3C#gistcomment-2999217>, or mute the thread<https://github.com/notifications/unsubscribe-auth/AM4GXVXFP26HABGSVB3TKT3QEUQJPANCNFSM4ILA6QHQ>.

deveth0 commented on 15 Aug 2019

Ahh OK, that's a completely new use case. The example just triggers once at a defined time.

If you want to trigger an alarm after 30 seconds, you need to set the time again. There are multiple get methods which allow you to get the time from your rtc, then add 30s and set alarm 1 again.

manuelescotech commented on 15 Aug 2019

Oh ok. So I should be able to set the RTC with the correct time and never set it again (battery dependant) Then send the unit out in the field and with a reed switch connected to the interrupt pin, wake the uno

up. Get the time from the RTC, do what ever reading i need, set the RTC alarm, sleep the uno. Then when the RTC triggers the uno up, get the time, do the readings, set the alarm for another hour and put uno to sleep, and repeat this over and over again. Manuel Escobar [cid:50002931-e50b-46e2-9a92-78d97cab445e] M: +61 452 303 726 E: manuel@escotech.com.au<mailto:manuel@escotech.com.au> W: www.escotech.com.au<http://www.escotech.com.au/>

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_____ From: Alex Muthmann <notifications@github.com> Sent: Thursday, 15 August 2019 7:55 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino Ahh OK, that's a completely new use case. The example just triggers once at a defined time. If you want to trigger an alarm after 30 seconds, you need to set the time again. There are multiple get methods which allow you to get the time from your rtc, then add 30s and set alarm 1 again. — You are receiving this because you commented. Reply to this email directly, view it on GitHub<https://gist.github.com/796afa5d35a6c9d79e30008938d42e4e?email_source=notifications&email_token=AM4GXVW2RFTEVDPF4K6MXOTQEURYBA5CNFSM4ILA6QH2YY3PNVWWK3TUL52HS4DFVNDWS43UINXW23LFNZ2KUY3PNVWWK3TUL5UWJTQAFXB32#gistcomment-2999229>, or mute the thread<https://github.com/notifications/unsubscribe-auth/AM4GXVRAW6F5TLEH34PB6ATQEURYBANCNFSM4ILA6QHQ>.

deveth0 commented on 15 Aug 2019

Exactly. You could also get a GPS device and use this as time source :)

manuelescotech commented on 15 Aug 2019

yes I was thinking of using the GPOS module I am incorporating in my project to set the time to the RTC once a day for more accuracy. As I mentioned, I am a novice at this and I guess I'm trying to be a little ambitious with my project. Is the Loop the only thing that runs every time the Uno wakes up? All the stuff before it is just setting it up right? So therefore I must reset the timer in the loop. Manuel Escobar [cid:65774a38-af12-420c-a0a6-e92d9d907222] M: +61 452 303 726 E: manuel@escotech.com.au<mailto:manuel@escotech.com.au> W: www.escotech.com.au<http://www.escotech.com.au/>

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_____ From: Alex Muthmann <notifications@github.com> Sent: Thursday, 15 August 2019 8:06 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino Exactly. You could also get a GPS device and use this as time source :) — You are receiving this because you commented. Reply to this email directly, view it on GitHub<https://gist.github.com/796afa5d35a6c9d79e30008938d42e4e?email_source=notifications&email_token=AM4GXVRXUPUKOOHUSNV4WSTQEUTEDA5CNFSM4ILA6QH2YY3PNVWWK3TUL52HS4DFVNDWS43UINXW23LFNZ2KUY3PNVWWK3TUL5UWJTQAFXB4K#gistcomment-2999237>, or mute the thread<https://github.com/notifications/unsubscribe-auth/AM4GXVTXNHLNKWU5YGOEZCLQEUTEDANCNFSM4ILA6QHQ>.

deveth0 commented on 15 Aug 2019

Nope, when the uno wakes up, the defined method (wakeup in my example) is called, afterwards the loop.
You can also set the time in wakeup and sleep again.

There are also some cool GPS / 3G combi devices if you need internet access

manuelescotech commented on 15 Aug 2019

Thanks. I'm looking at sending info via SIGFOX. BTW how do I reset the RTC so that SQW is high again. What part of Europe? Manuel Escobar [cid:a9866155-75eb-4f16-b633-44524abc6e13] M: +61 452 303 726 E: manuel@escotech.com.au<mailto:manuel@escotech.com.au> W: www.escotech.com.au<http://www.escotech.com.au/>
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_____ From: Alex Muthmann <notifications@github.com> Sent: Thursday, 15 August 2019 8:15 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino Nope, when the uno wakes up, the defined method (wakeup in my example) is called, afterwards the loop. You can also set the time in wakeup and sleep again. There are also some cool GPS / 3G combi devices if you need internet access — You are receiving this because you commented. Reply to this email directly, view it on GitHub<https://gist.github.com/796afa5d35a6c9d79e30008938d42e4e?email_source=notifications&email_token=AM4GXVVDZM3NJKT4JDY6YOTQEUUCVA5CNFSM4ILA6QH2YY3PNVWWK3TUL52HS4DFVNDWS43UINXW23LFNZ2KUY3PNVWWK3TUL5UWJTQAFXB4U#gistcomment-2999242>, or mute the thread<https://github.com/notifications/unsubscribe-auth/AM4GXVVGGFDC65IHVS7YZODQEUUCVANCNFSM4ILA6QHQ>.

deveth0 commented on 15 Aug 2019

It should automatically be reset if you set the alarm again

manuelescotech commented on 15 Aug 2019

SQW stays low unless I remove power and battery. Manuel Escobar [cid:a84b05ba-3ebb-4102-a484-73e93f76f955] M: +61 452 303 726 E: manuel@escotech.com.au<mailto:manuel@escotech.com.au> W: www.escotech.com.au<http://www.escotech.com.au/>
...
_____ From: Alex Muthmann <notifications@github.com> Sent: Thursday, 15 August 2019 8:50 PM To: deveth0 <deveth0@noreply.github.com> Cc: Manuel Escobar <manuel@escotech.com.au>; Comment <comment@noreply.github.com> Subject: Re: deveth0/Alarm_Demo.ino It should automatically be reset if you set the alarm again — You are receiving this because you commented. Reply to this email directly, view it on GitHub<https://gist.github.com/796afa5d35a6c9d79e30008938d42e4e?email_source=notifications&email_token=AM4GXVWMIRJFAAWKEC2FV3LQEUYHBA5CNFSM4ILA6QH2YY3PNVWWK3TUL52HS4DFVNDWS43UINXW23LFNZ2KUY3PNVWWK3TUL5UWJTQAFXB6U#gistcomment-2999274>, or mute the thread<https://github.com/notifications/unsubscribe-auth/AM4GXVX2ADXDDD7HNKSYW4LQEUYHBANCNFSM4ILA6QHQ>.

flostuerzer commented on 27 May 2020

Good Evening Sir,

I have one little problem with this Code. I can run it once, so when I start the program, the pin D2 is HIGH and after some seconds, it drops to low. But it never rises again to about 4,5mA, do you have any idea what the reason could be?
Only if I remove the DS3231 module from the setup and remove the battery cell, reassemble everything, it works again for one single interrupt. Is there any command to use to set the pin to high again?

Everytime I am looping, a new Interrupt is being attached, it goes straight into sleep mode, detaches the interrupt and does some things, delays for 3s and starts the loop again. Can I put a line in there to put the SQW Pin to HIGH again?

Thanks a lot in advance!

Greetings,

Flo

deveth0 commented on 28 May 2020

Hey Flo,

I'm afraid you stumbled upon this bug: NorthernWidget/DS3231#17

You might try to modify your local version of the DS3231 library as mentioned there.

flostuerzer commented on 28 May 2020

Thanks a lot for your answer!

I changed the code in DS3231.cpp to this :

`void DS3231::turnOffAlarm(byte Alarm) {
// turns off alarm number "Alarm". Defaults to 2 if Alarm is not 1.
// Leaves interrupt pin alone.
byte temp_buffer = readControlByte(0);
// modify control byte
if (Alarm == 1) {
temp_buffer = temp_buffer & 0b11111110;
} else {
temp_buffer = temp_buffer & 0b11111101;
}
writeControlByte(temp_buffer, 0);

```
  //Modification from https://github.com/NorthernWidget/DS3231/issues/17
  // clear A1F/A2F flags for previously set alarms
  temp_buffer = readControlByte(1);
  // modify status byte
  if (Alarm == 1) {
          temp_buffer = temp_buffer & 0b11111110;
  } else {
          temp_buffer = temp_buffer & 0b11111101;
  }
  writeControlByte(temp_buffer, 1);


}`
```

But I am not 100% sure if this was right because actually nothing really changed. Pin still stays low after the first interrupt, ist there anything else I have to change?
How long should the LOW signal from the SQW pin usually be?

And one more question:
In the end, I just want to trigger the interrupt once every hour, e.g. at 16:00:00, 17:00:00,..
Is it correct in this case to use

ALRM1_MATCH_MIN_SEC 0b1100 // when minutes and seconds match or
ALRM2_MATCH_MIN 0b110 // when minutes match

And how to I get only one of two Alarm running?

Really appreciate your help, I'm unsuccessfully trying for days now...

flostuerzer commented on 28 May 2020

Okay looks like I am not used to writing code in a comment but it should look like everything written in code in my comment is now in the .cpp file. So basically I've added the code from the issue you've sent me to the existing code in the DS3231::turnOffAlarm(byte Alarm) method.

deveth0 commented on 28 May 2020

I did not test the workaround, sorry. Are you sure, that you use the changed version?

You need to set the alarm after each trigger again, simply add another hour then. The ALRM1_* and ALRM2_* are only relevant, if you want to trigger on the second or if it's ok, to trigger on a minute (accuracy). You can use whichever you want.

flostuerzer commented on 28 May 2020

I am 100% sure I use the changed version and I cant really figure out why it won't work.

Okay thanks!

I'll let you know when I'll get it working. Is there anything else to change, maybe in the DS3231.h file? I could send you my whole code if you would like to have a look on that.

deveth0 commented on 28 May 2020

i did not really look into the workaround, sorry. I'd assume that you only need to change the c file.

renstanford commented on 22 Jun 2020

this is what i need.. thank you for sharing about using built-in alarms on DS3231