

DS1307 Real-Time Clock Commands

The DS1307.h include file provides both high- and low-level support for the DS1307 real-time clock chip, as well as inexpensive breakout boards like the TinyRTC which come packaged with a backup battery and additional eeprom. Insert the following directive in your code to make these new commands available:

```
#include <DS1307.h>
```

Here follows a list of the commands..

DS1307_Enable(flag)

- enables the clock when flag is `TRUE`,
- disables the clock when flag is `FALSE`

DS1307_ResetClock

- resets clock completely to manufacturer's original condition,
- time to 00:00:00, day of the week to 01, date to 01/01/00,
- also sets 24-hour mode and enables the clock.

DS1307_SetTime(hour, minute, second)

- sets the time only: hours, minutes, seconds,.
- also sets 24-hour mode and enables the clock.

DS1307_SetDate(DOW, date, month, year)

- sets the date only: day of week (1-7), date, month, year,
- there is no error detection for out-of-range dates, (e.g., April 31)

DS1307_SetClock(hour, minute, second, DOW, date, month, year)

- sets the entire clock: hours, minutes, seconds, day of week, date, month, year.
- there is no error detection for out-of-range dates, (e.g., April 31)
- also sets 24-hour mode and enables the clock.

DS1307_ReadTime(hour, minute, second, flag)

- reads the time only: hours, minutes, seconds, a.m. or p.m.,
- flag = `FALSE` means a.m.,
- flag = `TRUE` means p.m.

DS1307_ReadDate(DOW, date, month, year)

- reads the date only: day of week (1-7), date, month, year

DS1307_ReadClock(hour, minute, second, flag, DOW, date, month, year)

- reads the entire clock: hours, minutes, seconds, flag, day of week, date, month, year
- flag = `FALSE` means a.m.,
- flag = `TRUE` means p.m.

DS1307_SetHourMode(12|24)

- sets the hour mode,
- 12 = 12-hour
- 24 = 24-hour
- any other value defaults to 24-hour mode

DS1307_ReadHourMode(12|24)

- returns the current hour mode within clock
- 12 = 12-hour
- 24 = 24-hour

DS1307_SetSQW(rate)

- sets the square wave output pin mode:
- 0 = disable square wave output
- 1 = 1 Hz output
- 4 = 4096 Hz
- 8 = 8192 Hz
- 32 = 32768 Hz
- any other value defaults to 1 Hz

DS1307_Write(address, value)

- writes to the internal registers or RAM,
- registers: 0x00 to 0x07
- RAM: 0x08 to 0x3F
- writing beyond this wraps around to the register space again, so be careful with multibyte writes

DS1307_Read(address, value)

- reads from the internal registers or RAM,
- see the notes, above.