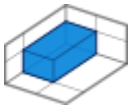
Tibbit Module

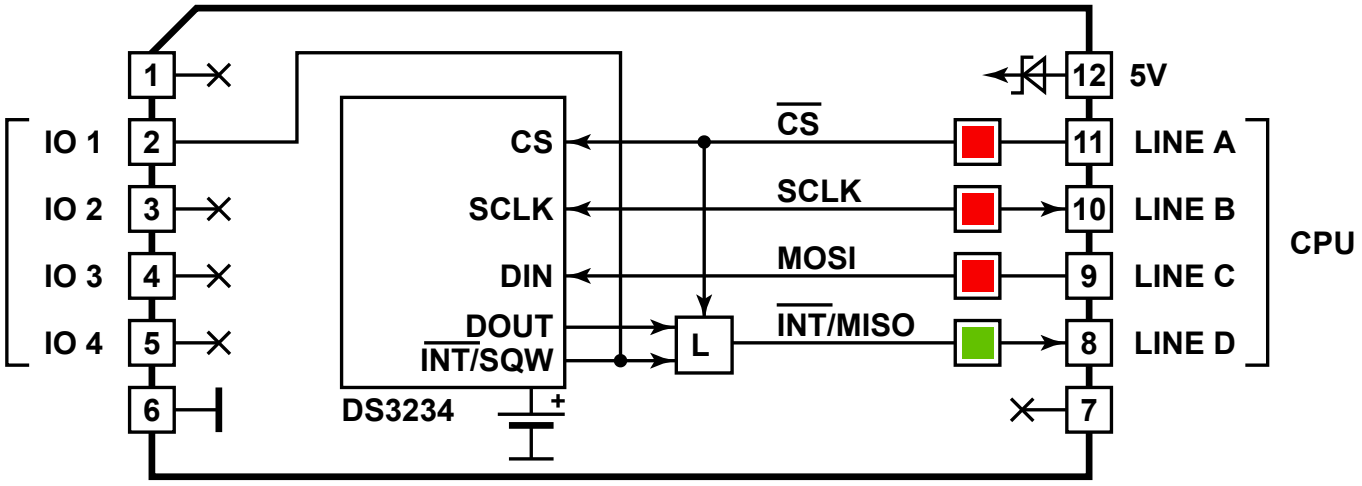
# #42



M1S

## RTC and NVRAM with backup

Real-time clock and non-volatile memory with backup battery and interrupt output.




**Form:** M1S

**Power:**

- 5V - Consumes 10mA

**Mates with:** #19, #20, #21, #37

### Details

This Tibbit is based on the DS3234 IC from Maxim Integrated. This is a temperature-compensated high accuracy RTC with non-volatile memory. Refer to Maxim Integrated datasheet for operation details.

The DS3234 RTC has the -INT/SQW pin, which can be set to trigger at a predefined date/time or output a square wave signal. The -INT/SQW is available to the outside world through the line IO1. -INT/SQW is also accessible from the CPU. The line is multiplexed with the DOUT signal of the

DS3234. The multiplexor is controlled by the CS state. When CS is LOW, thus indicating that an SPI transaction is in progress, the multiplexor selects the DOUT line. When CS is HIGH, the multiplexor selects the -INT/SQW signal. Therefore, it is only possible to gauge the -INT/SQW state when the SPI bus is idle.

The Tibbit carries a backup battery which powers the RTC when the main +5V supply is off.

**LEDs**

There are three red LEDs and one green LED. Red LEDs are connector to CS, SCLK, and MOSI lines. Green LED is connected to the -INT/MISO line.

**Sample project**

The use of this Tibbit is illustrated by a Tibbo BASIC test project. Yo can find it here: *https://github.com/tibbotech/CA-Test-Tibbit-42*.

The non-volatile memory of the DS3234 can be used from within the STG (settings) library. Projects often have parameters (settings) that change too often to be stored in the EEPROM, yet must be preserved even when the power is off. The non-volatile memory of this Tibbit offers a perfect storage for such parameters.



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