



APPLICATION NOTE 3921

Using a DS1307 with a PIC Microcontroller

Abstract: This application note is intended to demonstrate an application using the DS1307 Real-Time Clock with a Microchip PIC microcontroller. The software example includes basic operating routines, and a schematic of the application circuit is included.

Discussion

This application note demonstrates how to use the DS1307 real-time clock (RTC) with a Microchip PIC16F628 microcontroller.

The example code, written in assembly code, includes a routine for reading the time and date from the RTC and a routine to write time and date data to the RTC from user entries.

Operation

The program uses two general-purpose port pins on the microcontroller to communicate with the DS1307 using the I²C serial interface. The microcontroller's internal UART drives two port pins, which are connected to a DS232 line driver/receiver. User inputs and data outputs from the program are passed through the RS-232 interface from a terminal emulator program on a PC to the microcontroller. The RS-232 DTR input line controls the microcontroller's reset input.

The microcontroller in this example is a PIC16F628. For information on the microcontroller used in this application note, including available programming tools, visit the [Microchip web site](#).

The software is shown in **Figure 1**. A schematic of the circuit is shown in **Figure 2**.

Related Parts

DS1307: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

DS1337: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

DS1338: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

DS1338: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

DS1339: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

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