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APPLICATION NOTE 3510

Interfacing a DS1305 RTC with an 8051-Type Microcontroller

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Abstract: This application note describes how to interface a DS1305 real-time clock with the DS2250, an 8051-type microcontroller. Example code, written in C, shows basic interface routines.

DS1305 Pin Assignment

VCC2	1	16	VCC1
VBAT	2	15	PF
X1	3	14	VCCIF
X2	4	13	SDO
NC	5	12	SDI
INT0	6	11	SCLK
INT1	7	10	CE
GND	8	9	SERMODE

Description

This application note demonstrates how to interface a DS1305 Serial Alarm Real-Time Clock (RTC) to an 8051-type microcontroller. Example code shows basic interface routines. The microcontroller used in this example is the DS2250 Soft Microcontroller Module, and the software is written in C. The program demonstrates setting and reading the time and date, writing and reading the RAM, and setting and reading an alarm.

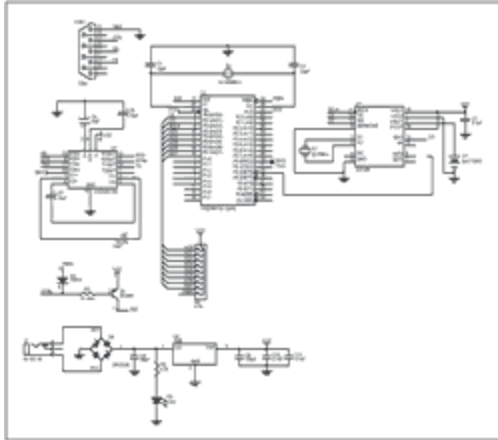
Operation

The interface program uses three general-purpose port pins (GPIOs) on the microcontroller and the 3-wire interface to communicate with the DS1305 real-time clock. An additional port pin is used to monitor the INT0 interrupt output on the DS1305.

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

[Download zip file](#)

Figure 1. Interface Program Listing



[For Larger Image](#)

Figure 2. Schematic of DS1305.

Related Parts

DS1305	Serial Alarm Real-Time Clock	Free Samples
DS1306	Serial Alarm Real-Time Clock	Free Samples
DS1392	Low-Voltage SPI/3-Wire RTCs with Trickle Charger	Free Samples
DS1393	Low-Voltage SPI/3-Wire RTCs with Trickle Charger	Free Samples
DS2250	Soft Microcontroller Module	Free Samples

More Information

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