



## APPLICATION NOTE 118

# Replacing the DS1202 with the DS1302

*Abstract: This application note describes how to interface a DS1302 in an application that previously used the obsolete DS1202.*

## Introduction

This application note provides the information necessary to determine whether or not the DS1302 is a "drop in" replacement for the DS1202 in existing applications.

## Replacement Issues

The DS1302 may provide a replacement for the DS1202 without requiring hardware or software modification of the existing DS1202 application with a couple of exceptions to note.

## Software 3-Wire Read Cycle

Data on the I/O pin must be read after the falling edge of SCLK and before the rising edge of SCLK.

### DS1202 3-Wire Read Cycle Implementation

Data is output on the falling edge of SCLK and remains valid until the next falling edge of SCLK.

### DS1302 3-Wire Read Cycle Implementation

Data is output on the falling edge of SCLK and is high impedance on the rising edge of SCLK.

## Potential Software Concern

If the software in the current DS1202 application reads the I/O line after the falling edge of SCLK, both the DS1202 and DS1302 will provide expected results.

If the software reads the I/O line after the rising edge of SCLK the DS1202 will return expected data but the DS1302 will provide inconsistent data.

## Software Conclusion

Ensure the data on the I/O pin is read after the falling edge of SCLK and before the rising edge of SCLK.

## Hardware Pin 1

This pin must be unconnected in current DS1202 applications.



The primary supply in a dual power supply configuration. Internal pull-down resistor

provided for proper operation if the pin is left unconnected.

#### Potential Hardware Concern

If pin 1 in the current DS1202 application is not connected, both the DS1202 and DS1302 will provide expected results.

If pin 1 in the current DS1202 application is connected for some reason and the connection provides a voltage level greater than the voltage present on Vcc1 (pin 8), the DS1302 will be powered by this connection therefore drawing unexpected current from the application.

#### Hardware Conclusion

Ensure that pin 1 is not connected in the current DS1202 application.

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Application Note 118: <http://www.maxim-ic.com/an118>

#### More Information

For technical questions and support: <http://www.maxim-ic.com/support>

For samples: <http://www.maxim-ic.com/samples>

Other questions and comments: <http://www.maxim-ic.com/contact>

#### Related Parts

DS1302: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

AN118, AN 118, APP118, Appnote118, Appnote 118

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