

Introduction

The purpose of this memo is to inform you that the XCF01S, XCF02S, and XCF04S devices are sensitive to noise when operated outside of the data sheet specification ([DS123](#)).

Background

When operated outside of the data sheet specification, the following two conditions can cause the internal address counter to be corrupted, thus preventing the FPGA from configuring properly:

1. As specified in the data sheet, an external resistor of 4.7 Kohm (or lower) is required to quickly pull up the FPGA INIT and PROM OE/RESET# signal line. If the FPGA INIT and PROM OE/RESET# signal line rises too slowly, then system noise might corrupt the PROM's internal address counters, thus keeping the FPGA from configuring properly.
2. As specified in the data sheet, do not exceed 12 mA sink current on the FPGA DONE pin. Beware of LED driving circuits. Using DONE to drive the LED and the PROM CE# pin directly (unbuffered) exceeds this specification.

Product Affected

The following parts are affected:

| | |
|-------------|--------------|
| XCF01SVO20C | XCF01SVOG20C |
| XCF02SVO20C | XCF02SVOG20C |
| XCF04SVO20C | XCF04SVOG20C |

Recommendations

1. Follow the data sheet to ensure that an external 4.7 Kohm (or lower) resistor is connected to the PROM's OE/RESET# pin and the FPGA's INIT pin. For new designs, a 330 ohm external resistor is recommended, as indicated in Figure 1.

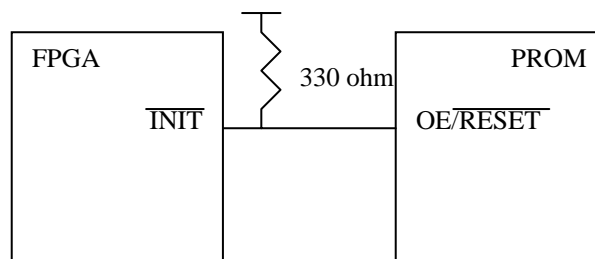


Figure 1 (Recommended Resistor Value for New Designs)

2. When using FPGA DONE to drive PROM CE# (to reduce standby power), make sure that the signal is within the specification and has a fast rise and fall time. Use an external buffer to drive any LED (Figure 2). If DONE is not used to drive CE#, it can be connected to an LED (Figure 3).

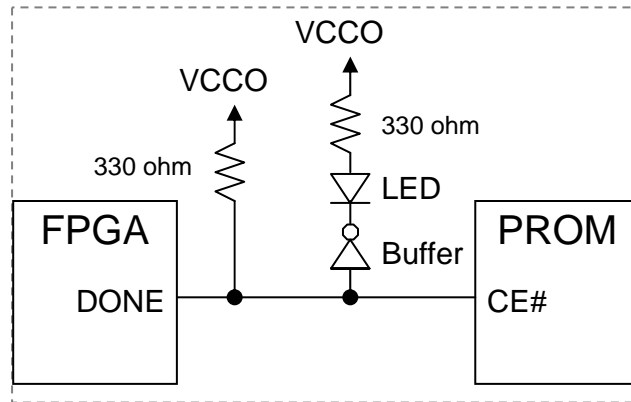


Figure 2 (LED with Buffer Circuit)

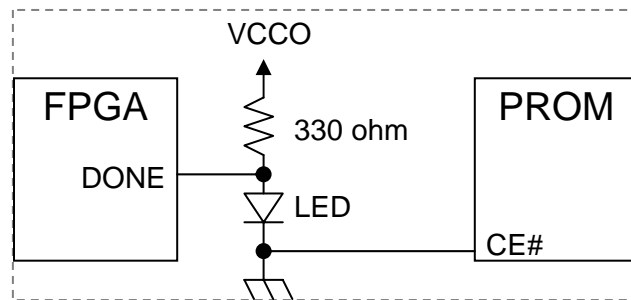


Figure 3 (Un-Buffered LED)

If you have any further questions, please contact your local Xilinx Sales Representative.

Revision History

The following table shows the revision history for this document.

| Date | Version | Revision |
|----------|---------|------------------|
| 12/16/03 | 1.0 | Initial release. |