



Application Note: ADC64's 1 MHz Timebase Causing I/O Errors

DATE: June 12, 1997
TO: All ADC64 Users
FROM: Technical Staff
RE: ADC64 I/O Errors caused by 1 MHz Timebase
CC:

Problem

The ADC64 uses a 1 MHz crystal as a timebase for the 82C54 Counter Timer chips. These chips create the signals used to drive the conversion of the DAC and ADC at rates that the programmer can control. However, the width of the pulses produced by the 1 MHz crystal are wider than is allowed by the DAC and ADC chips, resulting in multiple conversions each clock cycle.

This problem usually manifests itself as intermittent bad conversions, especially at data rates above 20 KHz. These bad conversions display as spikes in the expected curve.

Solution

Replace the 1 MHz crystal in the ADC64 with a 10 MHz crystal. The target software libraries must also be changed to reflect the new timebase frequency. Version 2.0 of the Peripheral Libraries for Windows 95 and NT has been modified to assume a 10 MHz timebase frequency. This software is available on the Innovative Integration Web site for downloading. The new Peripheral Library version also requires an updated Windows 95 VxD and NT Device Driver, which are also available on the Web site.

Current owners of ADC64 boards can contact Innovative Integration for a replacement crystal at no charge.