Application Report
SLLA180–September 2005

Transitioning to TI's TL16C2550 from ST16C2550 or SC16C2550

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1 Introduction

This document provides a functional and physical comparison of the Texas Instruments TL16C2550, the Exar ST16C2550, and the Philips SC16C2550.

2 Hardware Differences

These devices are all available in a 48-Pin QFP package and a 44-Pin PLCC package. Both the 48-Pin QFP packages and the 44-Pin PLCC packages are pin-for-pin compatible among all three manufacturers' devices. Philips and Exar offer a 40-Pin DIP package, while TI offers a very space-efficient 32-Pin QFN package.

Operating voltages vary among the manufacturers. The TI TL16C2550 is the only one designed to operate as low as 1.8V, but it can operate with supplies up to 5V as the others do.

3 Firmware Differences

All three manufacturers' devices are functionally equivalent; therefore, firmware written to utilize the basic subset of the 16C2550 functionality will be fully compatible with all devices. However, TI and Philips offer enhanced functionality on the devices. Philips chooses to implement software flow control, while TI continues to offer its patented "Auto Flow Control" feature. TI's "Auto Flow Control" feature requires less firmware code to implement than Philips' software flow control. The use of these enhanced functions by the firmware would render that section of firmware code incompatible with the other devices respectively.

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