

*TMS320 DSP
DESIGNER'S NOTEBOOK*

A Simple Way to Terminate Unused TMS320C40 Comm Ports

APPLICATION BRIEF: SPRA216

*Jim Patterson
Digital Signal Processing Products
Semiconductor Group*

*Texas Instruments
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CONTACT INFORMATION

US TMS320 HOTLINE	(281) 274-2320
US TMS320 FAX	(281) 274-2324
US TMS320 BBS	(281) 274-2323
US TMS320 email	dsph@ti.com

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A Simple Way to Terminate Unused TMS320C40 Comm Ports



Abstract

This document discusses an easy way to terminate an unused communication (comm) port without using external pull-up resistors.



Design Problem

Is there an easy way to terminate an unused communication (comm) port without using external pull-up resistors?

Solution

You can terminate the control lines on unused individual comm ports by tying the control lines together on the same comm port, (i.e., /CSTRB to /CRDY and /CREQ to /CACK).

The idea is that this would hold the control inputs high without the use of external pull up resistors. As a secondary effect, a port terminated like this would provide a monitor/test point, to which one could connect a logic analyzer or external device to capture data written to the port.

Writing a Word to the Comm Port

Case 1: Writing to ports 0, 1, or 2

These are output ports at reset and will not request the token when the processor writes to the port (i.e., these ports already have the token). /CSTRB will drive /CRDY correctly for each byte written.

Case 2: Writing to ports 3, 4, or 5

When the processor writes a word to the port the first time, the port will request the token and the control and data lines will switch directions without problems, but there is no way to make the /CREQ line go active again. That port can continue sending words, but it cannot become an input port again.