

Writing to the C2000 Asynchronous Serial Port in C



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Writing to the C2000 Asynchronous Serial Port in C

Abstract

This package demonstrates how to write to the C2000 asynchronous serial port from the Texas Instruments C compiler. The program is available on the Internet. This document contains download instructions.



Product Support

Related Documentation

The following list specifies product names, part numbers, and literature numbers of corresponding TI documentation.

- *TMS320C2xx User's Guide*, Literature Number SPRU127B

World Wide Web

Our World Wide Web site at www.ti.com contains the most up to date product information, revisions, and additions. Users registering with TI&ME can build custom information pages and receive new product updates automatically via email.



Introduction

A program for writing to the C2000 asynchronous serial port can be obtained via the Internet by typing the following location into your browser and executing the self-extracting archive after downloading it:

<ftp://ftp.ti.com/pub/tms320bbs/c2xxfiles/UART2XX.EXE>

The `uart2xx.exe` program demonstrates how to write to the TMS320C2xx asynchronous serial port from the Texas Instruments C compiler. It is a C version of the `uart.asm` file found in Example C-9 of Appendix C in the TMS320C2xx User's Guide (SPRU127B). The program receives input from the serial port and echoes each character as it is received.

Contents

The components of the self-extracting archive and a description of each are listed in Table 1 below.

Table 1. Components of the self-extracting archive

File	Description
<code>main.c</code>	Main C module, which initializes the serial port settings and contains the interrupt service routines.
<code>register.h</code>	Header file included by <code>main.c</code> , which contains all memory-mapped registers that can be accessed in the C language.
<code>cvector.asm</code>	Assembly file which generates the C2xx vectors including the reset and serial transmit and receive vectors.
<code>c203.cmd</code>	Linker command file describing memory map and sections for the C203.
<code>uart2xx.doc</code>	This document (in Microsoft Word format).
<code>uart2xx.htm</code>	This document (in HTML format).
<code>uart2xx.txt</code>	This document (in plain text format).
<code>uart2xx.out</code>	Executable file for sample C program to be loaded by C2xx simulator or hardware.
<code>build.bat</code>	Batch file for building <code>uart2xx.out</code> using only the Texas Instruments toolset.
<code>rts2xx.lib</code>	Runtime support library.



Usage

To use the program, load `serial.out` into the debugger and then run it. Next, run a generic terminal program such as Hyperterm (included in Windows 95) and connect the PC serial port to the serial port on the C2000. Make sure to set the baud rate to 9600 baud if running at 20 MHz, or 19200 baud if running at 40 MHz. If the device is functioning properly, you will see "c203 UART is fine!" being transmitted repeatedly.

Modification

The baud rate and clock rate may be changed in the `#define` statements of `main.c`. To build, type `build.bat` from a DOS prompt. Or if using the GODSP Code Composer development system, create a project with the following files: `rts2xx.lib`, `main.c`, `cvector.asm`, `c203.cmd`, and `registers.h`. Then build as usual.