

TOSHIBA

SP-870-014

SIOTR2

--Inter-CPU Communication (Simultaneous Transmission/Reception)
Using SIO--

Rev 1.1
Dec. 2005

1. Target MCU

This sample program is created targeting at the TLCS-870/X series.
When using an MCU other than the TLCS-870/X series, refer to the data sheet for that MCU.

2. Overview

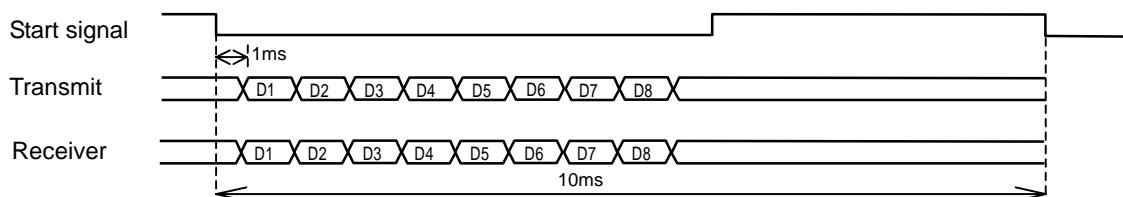
This sample program performs inter-CPU communication (simultaneous transmission/reception) using SIO.

3. Description

The program performs simultaneous transmission/reception (8-byte transmission/reception) using the internal clock. It repeats communication at intervals of 10 ms.

The program uses the following pins:

- Start signal: P20
- Clock: SCK (P43)
- Transmit data: SO (P45)
- Receive data: SI (P44)



4. Passing Data

The program uses the following variables to pass the operating mode, R/W addresses, and R/W data:

[Variable: GSIOFLG] Communication flag

bit7 FRCVCP =1: Reception completed (cleared by processing routine)

[Variable: GSNDAT] Transmit data (8 bytes)

[Variable: GRCVDAT] Receive data (8 bytes)

5. Interrupts

- TC2 interrupts (10-ms cycle): To start communication
- TC3 interrupts: To create a start signal
- SBI interrupts

- The information contained herein is subject to change without notice.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of TOSHIBA products listed in this document shall be made at the customer's own risk.
- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, the hardware and software incorporated in this TOSHIBA products in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress.
- TOSHIBA does not take any responsibility for incidental damage "including loss of business profit, business interruption, loss of business information, and other pecuniary damage" arising out of the use or disability to use the product.
- The products described in this document are subject to the foreign exchange and foreign trade laws.
- TOSHIBA products should not be embedded to the downstream products which are prohibited to be produced and sold, under any law and regulations.