



Toshiba V Series User Manual

Integrated controller, cif module

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Integrated Controller



model 2000

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Summary of Contents for Toshiba V Series

[Page 1](#) 6F8C0843 series Integrated Controller model 2000 CIF module (CF611) User's Manual...

[Page 2](#) Safety Precautions This manual contains important information for the operator to operate this product safely and correctly and avoid bodily injury and property damage. Grasp the meanings of the following marks and their descriptions before reading this manual. Hazard Classifications Indicates a potentially hazardous situation which, if not avoided, could result in WARNING serious injury or death.

[Page 3](#) Markings used on the model 2000 and in this Manual Make sure warning markings are

attached on the model 2000. If any of them are missing or the wording is illegible, contact Toshiba's Service Department [Warning Mark on the model 2000] This is the warning mark for dangerous location.

Page 4 2. Precautions on Installation **WARNING** Mandatory Be sure to ground the model 2000. The protective ground terminal of the model 2000 must be connected to an external protective earth. Operation without grounding may cause accidental fire or shock. **CAUTION** Mandatory Mandatory Avoid the following locations when installing or Install the model 2000 at a place where...

Page 5 3. Precautions on Wiring **WARNING** Mandatory Mandatory Be sure to turn off power before wiring. Be sure to use crimp-style terminal with Otherwise, it can cause electric shock or insulating sheath or insulating tape to cover malfunction of the model 2000. the conductive parts when wiring modules so that no conductive parts are exposed.

Page 6 4. Precautions for Operation **WARNING** Mandatory Mandatory Configure emergency stop interlocking circuit Be sure to keep the terminal block covers outside the model 2000. Otherwise, failure and closed during power ON. Do not touch the malfunction of the model 2000 can cause terminals.

Page 7 Also unauthorized repairing will cause external load power supplies fire or serious accidents. Do not attempt to Otherwise, it can cause machine damage, repair. Contact Toshiba for repairing. malfunction or accidents. Mandatory It is recommended to use an external power supply that provides power for both the I/O module and the loads.

Page 8 CAUTION Forbidden Mandatory Be careful not to hit or fall off the model 2000 Place any modules removed from the unit on a by accident. conductive mat or conductive bag (containing Excess shock can cause failure. a spare board, etc.) on an grounded desk. Otherwise, static electricity can damage components of the module.

Page 9 2000. Otherwise, it can damage or fire due to overheat. Contact Toshiba for repairing.
Operation under such situation can cause fire or electrical shock. viii model 2000 ClF
Module(CF611) User's Manual...

Page 10 CAUTION Forbidden Forbidden Do not touch any components, terminals, Do not forcibly bend or pull or distort the connectors or printed circuit boards in the power cord and other cables. Otherwise, they module. can be cut off or cause overheat. Otherwise, it can cause the IC or LSI or the like to be broken by static electricity, resulting in failure or malfunction.

Page 11 Toshiba's engineers. Immunity Toshiba is not liable for any loss caused by fire, earthquake, action by a third party, or other accidents, or the operator's intentional or accidental misuse, incorrect use, or use under abnormal condition.

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[Page 14: Overview](#)

1.3 ■■■■■■■■ Chapter 1 Overview 1.1 CIF Module Overview ○ The CF611 is a general purpose

serial interface module. ○ By using the CF611, the controller can communicate with external devices equipped with a RS232C interface. ○ The CF611 has one port of the serial interface. ○...

Page 15: Cif Module Operation Overview

Chapter 1 Overview 1.2 CIF Module Operation Overview When exchanging data with an external device using the CF611, the exchanged data is transmitted through the following path. CF611 □CIF module□ Register Buffer Memory buffer Driver MWRITE Transmitting Transmit data Transmitting area External buffer Channel 1...

Page 16: Name And Function Of Each Part

1.3 Name and Function of Each Part 1.3 Name and Function of Each Part The external view and function of the CF611 is as follows: LEDs CH1:Lit while transmitting or receiving data through channel 1 CF611 Reset switch RESET Resets the CIF module. Press after changing the DIP switch setting or when ther is an ASCII module error.

Page 17: Switch Settings

Chapter 1 Overview 1.4 Switch Settings Each switch is set as follows. Baud rate setting Baud rate 1200 2400 4800 9600 19200 SW-1 SW-2 SW-3 SW-5 Stop bit 1 stop bit 2 stop bit Baud rate SW-4 Data bit length 8 bit Stop bit (2bit/1bit) 7 bit SW-3 Parity (Parity / Non parity)

[Page 18: Connector Port Specifications](#)

1.5 Connector Port Specifications 1.5 Connector Port Specifications The following signals are assigned to connectors. DC5V CF611 External Channel 1 serial port D-SUB 9-pin female connector 5 4 3 2 M2.6 screw 9 8 7 6 Notes (1) DTR is ON while power is ON. (2) Each input signal is OFF when the signal line is not connected.

Page 19 Chapter 1 Overview model 2000 CIF Module (CF611) User's Manual...

Page 20: Specifications

Chapter Specifications □ 2.1 Module Specifications The main specifications of the CF611 are as follows. Item Specification Interface RS232C (1 channel) Transmission capacity 1 text up to 320 bytes Transmission mode Asynchronous Communication mode Full duplex Activation method Contention Transmission speed 300,600,1200,2400,4800,9600,19200bps Start bit : 1 bit...

Page 21: Transmission Procedure

Chapter 2 Specifications 2.2 Transmission Procedure The CF611 transmission method is commonly used in personal computers. A general method uses the following polling method and commonly uses CR (0DH) as the trailing code. Send Text Text Text Receive (1) Transmitted text To transmit data using the CF611, create an ASCII code text data as shown below and write it in the transmitting area of the CF611 with an MWRITE instruction.

Page 22: Connection

3.3 Chapter Connection 3.1 RS232C Cable Connection

The following figure shows the RS232C cable connection. In general, the RS232C cable should be kept less than 15m. Use 0.3mm or greater shielded cable. FG connect with DC5V installation screw of the D sub connector.

[illegible]

Chapter 3 Connection 3.2 Wiring Precautions The following module layout is recommended for noise immunity. 1) Separate the low-voltage I/O modules (left side) and power I/O modules (right side) in layout and wiring. 2) Keep a distance of 100 mm or more between the units for maintenance work and ventilation.

Page 24: Register Configuration

4.3 Chapter 4 Register Configuration 4.1 Allocation The engineering tool configuration editor is used to set u the CF611. The I/O setup screen is shown below. For more information concerning the I/O allocation method, refer to the “model 2000 Sequence Controller S2 Function Description.”...

[Page 25: Status/Command Information](#)

Chapter 4 Register Configuration 4.2 Status/Command Information The following status/command information is allocated in the I/O area. Status No use No use (reserve) IWn+1 Command No use No use QWn+2 No use No use (reserve) QWn+3 Register Signal Description IW ...

[Page 26: Register Map](#)

4.3 Register Map 4.3 Register Map (1) CF611 internal memory map The configuration of the CF611 internal memory map is as shown below. Data can be transmitted/received to/from the controller with MREAD/MWRITE instruction. Status 1 Parameter (16W) Switch setting status Receive data (0010H) Software reset...

[Page 27](#) Chapter 4 Register Configuration (2) Status 1 The CF611 status 1 is stored in parameter 0W. Status 1 No use Error code RDY_ERR Error code Nmae Description Description (when ERR=1) Normal 1:Operating normally ready 0:Initializing or error occurring CPU error 1:Error ROM error...

[Page 28](#) 4.3 Register Map (4) Software reset The CF611 can be reset with software by transferring a command to parameter 5W. Set a hot start command if the trailing code or the receive timeout interval is changed. Hot start takes 1 second to complete. Set a cold start command if an error occurs in the CF611.Cold start takes 2 seconds to complete.

[Page 29](#) Chapter 4 Register Configuration (7) Channel status Parameter 9W contain the control signal status. Channel status No use No use Nmae Description 1:DSR enable 0:DSR disable (8) Receive byte length information Parameter 10W contain the receive byte count. Receive bytes Receive byte to 320 bytes...

[Page 30: Operation Description](#)

5.3 Chapter 5 Operation Description 5.1 Receive Processing Operation The CIF module's data receive timing is as follows: Normal data Abnormal data Transmit Receive Receive RX_CMP Receive complete ① ① RX_ST ③ receive start ⑤ RX_RDY Normal receive ready ②...

[Page 31: Transmit Processing Operation](#)

Chapter 5 Operation Description 5.2 Transmit Processing Operation The CIF module's data transmit timing is as follows: Normal data Abnormal data Transmit Transmit TX_RDY Transmit ready ③ TX_ST Transmit start ② ⑤ TX_CMP Normal Transmit complete Abnormal TX_ERR Transmit error ①...

[Page 32: Changing The Trailing Code](#)

5.3 Changing the Trailing Code 5.3 Changing the Trailing Code An example of changing the transmission text trailing code is shown below: Trailing code modification example 12W Trailing code 0003H Trailing code 03H 5W Soft reset 80FEH ...

[Page 33](#) Chapter 5 Operation Description model 2000 CIF Module (CF611)User's Manual...

[Page 34: Application Program](#)

7.1 S3AS311 Chapter Application Program 6.1 CF611 Transmission Program Example An example of program to receive data from a PC and loop it back to the program is shown below. (1) Configuration IW16 MW11.16 IW17 MW11.17 QW18 MW11.18 QW19 MW11.19 BU648E SP SP SP SP SP SP (RS232C) (2) Variable definition example...

[Page 35](#) Chapter 6 Application Program (3) CH1 main processing program 1st scan : Turn RX1_GO ON to activate receive processing. Receive processing : When receive complete and RX1_END turns ON, use the table move instruction (TMOV) to transfer the content of RX1_DAT[0] - [128] to TX1_DAT[0] ...

[Page 36](#) 6.1 Transmission Program Example (4) Ch1 transmission program Receive : data received by Ch1 (up to 256 bytes) is stored in RX1_DAT[0] - [128]. When receive is successful, MX12.16.10 RX1_CMP turns ON for 1 scan. When there is a receive error, MX12.16.9 RX1_ERR is turned ON and error information is stored in ERR_DAT[0] -...

[Page 37](#) Chapter 6 Application Program model 2000 CIF module (CF611)User's Manual...

[Page 38: Maintenance](#)

Chapter 7 Maintenance 7.1 Checking the LEDs The operation of CIF module can be diagnosed by checking the LEDs. Function Lit when transmitting or receiving The diagnosis procedure when there is an error is as follows: (1) CH1-LED is not lit at receive timing. ...

[Page 39: Checking The Status Information](#)

Chapter 7 Maintenance 7.2 Checking the Status Information When there is an error in the CIF module, an error code is stored in the CIF module internal status (0W). Status No use Error code RDY ERR 0W Name Description 1:Normal operation ready 0:Initializing or error occurring 1>Error...

[Page 40: Checking The Receive Error Information](#)

7.3 Checking the Receive Error Information 7.3 Checking the Receive Error Information When a receive data error is detected, the error code is stored in the receive error information (7W). Receive error No use Receive error code No use information 7W...

[Page 41: Checking The Transmission Error Information](#)

Chapter 7 Maintenance Checking the Transmit Error Information Transmit error No use Transmit error code information 8W Error code Description (when TXERR=1) Normal Transmit timeout error. Transmit text length error. The Trailing code isn't detected. Transmit error code description and status Error Type Description...

[Page 42](#) 2 MWRITE V Appendix A Specifications A.1 MREAD Instruction Specification (for V series) For model 2000 Special module data input Diagram MREAD Completion output Execution enable input Bus/Unit/Slot Extended memory top address TADR Transfer destination variable Transfer word number...

[Page 43](#) Appendix A Specifications Function If execution enable input E is OFF, no data is input from the special module. If execution enable input E is ON, data is transferred from special module internal extended memory specified by the input argument to the CPU module. ...

[Page 44](#) A.2 MWRITE Instruction Specification (for V series) A.2 MWRITE Instruction Specification (for V series) For model 2000 Special module data output Diagram MWRITE Execution enable input Completion output Bus/Unit/Slot Extended memory top address TADR Transfer source variable Transfer word number...

[Page 45](#) Appendix A Specifications Function If execution enable input E is OFF, no data is output to special module. If execution enable input E is ON, data is transferred from transfer source variable in the CPU module specified by input argument to the special module internal extended memory.

[Page 46](#) A.3 ASCII Code Table A.3 ASCII Code Table high -order 4 bits " & ' → < ¥ ← ↑ > ↓ 6F8C0843...

[Page 47](#) Appendix A Specifications model 2000 CIF Module (CF611) User's Manual...

[Page 48](#) Integrated Controller Vseries model 2000 CIF module (CF611) User's Manual 1st edition 9th March 2002 0843.2.0001 INFORMATION AND INDUSTRIAL SYSTEMS & SERVICES COMPANY INDUSTRIAL EQUIPMENT DEPARTMENT 1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan Tel.:+81-3-3457-4900 Fax.:+81-3-5444-9268 TOSHIBA Corporation 2002 © All Rights Reserved.

This manual is also suitable for:

Cf6112000