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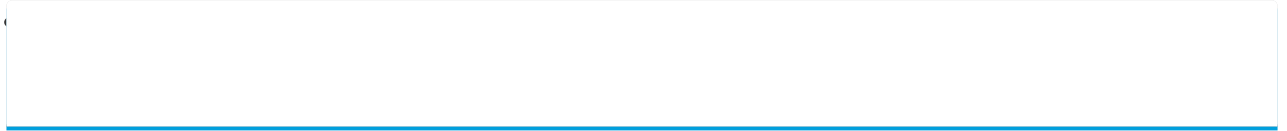
Toshiba C3PU35 User Manual

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Table Of Contents

19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67

68
69
70
71
72
73
74
75
76
77
78



•

•

Bookmarks

[Download this manual](#)

Quick Links



6F8C1118

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Co puter odule C3PU35 User's Manual

TOSHIBA

Integrated Controller



Table of Contents

[Next Page](#)

1
2
3
4
5

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(article)

Summary of Contents for Toshiba C3PU35

[Page 1](#) 6F8C1118 odel 3000 Co puter odule C3PU35 User's Manual...

[Page 2](#) Important Information No patent liability is assumed by TOSHIBA Corporation with respect to use of information, illustrations, circuits, equipment or examples of application in this publication. TOSHIBA Corporation reserves the right to make changes and improvements to this publication and/or related products at any time without notice.

[Page 3](#) 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 4](#) 1. Markings used on the model 3000 and in this Manual Make sure warning markings are attached on the model 3000. If any of them are missing or the wording is illegible, contact Toshiba's Service Department [Warning Mark on the model 3000] This is the warning mark for dangerous location.

[Page 5](#) 2. Precautions on Installation WARNING Mandatory Be sure to ground the model 3000. The protective ground terminal of the model 3000 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 3000 at a place where...

[Page 6](#) It is assumed that the users have general Apply power of the specified ratings described in the manual. knowledge of industrial electrical control Applying excess power voltage to the model systems. 3000 can cause explosion or fire. model 3000 Computer Module C3PU35 User's Manual...

[Page 7](#) 4. Precautions for Operation WARNING Mandatory Mandatory Configure emergency stop interlocking circuit Be sure to keep the terminal block covers outside the model 3000. Otherwise, failure closed during power ON. Do not touch the and malfunction of the model 3000 can cause terminals.

[Page 8](#) Also, do not try to disassemble the battery or make it short-circuited or throw it into fire or use it in overheated condition. Otherwise it can cause fire or explosion. model 3000 Computer Module C3PU35 User's Manual...

[Page 9](#) CAUTION Forbidden Mandatory Be careful not to hit or fall off the model 3000 Place any modules removed from the unit on by accident. a conductive mat or conductive bag Excess shock can cause failure. (containing a spare board, etc.) on an grounded desk.

[Page 10](#) Otherwise, it can cause malfunction, the model 3000. machine damage or fire due to overheat. Contact Toshiba for repairing. Operation under such situation can cause fire or electrical shock. viii model 3000 Computer Module C3PU35 User's Manual...

[Page 11](#) 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 12](#) 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.

[Page 13](#) Preface Thank you for purchasing the Toshiba Integrated Controller V Series model 3000 Computer Module (hereafter referred to as C3. Or as model 3000 or simply device if no distinction necessary). This manual describes the operating procedure and precautions for the C3.

[Page 14](#) C3. Related to controller communication functional Integrated Controller C3/C2 Windows Control Communication Library 6F8C0894 This manual has described the support software for the communication between controllers, and using the network module for control from C3. Computer module C3PU35 User's Manual...

[Page 15](#) Procedure flow Preparation □ Check the content of package against the packing list □ Determine the installation site "1.3 Installation Requirements" on page 5 Installation □ Install the module in the basic unit. □ Connect external equipment to the module. □...

[Page 16](#) Indicates reference to section in this manual or other manual. References to section in this manual are enclosed in single quotes (' ') and references to section in other manuals are enclosed in double quotes (" "). [Remark] Provides supplementary description. Computer

[Page 17](#) Guide to Reading this Manual This manual is organized as follows: You may start from the appropriate chapter as necessary. Chapter 1 Before Turning on the Summarizes items and caution that you should Power know before using this equipment. Chapter 2 Installation Describes how to install the equipment to the base and connect the cables.

[Page 18](#) Fully equipped with keyboard, mouse, floppy disk, RS-232C, USB, and Ethernet connectors, and 2 slots CARDBUS PC card. Improved reliability Comes equipped with RAS function which monitors the operating status and provides detail trouble report. Computer module C3PU35 User's Manual...

[Page 19: Table Of Contents](#)

CONTENTS 1 Before Turning on the Power 2 Checking the Content of the Package 3 Name and Function of Each Part 4 Installation Requirements 5 Power Requirements 6 Precautions when using Power 7.1 Daily use 7.2 When turning Off the Power...

[Page 20](#) Setting the BIOS A Q&A B Device Specifications C Specifications Interface Specifications B.2.1 RGB Interface B.2.2 Serial Interface (RS-232C) B.2.3 USB Interface B.2.4 Ethernet Interface B.2.5 PCMCIA card slot xviii Computer module C3PU35 User's Manual...

[Page 21: Before Turning On The Power](#)

Chapter 1 Before Turning on the Power 1.1 Checking the Content of the Package Check the content of the package against the packing list included with the product and make sure everything is included. 6F8C1118...

[Page 22: Name And Function Of Each Part](#)

Switches to perform standalone initialization of the module. USB1 Ethernet Switch to perform hardware 10/100BASE-TX reset of the module. Switch to shut down Windows and restart. HDD Flash Disk RST SW INZ SW DIP-SW Computer module C3PU35 User's Manual...

[Page 23](#) 1.2 Name and Function of Each Part Mounting screw(top) Mounting screw I/O bus connector Station bus connector Station bus connector Mounting screw(bottom) Mounting screw(top) A screw to mount the module to the basic unit. Mounting screw(bottom) Station bus connector Station bus connector for the V series model 3000. I/O bus connector Connector for the I/O bus.

[Page 24](#) General LEDs 1 - 4 Hard disk drive (HDD) access lamp. Turns ON when the internal hard disk HDD (green) drive is operating. General LEDs 1-4 (Green/Red: 2 colors x 4) Switches to perform standalone initialization of the module. Computer module C3PU35 User's Manual...

[Page 25: Installation Requirements](#)

1.3 Installation Requirements 1.3 Installation Requirements Observe the following when planning and designing the installation environment. The installation environment must satisfy the conditions described below. Item Hard Disk Drive model Flash Disk Drive model Operating ambient 5 - 40 0 - 55 temperature Storage -10 -...

[Page 26](#) (8) Always mount the base on a vertical panel with the power supply module on the left. C3 cannot be used in a horizontal position. (9) Use M4 size screws to mount the unit and fasten securely (recommended torque: 1.47N=15kgf • cm). Computer module C3PU35 User's Manual...

[Page 27: Power Requirements](#)

1.4 Power Requirements 1.4 Power Requirements Use power module designed exclusively for the V Series. Using other power supply may result in operation error or device malfunction. Specification ITEM PS791S PS735 Rated Voltage 100/200VAC 24VDC Max. power 175W (rated)

or less 150W consumption 90% or more at 100/200Vac with 25% or more...

[Page 28](#) • Use of uninterruptible power supply is recommended in order to prevent loss of power and to protect the content of the hard disk in the event of a power failure. The content of the hard disk is not guaranteed if power is lost due to power failure. Computer module C3PU35 User's Manual...

[Page 29: Precautions When Using](#)

If the ventilation ports are blocked, heat cannot escape and fire may occur due to overheating. When there is a need for repair, contact the Toshiba service desk. • Do not touch the C3 module when the power is on. The heat radiating side covers become extremely hot (ambient temperature+20 C) when power is on.

[Page 30: Daily Cleanup And Storage/Transportation 10](#)

• Change the feeder to a coaxial cable. • Insert a commercially available filter between the electrical outlet and the power plug of the unit. 1.5.6 Repair and Service Contact your Toshiba service desk for information concerning maintenance and service. Computer module C3PU35 User's Manual...

[Page 31](#) 1.5 Precautions when using 1.5.7 Disposal Module disposal The C3 contains parts such as Lithium battery that must be disposed properly according to local government ordinance. Do not attempt to dispose the C3 on your own. Please contact your dealer and submit a request for return and disposal when disposing.

[Page 32](#) Chapter 1 Before turn on the Power Computer module C3PU35 User's Manual...

[Page 33: Installation](#)

• Be careful not to loose the removed screws. Also be careful not to drop them inside the device. • If an error or malfunction occurs, contact your Toshiba service desk. • Use drivers that is appropriate for the screw when assembling or fastening parts.

[Page 34: Installing Bases 14](#)

• Provide forced cooling if the temperature inside the case is not within specification. • Carefully consider the ventilation direction of the main unit, peripheral device, and case so that the flow of the air is not blocked. Computer module C3PU35 User's Manual...

[Page 35: Module Installation 15](#)

2.3 Module Installation 2.3 Module Installation Install the module according to the following procedure: (1) Match the guides at top and bottom of the base and insert the module vertically on the base. (2) Pass an M3 screw through the hole at the top and bottom of the module and secure the base and the module (recommended torque: 1.47N•m=15kgf•cm).

[Page 36](#) (3) Do not connect to ground of motorized system (require high frequency separation) (4) Do not connect to unstable ground (parts with unstable impedance such as screwed on painted parts or parts affected by vibration) Computer module C3PU35 User's Manual...

[Page 37: Grounding Method 17](#)

2.4 Grounding 2.4.2 Grounding method (1) Grounding of control panel In the case of connecting panel, the ground current flowing from Power panel the high frequency device or model 3000 power panel may flow through Ground the PC housing panel. current change change...

[Page 38](#) The FG terminal is a protective ground point of the model 3000. The FG terminal voltage is equalized to that of the base. For safety, ground them at single-point in order to minimize the risk of electrical shock. Computer module C3PU35 User's Manual...

[Page 39: Wiring Of The Power Supply 19](#)

2.5 Wiring of the power supply 2.5 Wiring of the power supply Wire the external power supply to model 3000 power supply module in the following manner. When using expansion units, arrange for power to be supplied simultaneously to the basic unit and the expansion units (or to

the expansion units before the basic unit).

[Page 40](#) Operation signal output terminal (RUN signal output) (RUN signal output) Grounding Grounding *1 Line filter ground (LG) 5000PF or less Power supply 5000PF or less input *2 Frame ground (FG) Connected to base unit. See '2.4 Grounding' Computer module C3PU35 User's Manual...

[Page 41](#) 2.5 Wiring of the power supply CAUTION Always turn off the power before wiring the cables. Working with the power on can cause electrocution. Use covered crimp terminals or cover the module wire with tape so that there is no exposed conducting parts. Fasten the terminal covers securely to the terminals when wiring is finished.

[Page 42: Connector Connection](#)

(2) Connect the cable of each peripheral device to the main unit connector. After connecting, tighten two screws and fasten the connector to the module. Match the connectors properly when connecting and connect firmly. Computer module C3PU35 User's Manual...

[Page 43: Handling](#)

Chapter Handling 3.1 Power On and Power Off If you are using peripheral devices, connect them before turning on the main unit power. Important • Wait at least 5 seconds when turning on the power after turning it off. If the power is turned back on too quickly, the rush current prevention circuit may not function properly and a sudden flow of current (approximately 100A) may cause the power supply fuse to blow out.

[Page 44: Power Off With Windows](#)

• The power supply of I/O modules is not turned off, either, until the C3 is shutdown. Moreover, when two or more C3s are mounted in the unit, a power supply is not turned off until all C3s are shutdown. Computer module C3PU35 User's Manual...

[Page 45: About The Hard Disk](#)

Do not disassemble. Failure to do so can cause malfunction of the drive. Important • Toshiba will not be responsible for the content of the hard disk regardless of the cause of failure or error. Please backup your data to guard against accidents.

[Page 46](#) Also, if it is used together with other cards, the heat may affect the other card. Examples of PC card • Modem card • Flash memory • SCSI adapter • LAN card Computer module C3PU35 User's Manual...

[Page 47](#) 3.3 About the PC card 3.3.1 Installation (1) Press the eject button of the PC card slot until the eject button pops out. (2) Press the eject button once more. The dummy card ejects. (3) Remove the dummy card. Store the dummy card in a safe place. (4) Check the direction and insert the PC card.

[Page 48](#) (1) Press the eject button of the PC card slot until the eject button pops out. (2) Press the eject button once more. The card ejects. (3) Hold the card firmly and pull. (4) Insert a dummy card. Computer module C3PU35 User's Manual...

[Page 49: Maintenance](#)

Chapter 4 Maintenance 4.1 Daily Inspection The following items should be inspected daily in order to maintain normal system operation and prevent unnecessary trouble from occurring. Item Inspection Description Action Check the LED in POWER (green): On when 5V Inspect the power supply front of the power power supply is normal related items under "Periodic..."

[Page 50](#) Fan unit exchange time Should be replaced after 10 years WARNING • Do not attempt to disassemble, modify, or repair. This can cause electrocution, fire, or injury. Contact the Toshiba service desk for repair. Computer module C3PU35 User's Manual...

[Page 51](#) Replacement Timing of Major Parts Listed below are the product life of major components. Periodically replace parts using this table as reference. Contact your Toshiba service desk for information concerning the price and ordering method of replacement parts. Product life of major components...

[Page 52](#) The contents of a disk may be destroyed if it exchanges immediately after turning off a power supply. • Be sure to pull out HDD Drawer metallic ornaments using tools, such as a minus driver. If a finger pulls directly, there is a possibility of removing a nail. Computer module C3PU35 User's Manual...

[Page 53](#) Replacing the Hard Disk Drive 4.4.1 How to Remove and install the HDD How to Remove How to install (1) Shift the central part of the lever on (1) A label makes it the direction which left-hand side with a minus driver becomes a right-hand side, and inserts etc., and remove the lever from the HDD in a slot.

[Page 54](#) Chapter 4 Maintenance Computer module C3PU35 User's Manual...

[Page 55: Ras Function](#)

Chapter 5 RAS Function RAS function (Reliability, Availability, Serviceability) represents the function which increases the operating performance of the C3. C3 is equipped with RAS hardware and RAS support software to facilitate the use of RAS functions. Persons in charge of design, operation, or maintenance of the C3 should have sufficient knowledge of these function in order to be ready in case of trouble.

[Page 56: Ras Function Overview](#)

From the user program Used by creating a user application program using RAS commands in VC (Visual C++) or VB (Visual Basic) for the specific purpose. Sufficient knowledge of the hardware functions is necessary to create the program. Computer module C3PU35 User's Manual...

[Page 57: Hardware Processing Ras Functions](#)

5.2 Hardware Processing RAS Functions 5.2 Hardware Processing RAS Functions 5.2.1 WDT Circuit and Hardware Reset The WDT circuit issues an NMI to the main unit when the WDT counter is not reset within a certain interval (WDT monitoring interval). The WDT monitoring interval can be set up to 500ms x 255 (approximately 2 minutes) in 500ms units.

[Page 58](#) MI events are the following: • Rise in temperature (main unit internal temperature) • Interval timer • Fan stop An interrupt occurs when the temperature becomes abnormal, fan stops, or when the interval timer expires. Computer module C3PU35 User's Manual...

[Page 59](#) □ Chapter Hardware Setup The C3 hardware can be set from the BIOS screen. Normally, the setting need not be changed. Do not change the setting unnecessarily. If it is set incorrectly, the hardware may be damaged. If you inadvertently changed it incorrectly, you must change it back to the correct setting.

[Page 60: Setting The Bios](#)

636K System RAM Passed XXXM Extended RAM Passed 256K Cache SRAM Passed System BIOS shadowed Video BIOS shadowed UMB upper limit segment address:F0DF Fixed Disk 0:(DISK Maker/Type) Press <F2> to enter SETUP BIOS startup screen Computer module C3PU35 User's Manual...

[Page 61](#) 6.1 Setting the BIOS (2) Press F2 when the BIOS startup screen appears. The BIOS main menu appears. Phoenix BIOS Setup Utility Main Advanced Boot Exit System Time [XX:XX:XX] Item Specific Help System Date [XX/XX/2000] Legacy Diskette A: [Disabled] Legacy Diskette B: [Disabled]...

[Page 62](#) Exit Discarding Changes Load Setup Defaults Discard Changes Save Changes F1 Help ↑ ↓ Select Item -/+ Change Values F9 Setup Defaults Esc Exit ↔ Select Menu Enter Select ▼ Sub-Menu F10 Save and Exit Exit screen Computer module C3PU35 User's Manual...

[Page 63](#) 6.1 Setting the BIOS Phoenix BIOS Setup Utility Main Primary Master [DISK Maker/Type] Item Specific Help Type: [Auto] Multi-Sector Transfers [XX Sectors] LBA Mode Control [Enabled] 32 Bit I/O [Disabled] [FPIO X □ DMA X] Transfer Mode F1 Help ↑ ↓ Select Item -/+ Change Values F9 Setup Defaults Esc Exit ↔...

[Page 64](#) (5) Returning to a setup at the time of shipment is based on the following procedures. a) Load Setup Default (Exit MENU) b) Legacy Diskette A: [Disabled] (Main MENU) c) PS/2 Mouse: [Disabled] (Advance MENU) d) Exit Saving Changes (Exit MENU) Computer module

[Page 65](#) Appendix A Q&A Sometimes, the device does not function as you expected or you may not know what to do next. Read this section before you suspect that the device is faulty. If an error message appears while using an operating system command, refer to the operating system manual.

[Page 66](#) Is the BIOS set correctly? Check "6.1 Setting the BIOS" An error message Refer to your application appears when using an program's operation manual. application program. Computer module C3PU35 User's Manual...

[Page 67](#) Application program cannot be used Symptom Check Action Application program Is the system configuration set Refer the operation manual of does not work as correctly? the application program and expected. change the system configuration if instructed. Application program Does the application program The application program must does not run.

[Page 68](#) If the problem is still not solved If you still cannot determine the cause of trouble, contact the service desk. Have the following information ready: • System code • Name of the equipment • Date of purchase • Current status Computer module C3PU35 User's Manual...

[Page 69](#) LAN interface Ethernet:10base-T/100base-Tx 2ch. (RJ45) Extension PC card CARD-BUS/PCMCIA Typell 2slots interface (Card current total 750mA) TOSHIBA integrated V series model 3000 station bus I/F controller V series model 3000 G3I/O module I/F Display Video RAM function CRTdisplay output Max. 1600x1200 65,536 colors...

[Page 70](#) Appendix B Device Specifications Models Product Code Memory Auxiliary storage GC3PU356 Windows 2000 512MB HDD 30GB GC3PU358 Windows 2000 512MB Flash Disk 2GB Computer module C3PU35 User's Manual...

[Page 71: Rgb Interface](#)

B.2 Interface Specifications B.2.1 RGB Interface (Note) I/Os are input/output as viewed from this device. Pin no. Signal name Description Red video signal Green video signal Blue video signal D-SUB female Unused Signal ground Signal ground Signal ground Signal ground Unused Signal ground...

[Page 72: Usb Interface](#)

(Note) I/Os are input/output as viewed from this device. Pin no. Signal name Description TPO+ Twisted pair output 10/100baseT TPO- Twisted pair output TPI + Twisted pair input Ethernet socket TPI - Twisted pair input Computer module C3PU35 User's Manual...

[Page 73: Pcmcia Card Slot](#)

B.2.5 PCMCIA card slot PC Card I/O PC Card PC Card I/O PC Card Pin no. Pin no. Function ATA Function Function ATA Function CDD3 CDD3 -CD1 -CD1 CDD4 CDD4 CDD11 CDD11 CDD5 CDD5 CDD12 CDD12 CDD6 CDD6 CDD13 CDD13 CDD7 CDD7 CDD14...

[Page 74](#) Appendix B Device Specifications Computer module C3PU35 User's Manual...

[Page 75](#) Integrated Controller series model 3000 Computer module C3PU35 User's Manual 2nd edition 12th Aug. 2005 1118.2.0508 INDUSTRIAL AND POWER SYSTEMS & SERVICES COMPANY Electrical Apparatus & Measurement Division Overseas Sales & Marketing Department - Group 3 TEL.: +81-3-3457-4894 1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan Microelectronics &...

[Page 78](#) 6F8C1118 odel 3000 Co puter odule C3PU35 User's Manual 1118.2.0508...

This manual is also suitable for:

3000V series