

TOSHIBA

Toshiba Global Commerce Solutions
TCx 300

Installation and Service Guide

Models 4810-361, 371, 381, 391, E61, E71, E81, and E91

Note:

Before using this information and the product it supports, be sure to read [Safety Information-Read This First](#), [Warranty Information](#), [Uninterruptible Power Supply Information](#), and the information under "Notices" on page 71.

March 2021

This edition applies to the Toshiba Global Commerce Solutions TCx™300, Machine Type 4810 for Models 4810-361, 371, 381, 391, E61, E71, E81, and E91; and to all subsequent releases and modifications until otherwise indicated in new editions.

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Safety

Before installing this product, read [Safety Information](#).

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الأمنية

Antes de instalar este producto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 [Safety Information](#)
(安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קוראו את ההוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報を読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este producto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítaje Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

Пре инсталирања овог производа, прочитајте Безбедносне информације.

Перш ніж встановлювати продукт, прочитайте Інформацію про безпеку.

About this guide

This guide provides product planning information, installation procedures, replacement and removal procedures, problem determination information, and orderable field-replaceable unit (FRU) parts numbers for the Toshiba® TCx™300, Machine Type 4810 for Models 361, 371, 381 and 391 point-of-sale systems.

Within this guide, the terms TCx 300 and 4610-3x1 refer to the 4810-361, 371, 381, 391, E61, E71, E81, and E91 models unless otherwise specified.

Note: The illustrations and or photographs in this publication might differ slightly from your hardware configuration.

Who should read this guide

The audience of this guide is the person who will plan, install, diagnose, and service the Toshiba® TCx™300 for 4810-361, 371, 381, 391, E61, E71, E81, and E91 models.

- Chapters 1 - 4 are intended for the end-user who plans, installs, or troubleshoots the TCx™300.
- Chapters 5, Chapter 6, and Appendix A are intended for authorized service representatives who are dispatched to remove and replace failing components.

Where to find more information

The most current versions of the Toshiba publications are available on the Toshiba Global Commerce Solutions website at <https://commerce.toshiba.com/support/publications>. The publications listed under the General tab are available to the public.

Note: Access to the product publications require valid user credentials. For information on obtaining a user ID and password, click About us, and then FAQs.

To access a specific Toshiba product publication:

1. Go to <https://commerce.toshiba.com/support/publications>.
2. Click the appropriate product category (for example, Hardware).
3. Scroll down and select the desired product.
4. Scroll down and select the appropriate manual listed under the Publications header, and the PDF will be downloaded to your computer.

Accessing the TGCS Knowledgebase site

Toshiba Global Commerce Solutions has developed a variety of Knowledgebase articles to assist you in using the Toshiba product set. To access the TGCS Knowledgebase articles:

1. Go to <https://commerce.toshiba.com/>.
2. Sign in with your Username and Password.
3. Under "Useful Tools & Links", click Knowledgebase.
4. Scroll down and select the desired article.

Driver downloads

The TCx 300 POS systems requires UPOS driver 1.9.6 or higher. Drivers are available from the Toshiba Global Commerce Solutions support site at <https://commerce.toshiba.com/support>.

1. Select the appropriate model from the Hardware drop down menu.
2. Select System Drivers under the model number related to your product.

Note: Access to download libraries requires valid user credentials. For instructions on accessing these downloads, click Learn More at the bottom of the page.

The following peripheral drivers are available for download:

- OPOS for Windows
- JavaPOS
- POS for Linux™

Additional technical information is available on the Toshiba support site.

Select Pre-sale questions under Contact Us to submit questions to TechLine.

Notice statements

Notices in this guide are defined as follows:

Note

These notices provide important tips, guidance, or advice.

Important

These notices provide information or advice that might help you avoid inconvenient or problem situations.

Attention

These notices indicate potential damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.

CAUTION

These statements indicate situations that can be potentially hazardous to you. A caution statement is placed just before the description of a potentially hazardous procedure step or situation.

DANGER

These statements indicate situations that can be potentially lethal or extremely hazardous to you. A danger statement is placed just before the description of a potentially lethal or extremely hazardous procedure step or situation.

Summary of changes

This section documents the changes to this Installation and Service Guide.

March 2021

- FRU part number updates

October 2020

- Addition of 512 GB Solid State Drive FRU

Chapter 1. Introducing the 4810-361, 371, 381, and 391 POS systems

The Toshiba TCx 300 for 4810-361, 371, 381, 391, E61, E71, E81, and E91 models consist of a PC-compatible core with ports enabling you to attach retail I/O devices. Designed specifically for distributed environments, the terminal can be mounted under a check stand or counter.



Figure 1. Front view of the 4810 POS system

[Table 1](#) includes a list of the 4810 models and a description of the processor for each model.

Table 1. Model descriptions

Model	Processor	Description
4810-361	Intel® Celeron® G4900T, 2.9 GHz	4 GB base memory (max 64 GB); no base storage included
4810-371	Intel Core i3-9100TE, up to 3.2 GHz	4 GB base memory (max 64 GB); no base storage included
4810-381	Intel Core i5-9500TE, up to 3.6 GHz	8 GB base memory (max 64 GB); no base storage included
4810-391	Intel Core i7-9700TE, up to 3.8 GHz	8GB base memory (max 64 GB); no base storage included
4810-E61	Intel Celeron G4900T, 2.9 GHz	4 GB base memory (max 64 GB); Windows preload
4810-E71	Intel Core i3-9100TE, up to 3.2 GHz	4 GB base memory (max 64 GB); Windows preload
4810-E81	Intel Core i5-9500TE, up to 3.6 GHz	8 GB base memory (max 64 GB); Windows preload

4810-E91	Intel Core i7-9700TE, up to 3.8 GHz	8 GB base memory (max 64 GB); Windows preload
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4810-3x1 and 4810-Ex1 standard features

[Table 2](#) describes the standard features of the TCx 300 4810-361, 371, 381, 391, E61, E71, E81, and E91 systems.

Table 2. Summary of features

Feature	Description
CPU	<ul style="list-style-type: none"> • Intel™ Coffee Lake Celeron™ G4900T Processor • Intel Core i3 9100 TE Processor • Intel Core i5 9500TE Processor • Intel Core i7 9700TE Processor
Core chip set	Intel Q370
I/O ports	<ul style="list-style-type: none"> • One VGA • Two DisplayPort video ports (Requires certified DisplayPort cables) • Two RS-232 ports (standard nine pin male D-shell) • Three PC USB2.0 ports (Two rear and one front) • Two USB 3.1 ports on the rear • Two USB-C ports on the rear • One TRRS audio port for: <ul style="list-style-type: none"> - Line out - Microphone • One 10 / 100 / 1000 MB Ethernet LAN (RJ45) • One RS-232 port (nine pin female D-shell) or optional 2nd VGA port • Three RS-232 serial ports (9 pin female D-shell) or two RS-232 ports with one optional 2nd VGA port • One cash drawer port, standard Toshiba 24V-compatible • RS-232 SurePort card <ul style="list-style-type: none"> - Three 5 V/12 V powered RS-232 (nine pin female D-shell) - One 12 V powered USB 2.0 - One 24 V powered USB 2.0 • USB SurePort card <ul style="list-style-type: none"> - Four 12 V powered USB 2.0 - One 24 V powered USB 2.0
Memory	DDR4 SO-DIMM (up to 2666 MHz)
Maximum memory	64 GB
DIMM sockets	4
Video	Intel HD Graphics
LAN	Intel 10/100/1000 Mbps
Clock	Nonvolatile real-time clock
Audio	Realtek ALC262

Note: USB 1.1 devices can be used with USB 2.0 and USB 3.0 ports (at USB 1.1 speeds). USB 2.0 devices can be used in the USB 3.0 port (at USB 2.0 speeds). A BIOS option is available to configure for USB 3.0 speeds.

TCx 300 system memory

This section provides information on the DIMM slots available in the TCx 300 systems, as well as configuration information to install memory modules.

Note: Only use memory provided by Toshiba Global Commerce Solutions. Not all third-party memory modules work with every product. Toshiba performs extensive life and reliability testing to ensure that the memory offered by Toshiba will operate correctly over all voltage and temperature ranges.

Table 3 includes recommendations to configure your system based on the number of DIMMs and the DIMM socket to be populated.

Table 3. Populating DIMMS in the TCx 300 models

Total system DRAM	DIMM configuration	Channel A (DIMM 1)	Channel A (DIMM 3)	Channel B (DIMM 2)	Channel B (DIMM 4)
4 GB	One 4 GB	4 GB			
8 GB	Two 4 GB	4 GB		4 GB	
8 GB	One 8 GB	8 GB			
12 GB	Three 4 GB	4 GB	4 GB	4 GB	
12 GB	One 8 GB, one 4 GB	8 GB		4 GB	
16 GB	One 16 GB	16 GB			
16 GB	Two 8 GB	8 GB		8 GB	
32 GB	Two 16 GB	16 GB		8 GB	
32 GB	One 16 GB, one 8 GB	16 GB		16 GB	
32 GB	Four 8 GB	8 GB	8 GB	8 GB	8 GB
64 GB	Four 16 GB,	16 GB	16 GB	16 GB	16 GB

All models support dual channel memory, which can provide increased performance over single channel configurations, depending on the operating system and application. An evaluation of the need for dual channel memory operation should be done on a solution-by-solution basis. Dual channel or single channel modes are configured automatically by the system BIOS when the memory configuration is first detected.

If only one DIMM is populated at a channel, populate the connection that is furthest from the CPU - DIMM0. Dual channel mode can be achieved with two, three or four DIMMs. All memory DIMMs must be either all single-sided or all dual-sided with symmetrical memory banks 0 or 1. If your configuration does not match the previous conditions, the mode will revert to single channel mode. It does not matter whether you use (or do not use) the same brand of memory, have the same DDR speed, or have the same timing specifications. The memory channel performance is determined by the slowest DIMM module populated in the system.

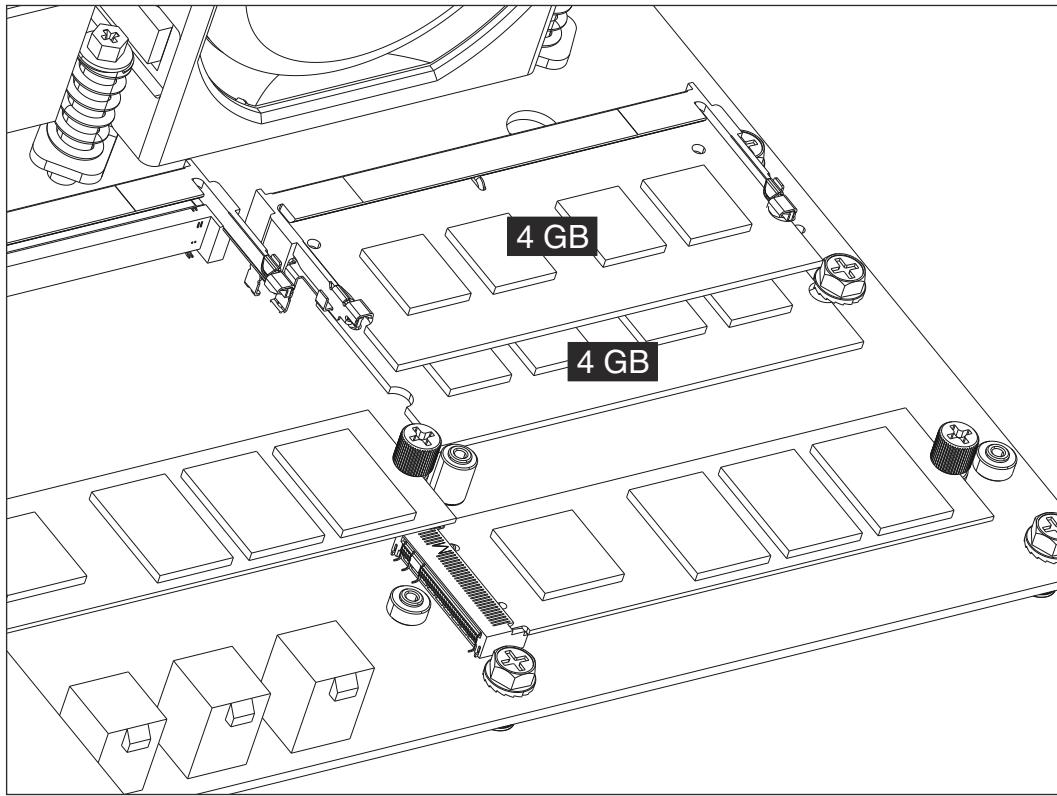


Figure 2. Example of 8 GB system memory, two 4 GB DIMMs configuration (two slots)

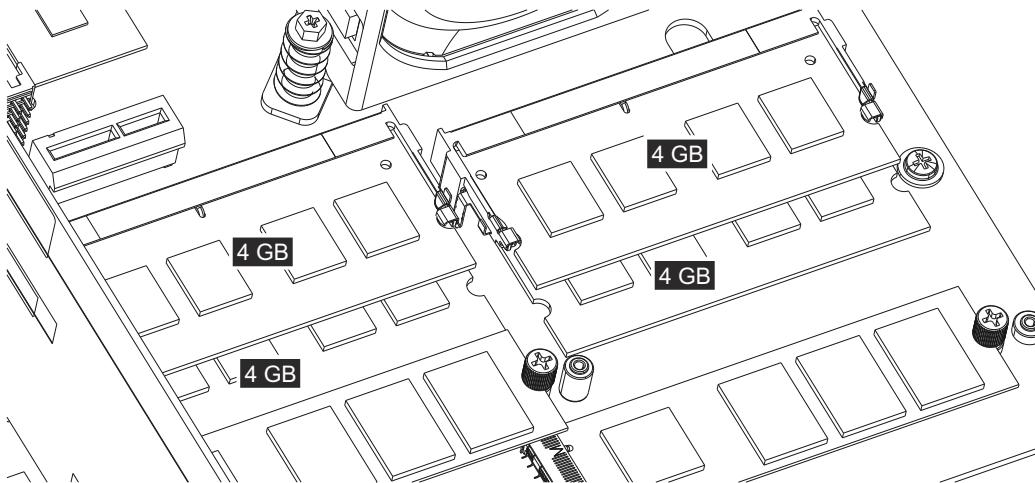


Figure 3. Example of 16 GB system memory, four 4 GB DIMMs configuration (four slots)

Identifying the indicators and controls

This section describes the controls, indicators, and connectors on the TCx 300 for 4810-361, 371, 381, 391, E61, E71, E81, and E91 POS system.

Front Controls and indicators

Figure 4 is a diagram of the front view of the TCx 300 POS system.

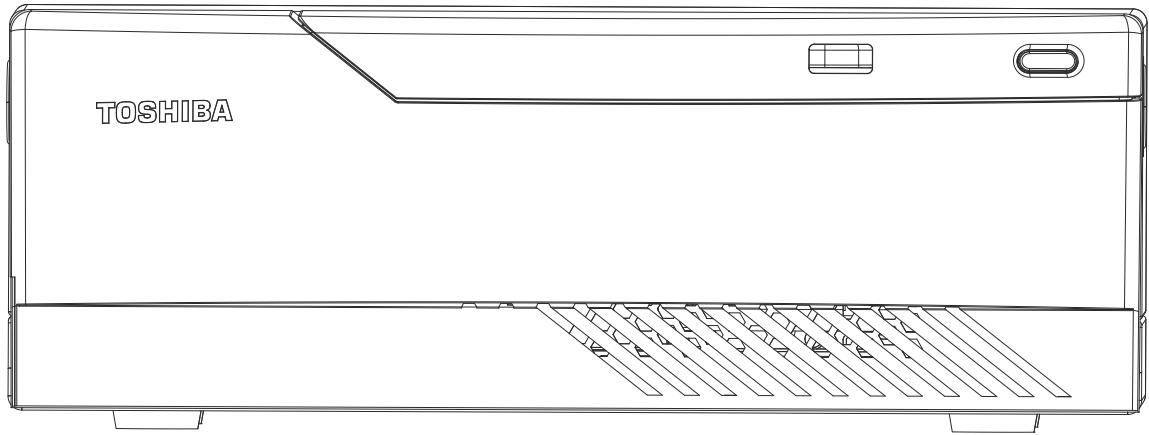


Figure 4. Front view of the TCx 300 POS system

[Table 4](#) describes the indicators included on the front cover of models TCx 300 POS system:

Table 4. Front view indicators

Indicator	Description
	Indicates a standard USB port.
	LED that indicates HDD activity
	LED that indicates the TCx 300 power state. Hold down the power button for 4 seconds to power off. Attention: Holding down the power button to turn the unit off can potentially corrupt your operating system files. Only use this method to power off the unit in extreme cases (such as the system locked up).

[Table 5](#) describes the operation of the TCx 300 front view LED indicators.

Table 5. LED operation

System state	LED state or operation
Off (No AC supplied)	OFF
Off (AC supplied) Note: This state can be entered by shutting down your system.	Low brightness
On (Normal operation)	ON
S3 (Suspend to RAM)	Blinking (1 second ON, 1 second OFF)

Rear connectors

The TCx 300 4810-361, 371, 381, 391, E61, E71, E81, and E91 POS systems are shipped with an RS-232 or USB rear panel I/O connectors.

[Figure 6](#) is a diagram of the rear panel I/O connectors with a SurePort USB card installed. [Table 7](#) describes the rear panel I/O connectors with a SurePort USB card installed.

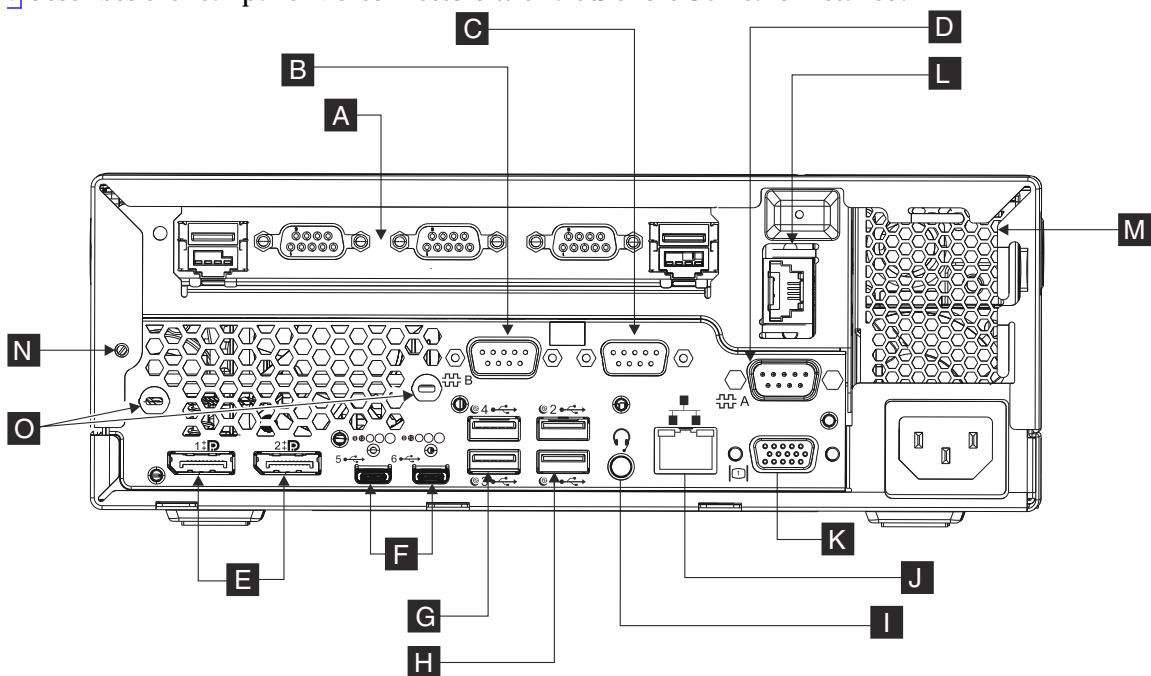


Figure 5. I/O connectors with a SurePort RS-232 card

Table 6. I/O connectors with a SurePort RS-232 card

A	RS-232 SurePort card
B	2nd serial port
C	3rd serial/optional 2nd VGA port
D	1st serial port
E	2x display ports
F	2x USB Type C ports
G	2x USB 3.0 Type A ports
H	2x USB 2.0 Type A ports
I	Audio port
J	Ethernet
K	1st VGA port
L	Cash drawer port
M	Power supply
N	Security screw location
O	Antenna connection

[Figure 6](#) is a diagram of the rear panel I/O connectors with a SurePort USB card installed. [Table 7](#) describes the rear panel I/O connectors with a SurePort USB card installed.

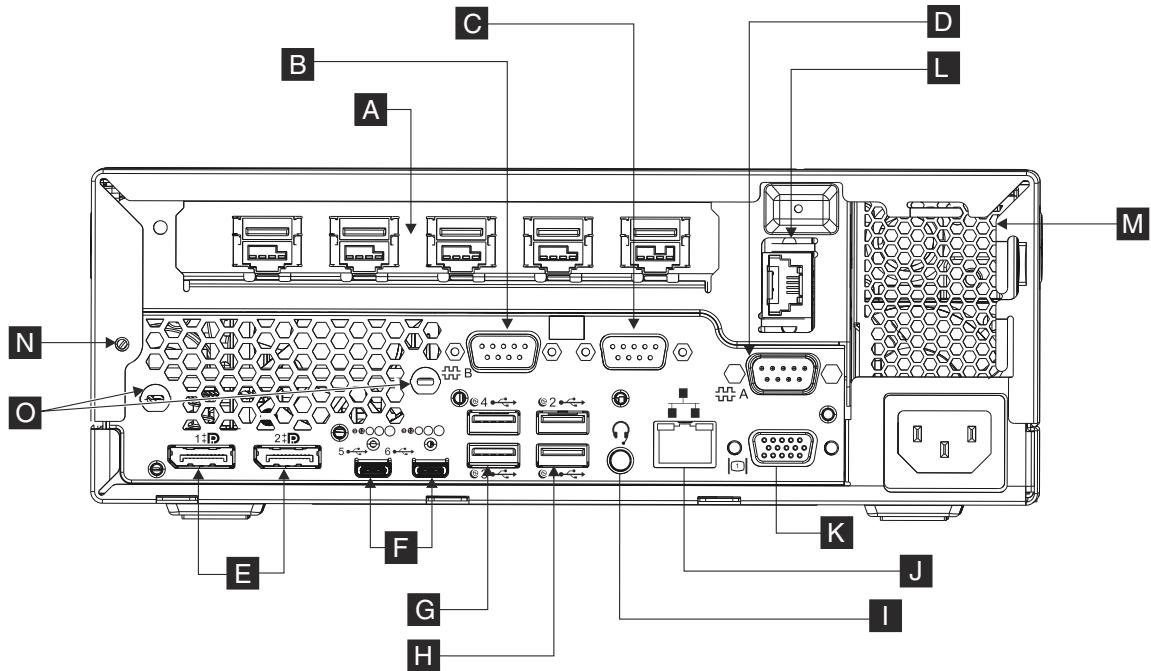


Figure 6. I/O connectors with a SurePort USB card

Table 7. Description of the I/O connectors (SurePort USB card)

A	USB SurePort card
B	2nd serial port
C	3rd serial/optional 2nd VGA port
D	1st serial port
E	2x display ports
F	2x USB Type C ports
G	2x USB 3.0 Type A ports
H	2x USB 2.0 Type A ports
I	Audio port
J	Ethernet
K	1st VGA port
L	Cash drawer port
M	Power supply
N	Security screw location
O	Antenna connection

Planning information

The section includes information to help you plan for the cables, USB devices, physical dimensions, and environmental considerations for the TCx 300 POS system.

Required classification of 24 V I/O cables (DP-1 information)

Attention: Powered USB 24 V ports are intended for use with POS printers (SureMark™ 4610). All POS printer cables are classified as UL Data-Processing Cables DP-1. For safe use of these ports, any third-party cables must meet the same requirements.

Powered USB device attachments

Attached powered USB devices should adhere to the requirements of Section 2.3.3 of the *Universal Serial Bus OEM Point-of-Sale Device Interface Specification*. Devices falling outside this specification may operate properly, but are not supported.

Note: Standard USB (5 V) devices can be plugged into any USB port on a Toshiba system unit.

Attention: Hot plugging of Powered USB devices is not supported.

Physical dimensions

[Table 8](#) describe the physical dimension for Models 4810-361, 371, 381, 391, E61, E71, E81, and E91 POS system.

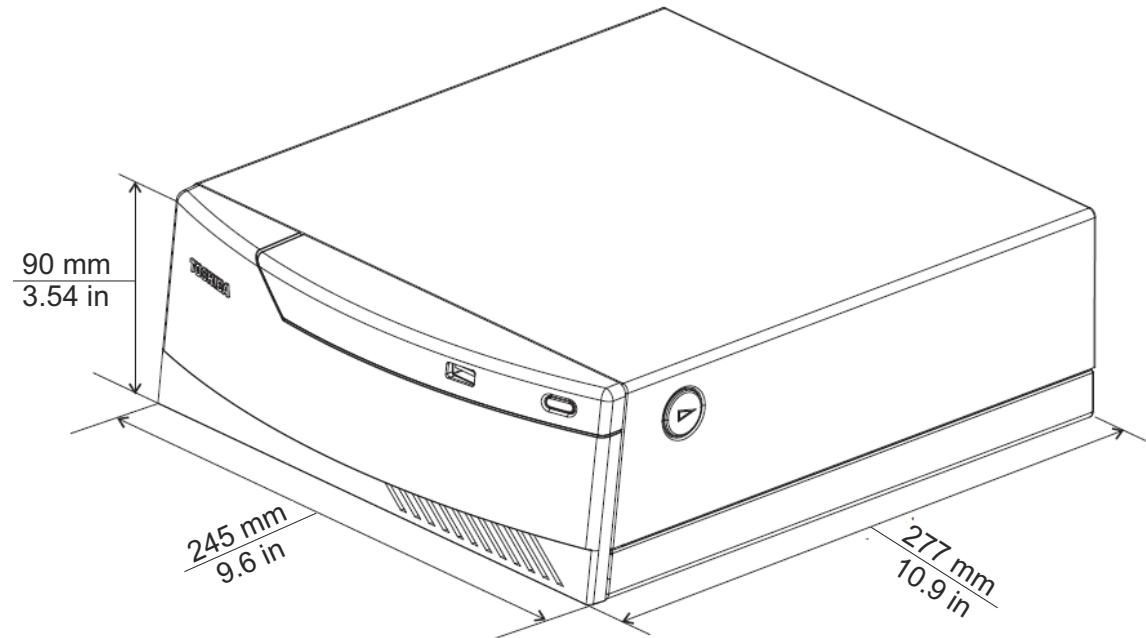


Figure 7. 4810-361, 371, 381, 391, E61, E71, E81, and E91 dimensions

Table 8. Physical dimensions

	4810-361, 371, 381, 391, E61, E71, E81, and E91 models
Width	245 mm (9.6 in.)
Depth	277 mm (10.9 in.)
Height	90 mm (3.54 in.)
Weight	4.00 kg (8.8 lb.) nominal

4810-xx1 power requirements and consumptions

This section describes the electrical and power requirements for the TCx 300 POS system.

Important:

- Do not plug the Toshiba POS system power cord into an extension cord to connect power to the system.
- A power receptacle must be readily accessible in order to disconnect the power from the Toshiba POS system.
- The Toshiba POS system should be powered from an AC branch circuit that is dedicated to the I/T equipment. The power cord supplied with the Toshiba POS system (AC power input) is dependent on the country in which your store is located.

AC power input for the TCx 300 POS system

[Table 9](#) describes the AC power input for the TCx 300 POS system.

Table 9. AC power usage

AC input voltage:	100 - 127/200 -240 VAC
Input current:	4/2 A
Input frequency:	50/60 Hz

Each system ships with an AC power cord that is compatible with your specified country's standard AC power outlet.

Danger: Only use the power cord that is Toshiba Global Commerce Solutions supplied with this system unit.

Port power ratings

[Table 10](#) describes the port power ratings for the TCx 300 POS system.

Table 10. Port power ratings

Port/name	Port Voltage Ratings	Maximum Current
Powered Serial Ports C/D/E/F	5V	1.0A /port
	12V	1.0A/port
USB 2.0 (two back and one front port)	5V	0.5A/port

Port/name	Port Voltage Ratings	Maximum Current
USB 3.0 (two rear ports)	5V	0.9A/port
12V powered USB - A	12V	2.1A/port
24V powered USB - E (24V printer)	24V	Max Continuous Duty (infinite): 500ma AVG Max Non-Continuous Duty: 9 An RMS for 1 second @ 2.25% duty cycle
Cash Drawer- CD1	24V	1.0 A / 150 ms pulse
5V USB-C port	5V	3A
12V USB-C port	12V	2.25A

Note:

1. Suspend-to-RAM (S3) wake-capable ports include:

- USB 2.0 ports 1 and 2
- USB 3.0 ports 3 and 4
- 12V powered USB port A (RS-232 connector card)
- 12V powered USB port A (USB connector card)
- Standard Toshiba 24V- compatible cash drawer port

Be aware that 12V is not present during Suspend-to-RAM (S3). Ports are enabled for wake through BIOS setup.

2. Combined, the wake-enabled USB ports 1 and 2, and, the 12V USB port can only support a maximum 5V load of 1.5A without the modular flash drive installed or 1.2A with the modular flash drive installed.
3. The total 12V current for all external loads is 5.0A.
4. The total 5V current for all external loads is 5.0A.

Environmental considerations

[Table 11](#) includes the temperature and humidity requirements for the TCx 300 POS system.

Table 11. Environmental requirements

	Temperature (dry bulb)	Maximum temperature (wet bulb)	Relative humidity
Operating	0 to 40°C (32° to 104° F)	27° C (81° F)	8% to 80%
Non-operating	0 to 52°C (32° to 125.6° F)	27° C (81° F)	8% to 80%
Storage	0 to 60°C (32° to 140° F)	29° C (84° F)	5% to 80%
Shipment	-40 to 60°C (40° to 140° F)	29° C (84° F)	5% to 100%

Note: With the exception of China, the maximum operating altitude worldwide is 3048 meters (10,000 feet). In China, the altitude limitation is up to 2000 meters.

A fan contained in the power supply provides forced-air cooling. All the vents on the front and rear of the TCx 300 system must have 51 mm (2 in.) minimum clearance.

The TCx 300 system meets applicable worldwide Electromagnetic Compatibility (EMC) standards. See the “[Notices](#)” on page 71 for a complete description.

Chapter 2. Getting started

This chapter describes the hardware, software, and operating system specifications for the TCx 300 POS systems.

Hardware information

The following items are included in your TCx 300 shipping carton:

- One TCx 300 unit
- Environmental CD
- Safety Information Booklet
- Warranty Information Booklet
- Customer-installed options, if applicable
- Hazardous Substance Table (China only)
- TCx 300 Installation and Service Guide (China only)

Note: With valid credentials, all publications are available from the Toshiba Global Commerce Solutions website at <https://commerce.toshiba.com/support/publications>.

Operating systems supported

The following operating systems are supported and preloaded on the TCx 300 4810-361, 371, 381, 391, E61, E71, E81, and E91.

- TCx Sky, Version 1, Operating Systems
- Microsoft Windows 10 IoT Enterprise LTSC 2019 (64 bit)
- Microsoft Windows 10 IoT Enterprise SAC (64 bit)
- Linux Kernel V4.14 (only POS driver support)

The following operating system is supported on the TCx 300 4810-361, 4810-381, and 4610-391 POS systems, but is not preloaded.

- Microsoft Windows 10 IoT Enterprise LTSB 2016 (64 bit)

Chapter 3. Removal and installation procedures

This section describes how to remove and install the components of the TCx 300 4810-361, 371, 381, 391, E61, E71, E81, and E91 POS systems.

The following procedures are documented in this section:

- [“Removing the top cover” on page 30](#)
- [“Removing and installing the hard disk drive” on page 31](#)
- [“Removing and installing the hard disk drive and the hard disk drive tray as an assembly” on page 32](#)
- [“Removing and installing the solid state drive” on page 33](#)
- [Removing the memory module](#)
- [Removing and installing the front panel card](#)
- [Removing and installing the I/O connector card](#)
- [Removing and installing the riser card and the I/O connector card as an assembly](#)
- [“Resetting the system board CMOS settings ” on page 41](#)
- [“Removing and installing the speaker module” on page 41](#)
- [Removing and installing the power supply](#)
- [Removing the microprocessor and heatsink](#)
- [“Removing and installing the riser card and system board battery” on page 42](#)
- [Removing the system board](#)
- [Removing the front cover](#)

Removing and installing the top cover

This section provides information for removing and installing the top cover. See [Figure 8](#) to help you complete the procedures in this section.

Removing the top cover

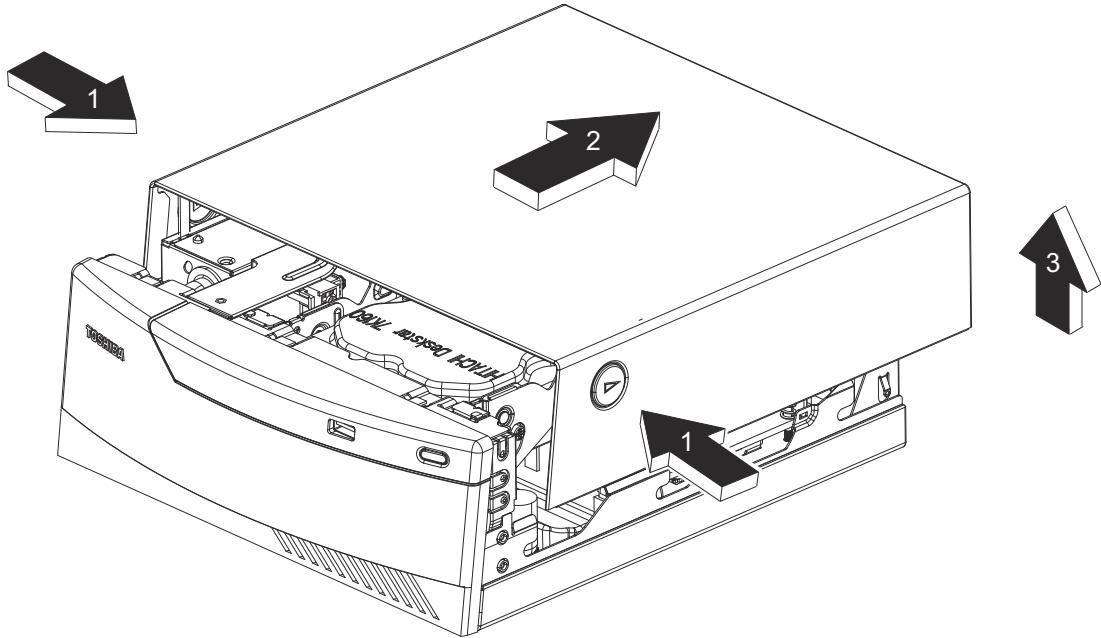


Figure 8. Removing and installing the top cover

To open the top cover:

1. Shut down the system and then turn OFF the power to the unit.
2. Unplug the power cord from the system unit.

Attention: Establish personal grounding before touching this unit

3. If included on your system, remove the security screw using the appropriate tool (Toshiba does not supply the removal tool for this feature). See [Figure 5](#) and [Figure 6](#) for the location of the optional security screw.
4. Press the side latches **1**.
5. Slide the top cover **2** back for approximately 15 mm (5/8 in.), and then lift up the top cover (as shown with arrow **3**).

Installing the top cover

To install the top cover:

1. Place the top cover so that it is approximately 15 mm (5/8 in.) from the front of the unit.
2. Slide the top forward until the latches make a clicking noise and are engaged. Check both side latches to ensure that both latches are fully latched and appear to align up evenly with the sides of the top cover.

Removing and installing the hard disk drive

This section describes how to remove, install, and replace the hard disk drive (HDD) unit. To remove the hard drive and the hard drive tray as an assembly, see [“Removing and installing the hard disk drive and the hard disk drive tray as an assembly” on page 32](#).

Removing the hard disk drive

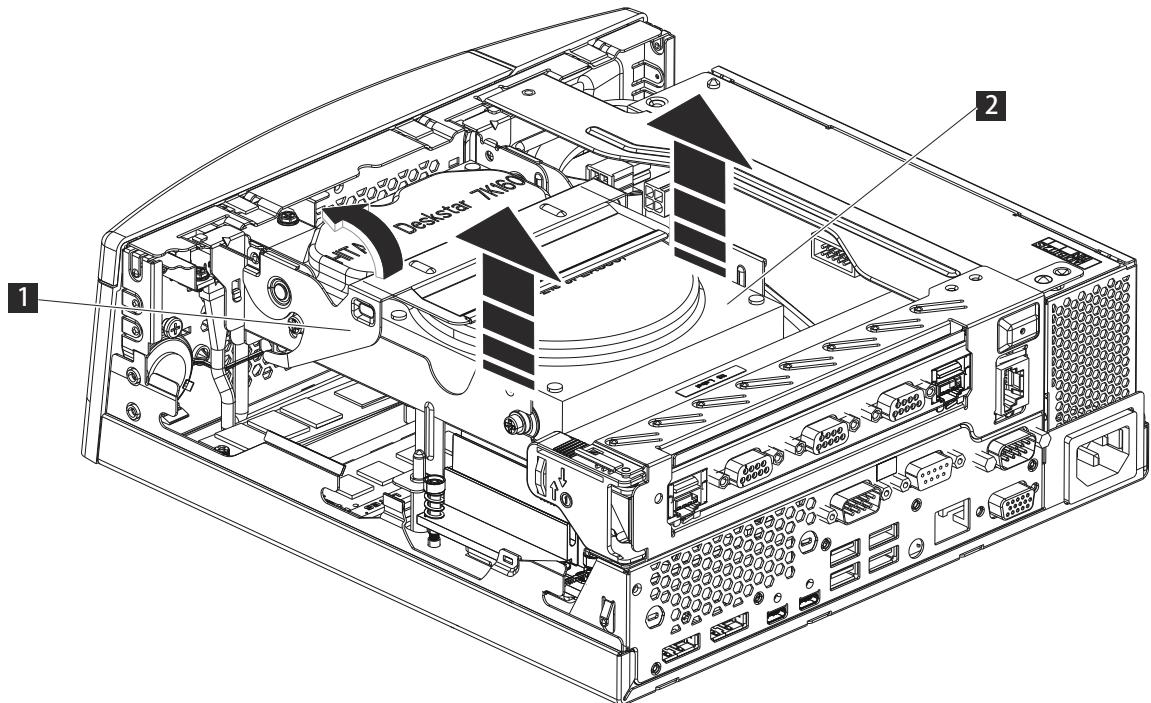


Figure 9. Removing the hard disk drive from a TCx300 unit

To remove the hard disk drive:

1. Open the unit. See [“Removing the top cover” on page 30](#).
2. Rotate the hard drive retainer **1** to the complete open position, as shown by the arrow in [Figure 9](#).
3. Grasp the hard drive on each side **2** and lift it up and out of the system unit.

Installing the hard disk drive

To install (replace) the hard disk drive:

1. Place the hard disk drive into the hard drive tray. Ensure that the hard drive connectors face the front of the system unit and that the hard drive is firmly in place.
2. Rotate the hard disk drive retainer back down to its original position.
3. Replace the cover. See [“Removing the top cover” on page 30](#).

Removing and installing the hard disk drive and the hard disk drive tray as an assembly

This section describes the procedures to remove and install the hard disk drive and hard disk drive tray as an assembly in the TCx 300 POS systems. See [Figure 1](#) when completing the procedures below.

Removing the hard disk drive and hard drive tray as an assembly

[Figure 10](#) is a diagram of the hard disk drive and hard disk tray as an assembly.

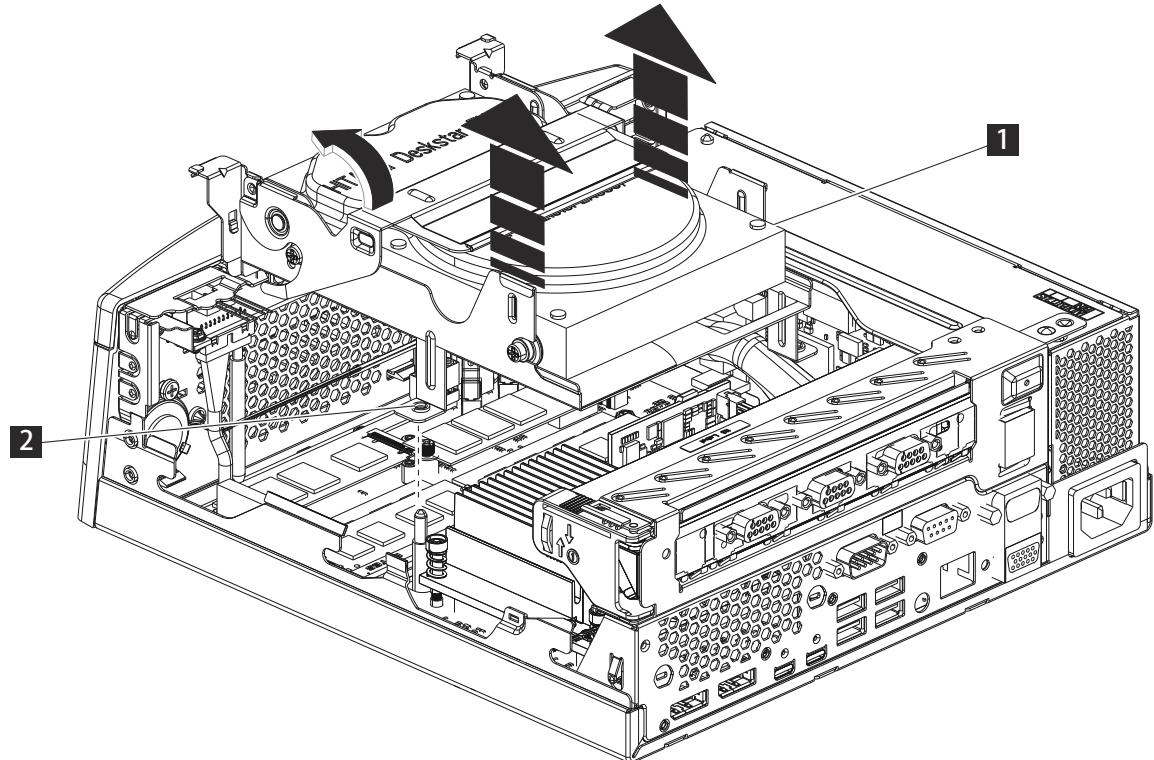


Figure 10. Removing the hard drive and hard drive tray as an assembly

To remove the hard drive and tray as an assembly:

1. Open the unit. See ["Removing the top cover" on page 30](#).
2. Grasp the tray assembly **1** where the arrows originate.
3. Disconnect the SATA cable and the SATA power cable from the system.
4. Pull the tray assembly in an upward direction as shown by the arrows; this will disengage the tray assembly retainers. Once clear of the tray assembly retainers, tilt and lift the tray to remove.

Installing the hard drive and hard drive tray as an assembly

To install the hard drive and tray as an assembly:

1. Connect the SATA cable and the SATA power cable from the system.

2. Align the hard drive tray with the alignment features **2**. Move the hard drive tray down and over the alignment features and snap into place.
3. Ensure that the hard drive is completely seated on the alignment pins and the front of the tray is correctly positioned in the slots on the chassis.
4. Replace the cover. See ["Removing the top cover" on page 30](#).

Removing and installing the solid state drive

This section provides information on removing and installing the solid state drive. See ["Removing the solid state drive"](#) to help you complete the procedures in this section.

Removing the solid state drive

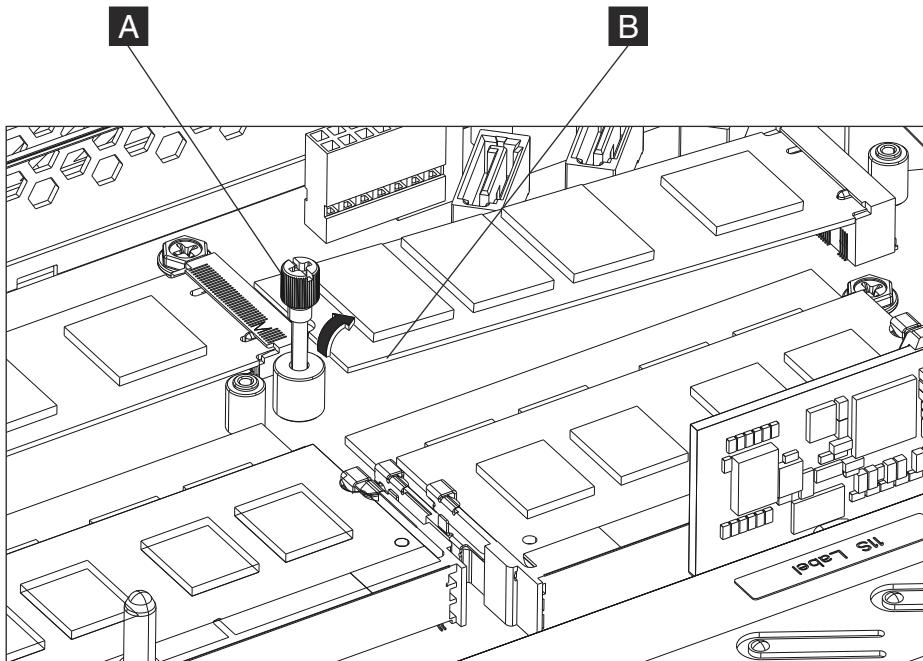


Figure 11. Removing the solid state drive

To remove the solid state drive:

1. Open the unit. See ["Removing the top cover" on page 30](#).
2. Loosen the screw **A** that secures the solid state drive (you can use a screwdriver or your fingers).
3. Grasp the solid state drive **B** and lift it up and out of the system unit.

Installing the solid state drive

To install the solid state drive:

1. Place the solid state drive onto the motherboard. Ensure that the solid state drive is firmly in place.
2. Use your fingers or a screwdriver to secure the solid state drive with screw **B**.
3. Replace the hard disk drive and tray. See [“Removing and installing the hard disk drive and the hard disk drive tray as an assembly” on page 32](#).
4. Replace the top cover. See [“Removing the top cover” on page 30](#).

Removing and installing the memory module

The TCx 300 4810-361, 371, 381, 391, E61, E71, E81, and E91 POS systems use SO-DIMM memory.

See [Figure 1](#) when completing the following procedures to remove and install the memory module.

Removing the memory module

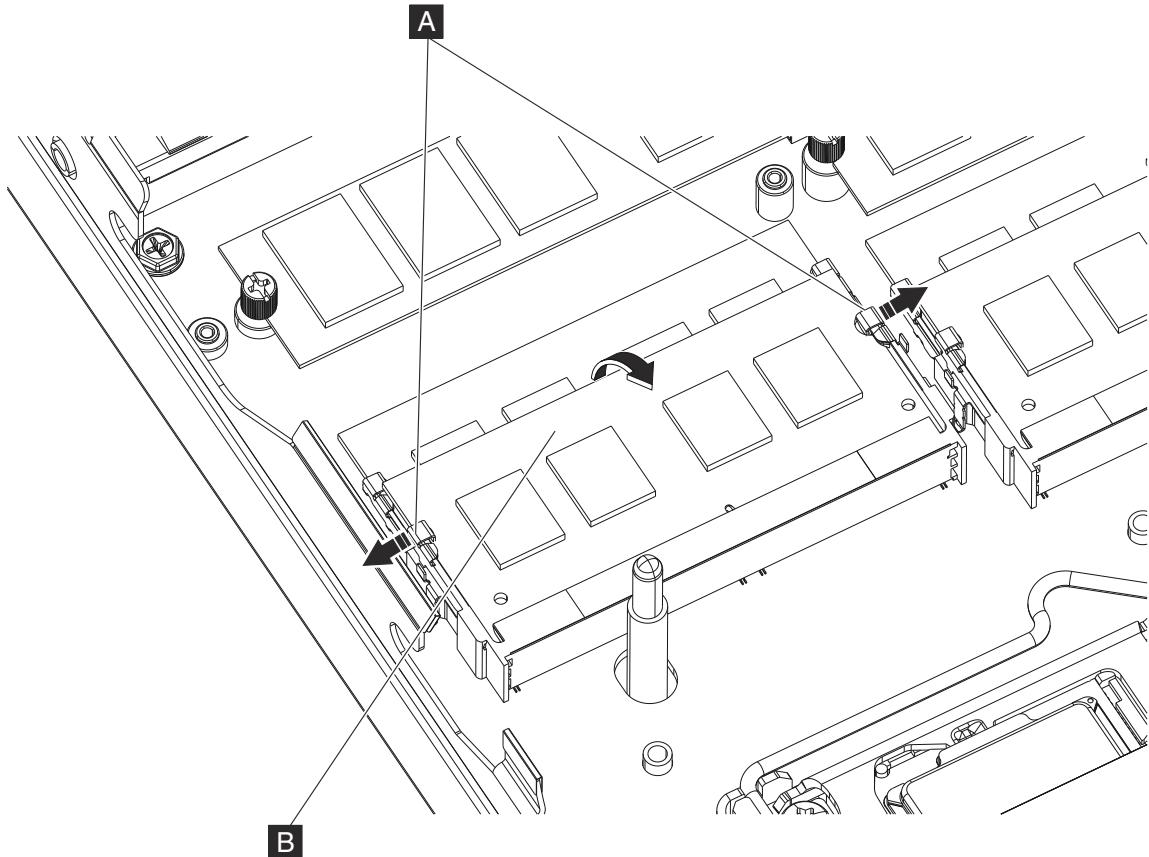


Figure 12. Removing the SO-DIMM memory

To remove the SO-DIMM:

1. Open the unit. See [“Removing the top cover” on page 30](#).
2. Remove the hard drive and tray assembly See [“Removing and installing the hard disk drive and the hard disk drive tray as an assembly” on page 32](#).
3. Press down on the retaining clips **A** on each end of the SO-DIMM connector.

4. Grasp the memory module **B** and lift it up and out of the system in the direction of the arrow.
5. Place the memory module on a static protected surface.

Installing the memory module

To install the memory module:

1. Open the retaining clips on each end of the SO-DIMM connector (see **B** in [Figure 13](#)).
 2. Touch the static-protective package containing the SO-DIMM to any unpainted metal surface on the system.
 3. Remove the SO-DIMM from the package.
- Attention: To avoid breaking the retaining clips or damaging the SO-DIMM connectors, open and close the clips gently.
4. Turn the SO-DIMM so that the SO-DIMM keys align correctly with the slot.
 5. Insert the SO-DIMM into the connector by aligning the edges of the SO-DIMM with the slots at the ends of the SO-DIMM connector.
 - a. Firmly press the SO-DIMM straight down into the connector by applying pressure on both ends simultaneously. The retaining clips (**A**) snap into the locked position when the SO-DIMM is firmly seated in the connector.
 - b. If there is a gap between the SO-DIMM and the retaining clips, the SO-DIMM has not been correctly inserted; open the retaining clips, remove the SO-DIMM, and then reinsert it.

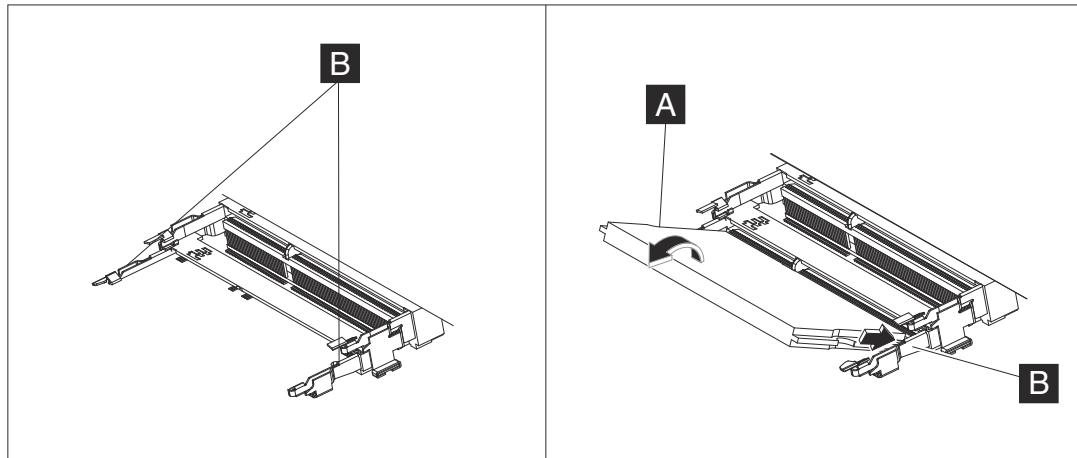


Figure 13. Inserting the SO-DIMM into the connector

6. Make sure that the white tabs are pressed in towards the center as far as they can pivot. When inserted correctly, the white tabs are completely closed.
7. Replace the hard disk drive and tray assembly. See "[Removing and installing the hard disk drive and the hard disk drive tray as an assembly](#)" on page 32.
8. Replace the top cover. See "[Removing the top cover](#)" on page 30.

Removing and installing the front panel card

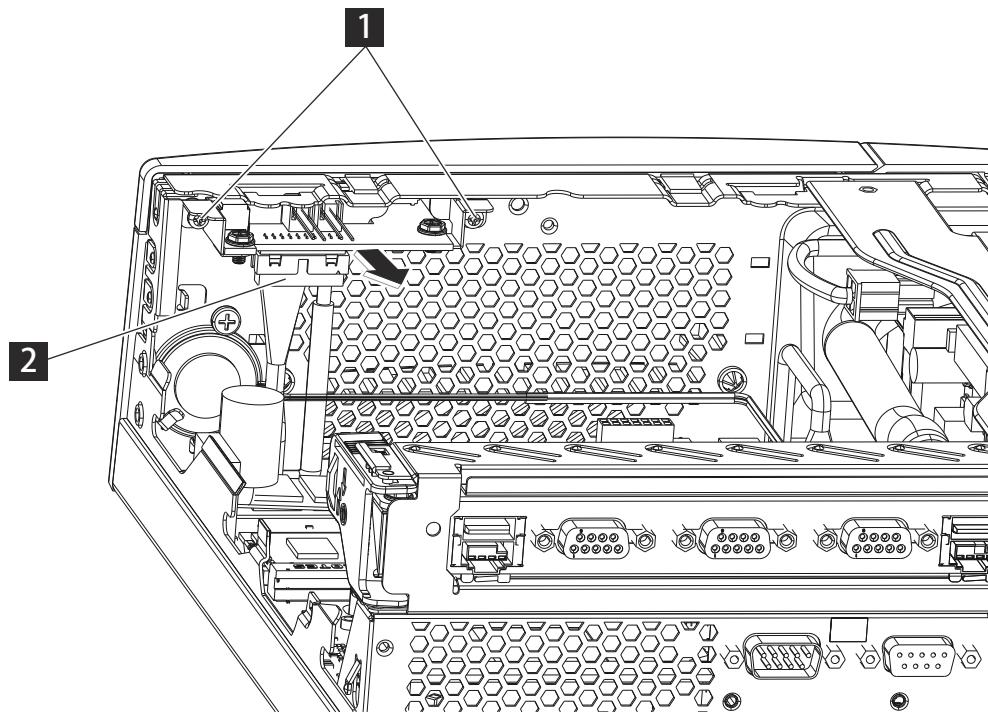


Figure 14. Removing and replacing the front-panel card

To remove the front-panel card:

1. Open the unit. See "[Removing the top cover](#)" on page 30.
2. Remove the hard disk drive and tray assembly. See "[Removing and installing the hard disk drive and the hard disk drive tray as an assembly](#)" on page 32.
3. Remove the two screws **1** that attach the front-panel card assembly to the front cover.
4. Disconnect the front-panel card cable **2** from the front-panel card.
5. Slide the front-panel card assembly out in the direction of the arrow and remove.
6. To replace the front-panel card assembly, reverse this procedure.

Removing and installing the I/O connector card

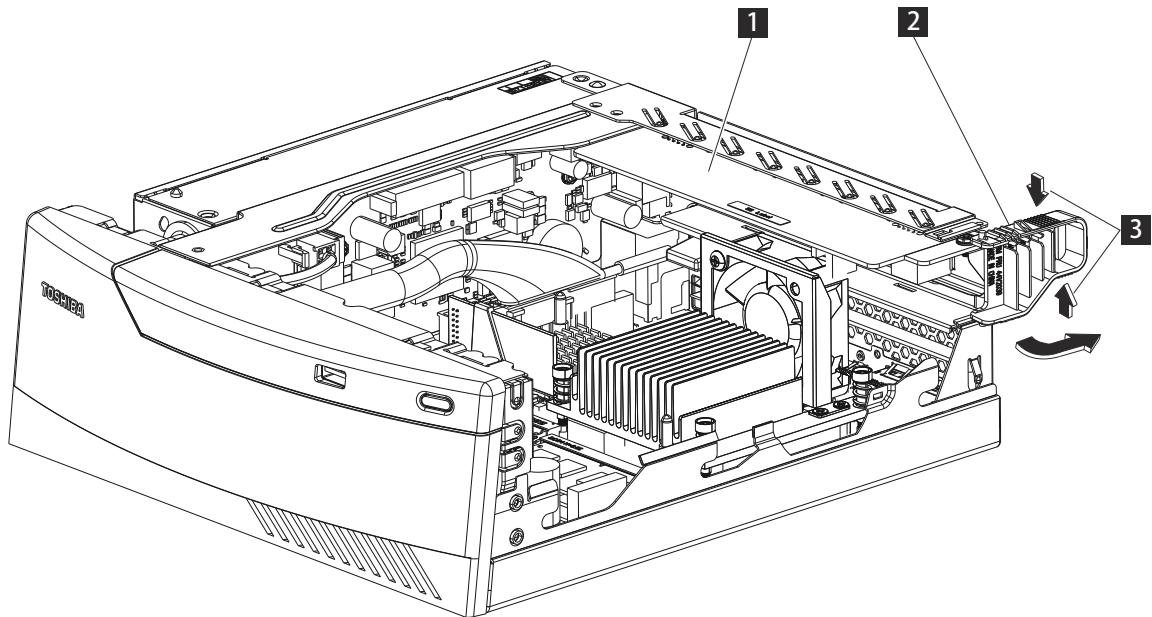


Figure 15. Removing the I/O connector card

To remove the I/O connector card:

1. Open the unit. See “[Removing the top cover](#)” on page 30.
2. Squeeze the blue plastic connector-card retainer at the top and bottom (where the two small arrows **3** are located in [Figure 15](#)) to unlatch. Rotate the I/O connector-card retainer outward to the open position **2** as shown.
3. Slide the I/O connector card **1** out of the slot.
4. To install the I/O connector card, reverse this procedure.

Note: The I/O connector card must be fully installed before the connector card latch is rotated closed.

Removing and installing the riser card and the I/O connector card as an assembly

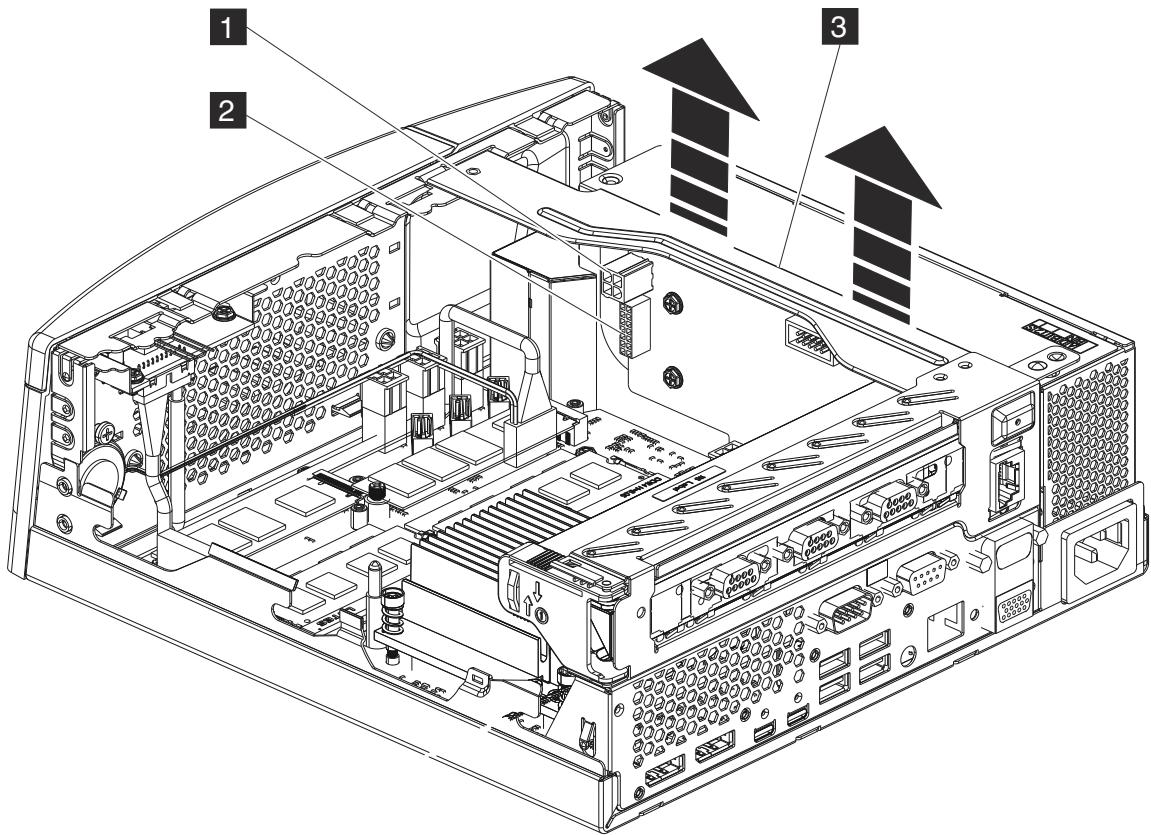


Figure 16. Removing the riser card and the I/O connector card as an assembly

To remove the riser card and the I/O connector card as an assembly:

1. Open the unit. See “[Removing the top cover](#)” on page 30.
Note: The HDD tray can remain in place.
2. Disconnect the cable **1** by pinching the latch on the connector that connects to the riser card assembly.
3. Disconnect the RS-232 cable connector **2**.
4. Lift the riser card assembly **3** up and out to access the cable.
5. To install the riser card assembly, reverse this procedure, being careful to avoid pinching the cables.
6. Be sure to press down on the riser-card assembly at the locations indicated in blue on the riser card and on the I/O connector card assembly to ensure that it is snapped into place.

Removing and installing the microprocessor and heatsink

This section provides information on removing installing the microprocessor and heatsink.

Removing the microprocessor and heatsink

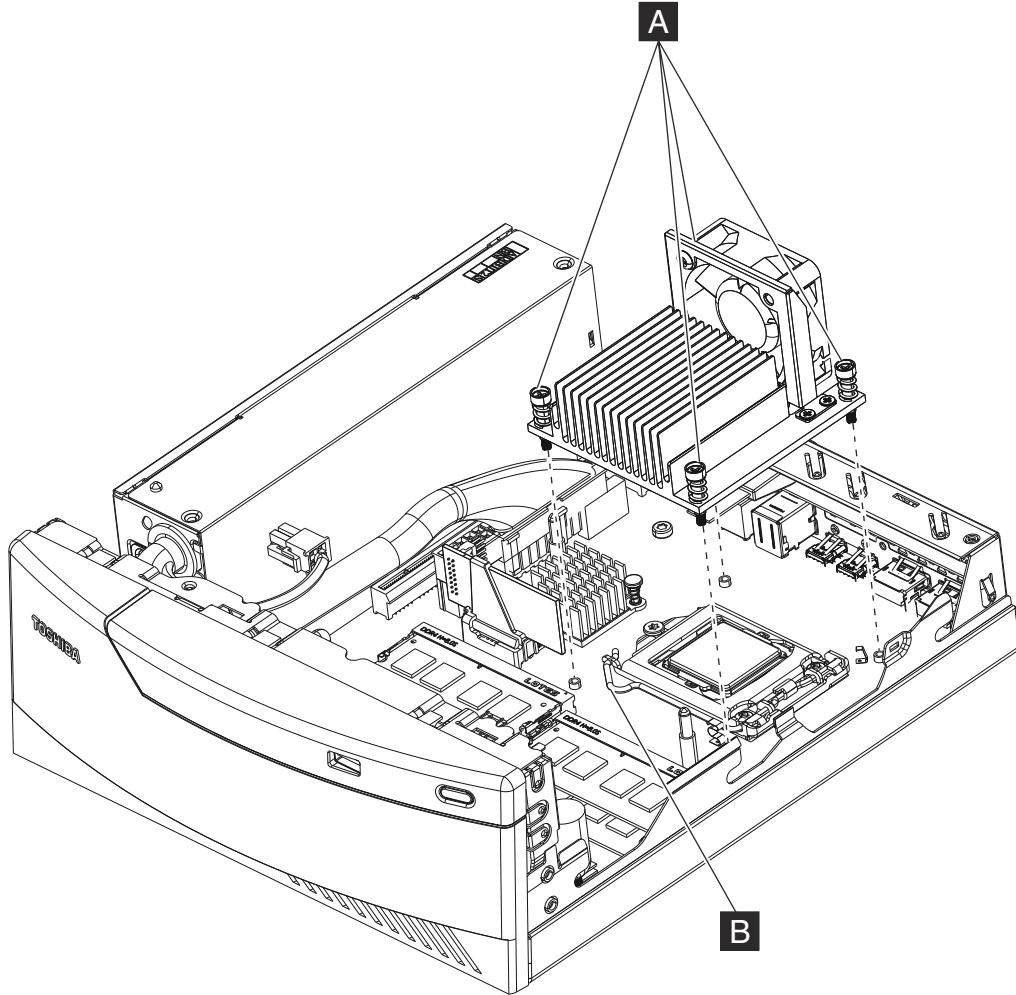


Figure 17. Removing the microprocessor heatsink

Note: If it is not necessary to remove the processor, skip the steps on removing the processor.

To remove the microprocessor and heatsink:

1. Open the unit. See ["Removing the top cover" on page 30](#).
2. Remove the hard drive assembly (see ["Removing and installing the hard disk drive and the hard disk drive tray as an assembly" on page 32](#)).
3. Lift and remove the riser card assembly. See [Removing and installing the riser card and the I/O connector card as an assembly](#).
4. Loosen two captive screws **A** on alternate sides of the heat sink fully before loosening the other two captive screws (this helps to break the bond between the heat sink and the microprocessor). After the captive screws are loosened, lift and remove the heat sink.
5. Press down on the processor retention latch **B** and move it sideways and up to unlock it.
6. Lift and remove the processor, carefully keeping your fingers on each side of the module.

Installing the microprocessor and heatsink

To install the microprocessor and heatsink:

1. Ensure the retention latch **B** on the processor socket is in the open position.
2. Align the microprocessor with the socket (note the alignment mark and the position of the notches) and then carefully place the microprocessor on the socket and close the processor socket retention latch.
3. Place the heat sink on top of the microprocessor and tighten the retention screws **A**. Alternate among the screws on either side of the heat sink until they are snug, and then alternate again until they are tight. Make sure that you do not over-tighten any of the screws.
4. Replace the riser card assembly.
5. Replace the hard disk drive assembly.
6. Replace the top cover.

Removing and installing the power supply

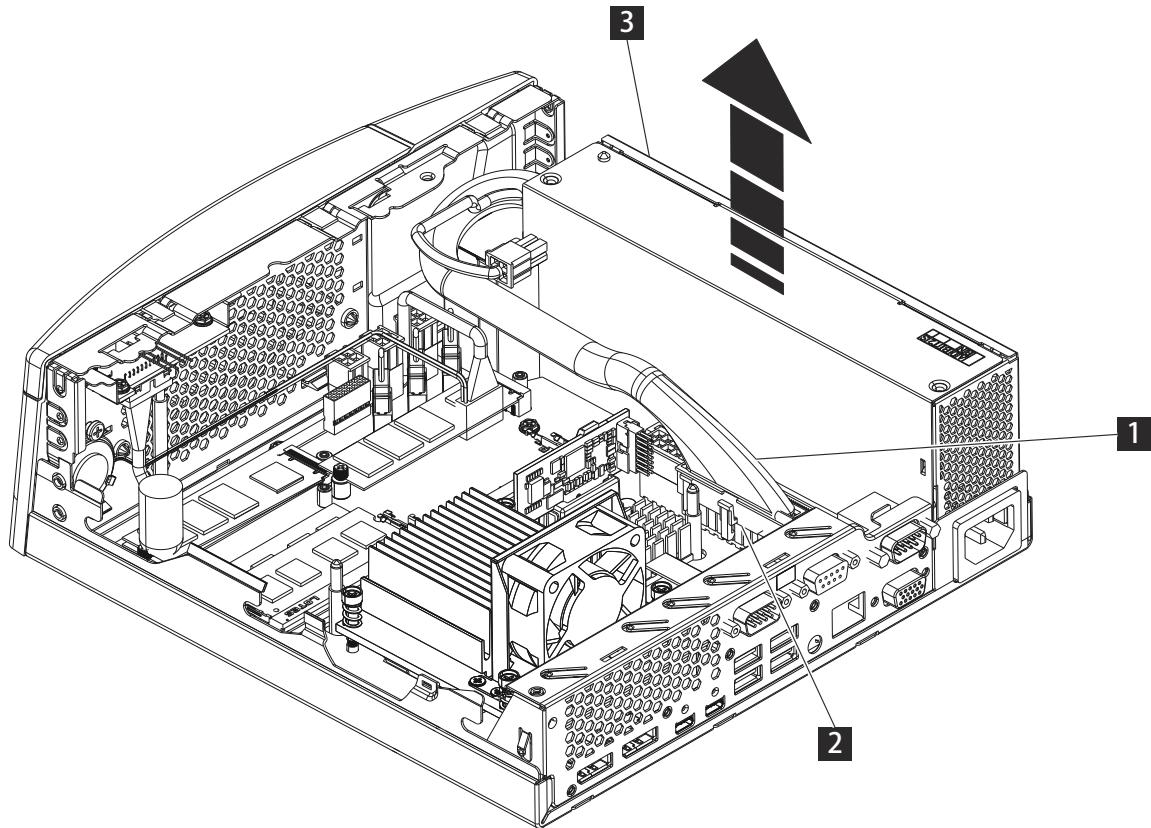


Figure 18. Removing the power supply

To remove the power supply:

1. Open the unit. See “[Removing the top cover](#)” on page 30.

Note: The HDD tray can remain in place.

1. Remove the riser card assembly. See [Removing and installing the riser card and the I/O connector card as an assembly](#).
2. Disconnect the power-supply cable **1** from the system board **2**.
3. Lift up the front end of the power supply **3** and then lift it out of the chassis.
4. To install the power supply, reverse this procedure.

Resetting the system board CMOS settings

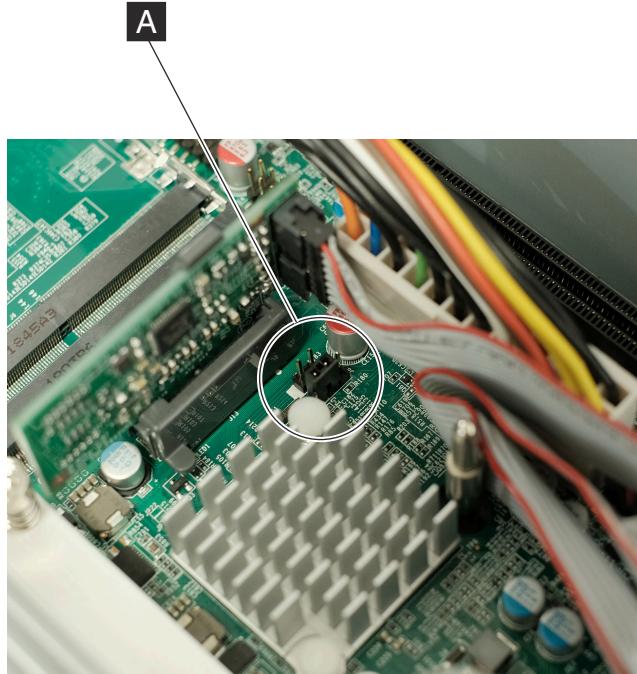


Figure 19. Locating and resetting the CMOS jumper

Follow these steps to reset the system board CMOS to the default settings:

1. Open the unit. See ["Removing the top cover" on page 30](#).
2. Remove the hard drive assembly. See ["Removing and installing the hard disk drive and the hard disk drive tray as an assembly" on page 32](#).
3. Remove the riser card and the I/O connector card. See [Removing and installing the riser card and the I/O connector card as an assembly](#).
4. Locate the CMOS jumper **A**, as shown in Figure 19.
5. Remove the jumper from the left and middle pins and place it on the middle and right pins; leave it there for at least 10 seconds.
6. Reinstall the jumper to the original position on the left and middle pins.
7. Reverse the steps to reassemble the unit.

Removing and installing the speaker module

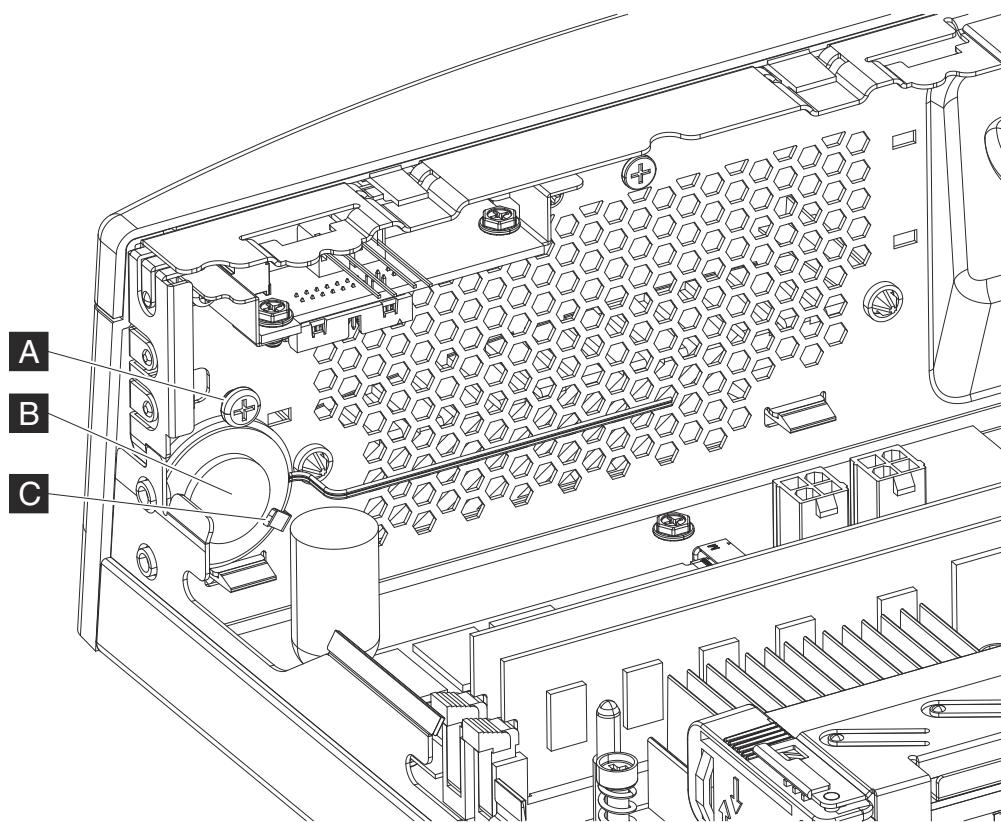


Figure 20. Removing and installing speaker module

To remove the speaker module:

1. Using a screw driver, remove the retaining screw **A**.
2. Slide the speaker module **B** from beneath the tab **C** and remove.
3. To install the speaker module, slide the edge of the speaker beneath the tab and secure it with the retaining screw.

Removing and installing the riser card and system board battery

This section provides information on removing and installing the TCx 300 batteries.

There are two batteries in the TCx 300 POS systems. [Figure 1](#) and [Figure 2](#) illustrate where the system board battery and riser card battery are located.

Note: The system board coin cell battery is a Lithium Manganese Dioxide type.

Removing the battery

To remove the system board or riser card battery:

System battery removal process only:

1. Open the unit. See [“Removing the top cover” on page 30](#).
2. Remove the hard drive assembly (see [“Removing and installing the hard disk drive and the hard disk drive tray as an assembly” on page 32](#)).
3. Press the latch **A** located on top of the battery.

4. Using the tip of a screwdriver, carefully lever the battery **B** out from under the short battery socket tabs

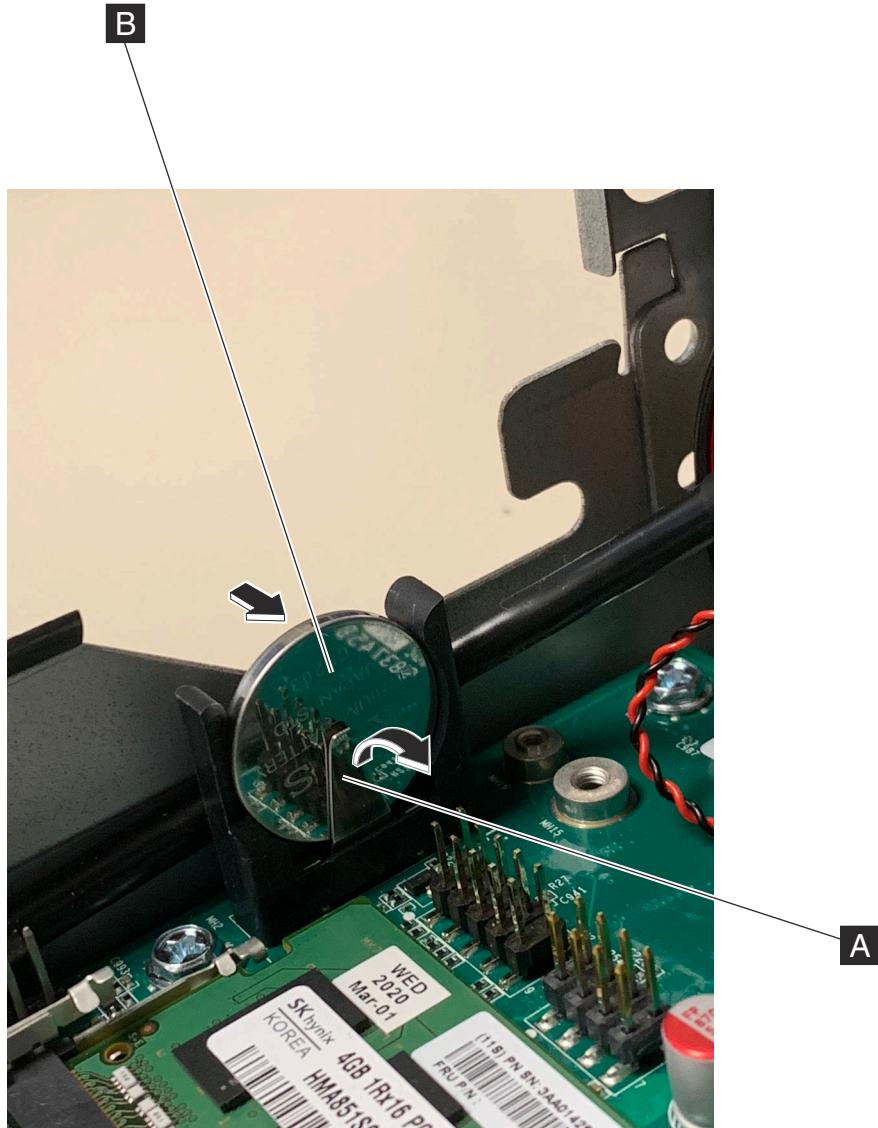


Figure 21. System board battery

Riser card battery removal only:

1. Open the unit. See ["Removing the top cover" on page 30](#).
2. Remove the hard drive assembly (see ["Removing and installing the hard disk drive and the hard disk drive tray as an assembly" on page 32](#)).
3. Disconnect the com port C and riser card power cable from the riser card.
4. Remove the riser card from the system.
5. Using the tip of a screwdriver, carefully lever the battery **A** out from under the short battery socket tabs

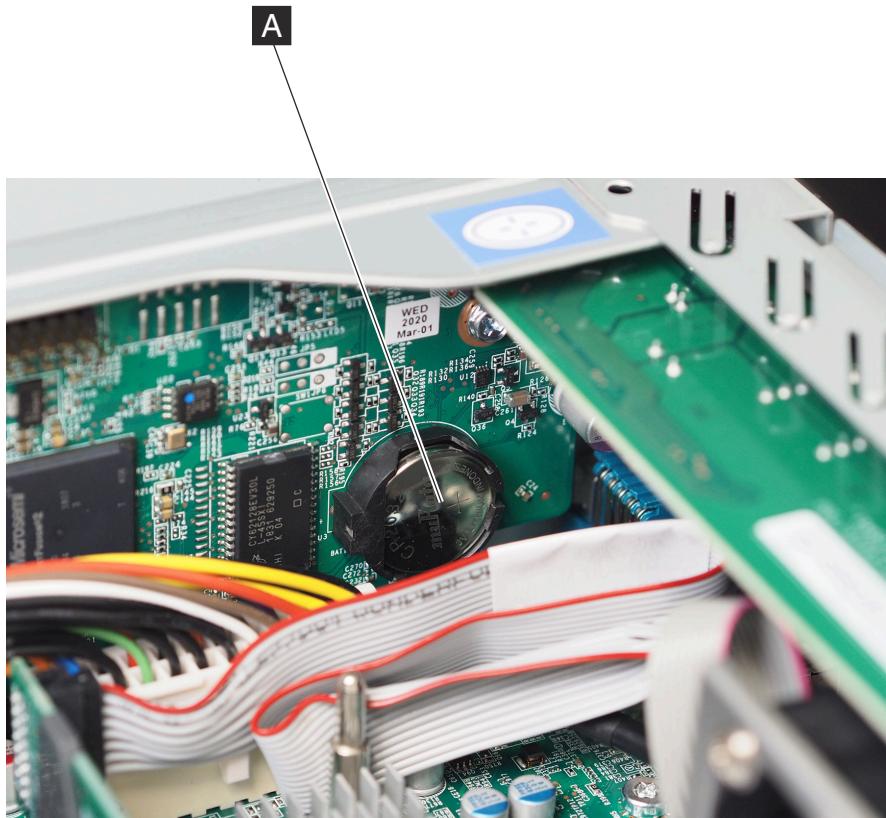


Figure 22. Riser card battery

Installing the battery

To install the riser card or system board battery:

1. Insert one edge of the battery under the longer battery socket tabs. Be sure that the battery orientation is correct (positive side UP).
2. Push down on the opposite edge of the battery to snap it into place.

Removing and installing the system board

This section provides information on removing and installing the system board.

Removing the system board

To remove the system board:

1. Open the unit. See ["Removing the top cover" on page 30](#).
2. Remove the hard drive assembly. See ["Removing and installing the hard disk drive and the hard disk drive tray as an assembly" on page 32](#).
3. Remove the riser card. See ["Removing and installing the riser card and the I/O connector card as an assembly"](#).

4. Disconnect the front-panel card cable. See [Removing and installing the front panel card](#).
5. Remove the memory. See [Removing the memory module](#).
6. Unplug the second communication cable.
7. If inside the system, remove the VGA card.
8. Remove the microprocessor and the heatsink (see [“Removing and installing the microprocessor and heatsink” on page 38](#)).
9. Remove the four system-board retaining screws **1** on the system board (see [Figure 23](#)).

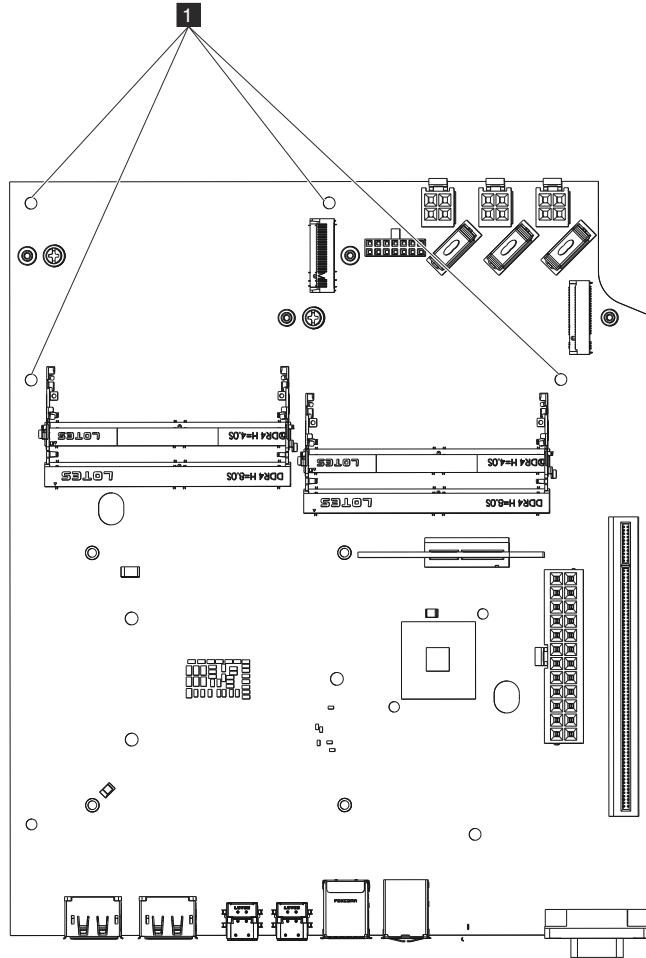


Figure 23. Removing the system board

10. Rotate the system board **2**, and then lift up to remove the system board (as shown by the arrow in [Figure 24](#)).

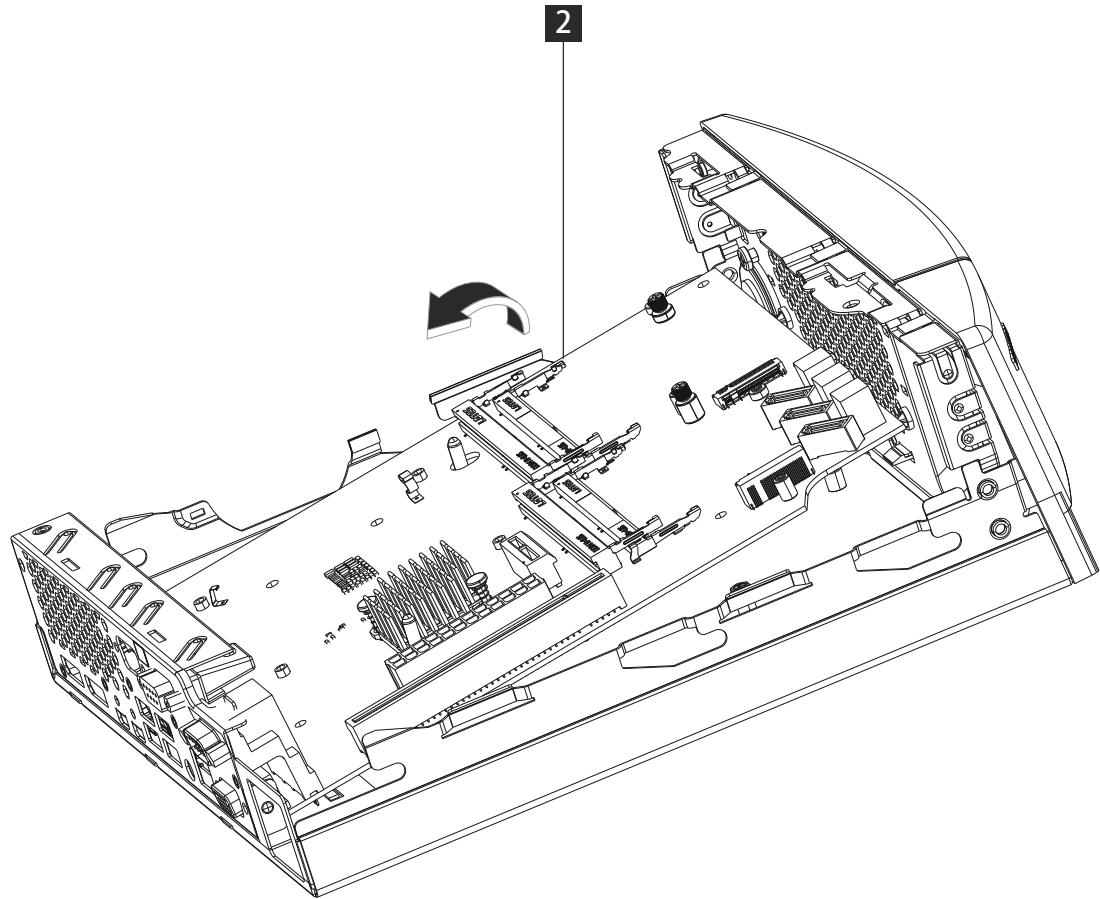


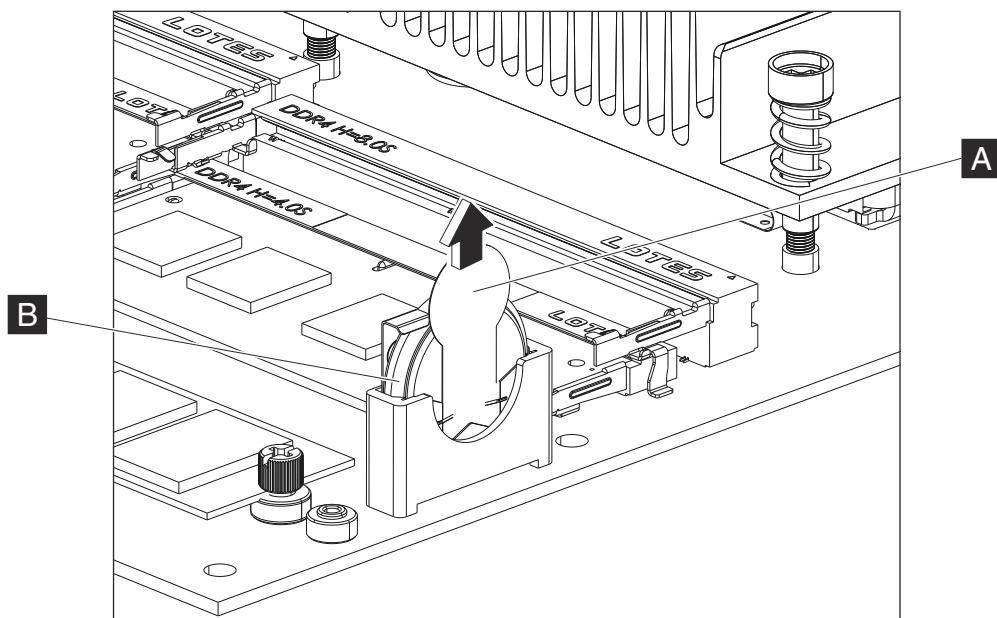
Figure 24. Tilting and removing the system board

Installing the system board

To install the system board:

1. Place the system board on the unit, inserting the alignment tabs into the chassis and aligning the board with the four screw holes.
2. Install the four retaining screws.

3. Lift up (as shown by the arrow) to remove the battery tab **A** from the battery **B**.



Removing and installing the front cover

This section provides information on removing and installing the front cover. See [Figure 1](#) to help you complete the procedures in this section.

Removing the front cover

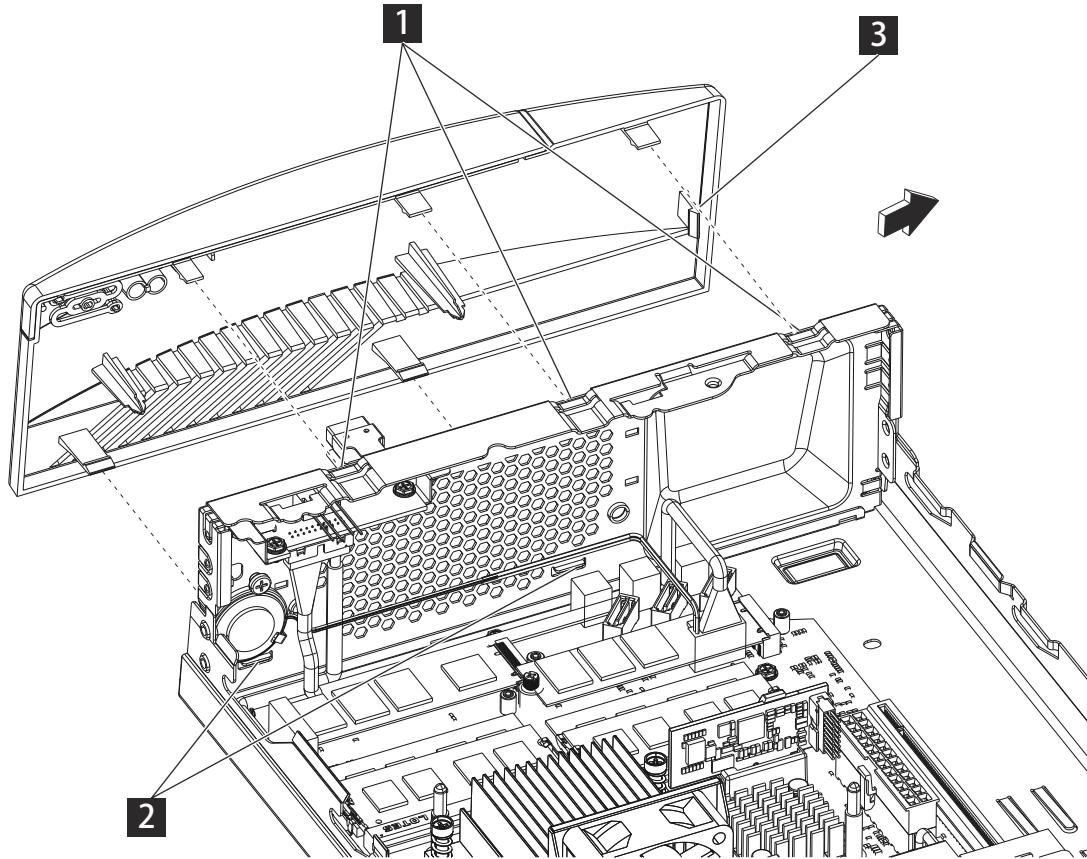


Figure 25. Removing the front cover

To remove the front cover:

1. Open the unit. See “[Removing the top cover](#)” on page 30.
2. Remove the hard drive assembly (see “[Removing and installing the hard disk drive and the hard disk drive tray as an assembly](#)” on page 32).
3. Release the bottom two retaining tabs **2** one at a time, applying pressure to separate the front cover from the chassis.
4. Release the top three retaining tabs **1** one at a time, and slide the cover to the right as indicated by the arrow to separate the front cover from the chassis.
5. Unsnap the sixth retaining tab **3** as you move the front cover toward the right .

Installing the front cover

To install the front cover:

1. Align all five of the front cover retainers.
2. Push the front cover toward the chassis and snap into position.

Chapter 4. Problem determination

Note: Refer to *Safety Information*, G362-0609, before beginning the procedures in this chapter.

Hardware failures, BIOS errors, or firmware errors can cause problems with the TCx 300 4810-361, 371, 381, 391, E61, E71, E81, and E91 POS systems. This chapter contains information to assist troubleshooting potential issues and determining the needed repair action.

Problem determination tools

The following tools can be helpful in performing problem determination with the 4810-361, 371, 381, 391, E61, E71, E81, and E91 POS systems:

- USB memory key loaded with the Diagnostics for POS Systems and Peripherals. Click Learn more under Diagnostic, on the right hand side of the Toshiba support site (<https://commerce.toshiba.com/support>) for instructions on loading diagnostics onto a memory key.
- Powered serial port wrap plug. (P/N 44V2079)
- Standard serial port wrap plug. (P/N 44V2078)
- Security screw removal tool (needed only if the customer has installed the optional, customer-supplied security screw). Neither the screw or the removal tool is supplied by Toshiba.

Supported memory keys

The following memory keys are supported for usage with the Diagnostics for POS Systems and Peripherals:

USB 2.0 (1 GB)

- FRU: 41D9746

PNY USB 2.0 (1 GB)

- Part number: P-FD01GU20-RF

Using the Diagnostics for POS Systems and Peripherals package

Diagnostics for the TCx 300 are available in the Diagnostics for POS Systems and Peripherals package. This package installs to a supported memory key, as described in ["Supported memory keys" on page 49](#)

Diagnostics memory key setup

For directions on how to set up your diagnostics memory key, see the README file that is located under the Diagnostic link on the Toshiba support site at www.toshibacommerce.com/support.

1. Obtain a memory key. See ["Supported memory keys" on page 49](#) described above.
2. Access the Toshiba support site at www.toshibacommerce.com/support.
3. Click TCx 300 under Hardware.
4. Click Downloads under your respective TCx 300 model.
5. Select Toshiba Diagnostics for POS Systems and Peripherals.
6. Download the program to a temporary location on the PC's hard-disk drive. Run the self-extracting program and respond to the messages that display. This program writes the updates and provides instructions on inserting the memory key.

7. In most cases, the Diagnostics key should boot on the TCx300 unit by inserting the USB memory key into the unit and then powering ON the system.
8. BIOS setup allows specific configuration of both the USB ports and the BIOS boot device boot order. In some cases, the configuration of these parameters might prevent the booting of the diagnostics USB memory key.
9. To ensure that the BIOS setup configuration is correct, complete the following steps:
 - a. Insert the diagnostic USB memory key.
 - b. Power ON the system.
 - c. Press DEL when prompted to enter BIOS setup.
 - d. Open the Boot menu.
 - e. Verify that the inserted diagnostics USB memory key is located at the top of the boot order.

After the diagnostic program initiates, an attached keyboard can be used, if available. The diagnostics program will ask you to accept the User License Agreement. If you have read and agree to the user license agreement, click the I Agree button. The next screen contains a selection menu for System Components, Point of Sale Devices, and Utilities (for VPD, and others) with sub-menus dynamically-tailored for the TCx 300.

Troubleshooting

This section includes a list of items to consider when diagnosing your TCx 300 Series unit:

- The preliminary checklist provides items to be verified at the start of each service call.
- The problem symptoms table provides a list of potential problem reports, along with the recommended problem determination steps to perform.
- [Table 15](#) provides a list of the main service parts and recommended steps to perform if that part is suspected of being defective.

Preliminary checklist

Begin each service call by checking all the items in this preliminary checklist. If, after performing all the steps, a problem still exists, see [Table 14](#) to help you identify the possible problem.

1. Verify that the power and device communication cables are securely and correctly connected.
2. Verify that any externally-powered I/O devices connected to an AC power outlet are operating correctly and that the devices are powered ON.
3. Verify that the contrast and brightness controls on the video display (if attached) are set correctly.
4. Observe the power indicator. The power indicator LED operation is shown in [Table 5](#).
5. If the machine will boot, reboot the machine (without the USB memory key installed) and listen to the beep codes. If a monitor is attached, observe the system health check status (see [Table 12](#)).

Note: Be sure to observe the customer-reported symptom prior to booting with the memory key.

1. If the front USB port is disabled, use another USB port if possible. If booting from the USB key is disabled, see “[Diagnostics memory key setup](#)” on page 49, Step 8 (item a).

Power LED operation

The powered LED functions as an indicator of the system power state. [Table 5](#) defines the operation of the power LED.

Beep codes

The following table describes the beep codes that you might hear during servicing of the TCx 300 and what the beep tones mean.

Table 12. Beep Codes

Beeps	System state
Continuous tone immediately after powering ON	No memory - All inserted memory failed
One short beep after POST completion	Major POST start

POST messages displayed to the system monitor

The following table summarizes all messages that may be displayed on the system monitor during POST.

Table 13. POST messages displayed to the system monitor

Message	Meaning/action
Hard Disk S.M.A.R.T. Failure	The hard disk is reporting an internal error that may result in the loss of data. It is recommended that all relevant data on the drive be moved to safe storage media.

Symptoms

The following table summarizes symptoms of common problems for the TCx 300.

Table 14. Problem symptoms table

Symptom	Actions
System unit does not boot	<ol style="list-style-type: none">1. Unplug from the power outlet, wait at least 5 seconds, re-plug the power outlet, and then power ON. Verify that the power light on the front panel is ON. Look for any error messages on an attached monitor and listen for a beep at the completion of POST.2. Disconnect all I/O devices and power ON the system. If the system powers ON and boots up correctly, then the problem is likely to be an I/O device. Reconnect each device one at a time, from the powered OFF state, booting the system

Symptom	Actions
	<p>completely after each device connection. If the system does not power up after connecting a device, then that device or cable is likely the failure point.</p> <ol style="list-style-type: none"> 3. Check for a blown fuse, a tripped circuit breaker, or a power failure. 4. Verify that all internal cables are securely connected.
Power LED does not light and the system boots	<ol style="list-style-type: none"> 1. Replace the front panel card/cable assembly. 2. Replace the system board.
Time of day not maintained across AC removal	Replace the system battery.
System getting blue screens	<p>Often, blue screens are caused by OS, driver, or application software issues. Diagnosing blue screens should be handled through a software diagnostic path.</p> <p>To determine if the hardware has contributed to a blue screen situation, run the system unit diagnostics, including running the extended diagnostics for the hard drive.</p>
Slow system behavior	Run the system unit diagnostics test to determine if the system unit hardware is having any problems detected by the diagnostics; if not, invoke a software diagnostic path.
Ethernet connection slow	Run the system unit diagnostics test, including the Ethernet test, while the system is connected to the Ethernet; if not, invoke a software diagnostic path.
No audio	Confirm that speaker cables are securely plugged into the system unit. Run the system unit diagnostics test, including the audio test. Confirm that the proper audio driver is installed.
No video	<ol style="list-style-type: none"> 1. Confirm that the monitor power cord is attached. 2. Confirm that there is a solid connection of the video cable to the system unit in the correct monitor port. 3. Ensure that the monitor is powered ON. 4. Perform monitor diagnostics.
Serial I/O device not working	<ol style="list-style-type: none"> 1. Examine the device cable and replace if indicated. 2. Run self-tests on the device and replace if indicated. 3. Use the diagnostic program and the appropriate wrap plug tool. If this test is successful, then the problem relates to the I/O device or to a non-hardware system software problem. 4. Replace a SurePort card if the port is part of the SurePort card.
USB I/O device not working	Confirm operation of the I/O port USB connection using the memory key to boot diagnostics through that port.

Symptom	Actions
Cash drawer not working	<p>Note: The cash drawer port is located on the riser card.</p> <ol style="list-style-type: none"> 1. Boot the diagnostics memory key. 2. Choose the POS I/O tests from the main screen. Check to see if the cash drawer test displays on the screen; if this test does not display, replace the riser card. 3. If the cash drawer test displays on the screen, run the cash drawer diagnostic test. If the cash drawer diagnostic test passes, the cash drawer is functioning. <p>If the cash drawer diagnostic test does not pass, attach a known "good" cash drawer mechanism and run the cash drawer test again. If the test still does not pass, replace the riser card. If the test passes, replace the cash drawer.</p>
HDD not enumerated by POST, OS does not boot.	Follow the steps in Table 13 .
Continuous tone after POST	<ol style="list-style-type: none"> 1. Confirm presence and proper seating of the memory module. 2. If a DIMM socket is available, move the memory module to the other socket. 3. Replace the memory module.

Suspected Fault

Based on the symptoms, if a fault is suspected in a particular FRU, complete the confirming checks in [Table 15](#).

Table 15. Suspected fault

FRU	Evaluation
HDD	<ol style="list-style-type: none"> 1. During POST, verify that the HDD Health Check runs successfully. 2. Examine the boot sequence in the BIOS setup. Verify HDD is in the boot sequence. 3. Run the diagnostics, including the extended diagnostics for the hard drive. 4. Verify that the HDD connector is fully seated into the HDD card connector. 5. If the HDD tests pass, the file system might be corrupt. Refer to the operating system recovery process for additional information.
HDD card/tray assembly	<ol style="list-style-type: none"> 1. Verify that HDD connector is fully seated into the HDD card connector

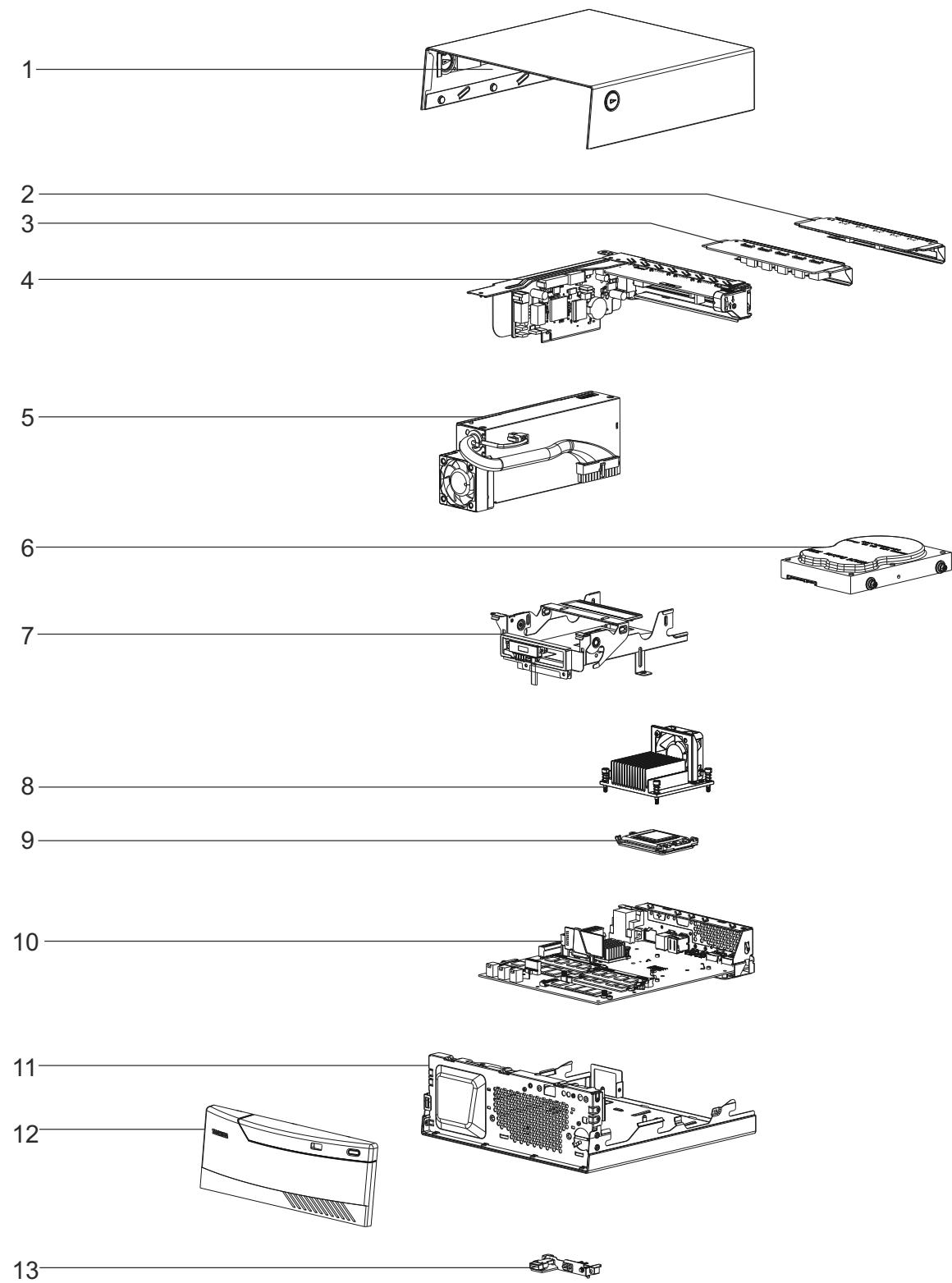
FRU	Evaluation
	<p>2. Examine for interface card damage. Replace if damaged.</p> <p>3. Confirm proper seating of the HDD interface card in the system board connector.</p>
Modular flash drive	Run the system unit tests. Does the system unit test identify the modular flash drive as an option? If not, replace the flash drive. If it does, run the test for the modular flash drive. Does the test pass? If not, replace the flash drive.
System Board	<p>1. During POST, verify that the system board check program runs successfully. If not, remove and re-seat all cables and board-board connections as follows:</p> <ul style="list-style-type: none"> • Riser • Power Connector • Power switch card cable • Memory • HDD Assembly <p>Note: Disconnect all external cables and reconnect one at a time from the powered OFF state. Power ON completely after each device connection to determine if a device is causing a problem.</p> <p>2. Clear CMOS with the jumper.</p> <p>3. If none of these items are causing the problem with the port, use diagnostics to perform the wrap plug test on the serial port.</p> <p>4. Shut down your system between each reboot to avoid file corruption.</p>
USB Connector Card	Try booting the USB key in the questionable USB port. Between each boot sequence, shut down the unit to prevent file corruption.
RS-232 Connector card	<p>1. Try booting the USB key in the questionable USB port.</p> <p>2. Use the diagnostic wrap plug test on the suspected serial port.</p>
Memory Module	Run the system unit diagnostic tests. During boot of the diagnostic memory key, a memory test is run. Upon completion of the test, press the ENTER key to request the extended diagnostic test for the memory.
Power Supply	<p>1. Verify that AC power is available at the power outlet.</p>

FRU	Evaluation
	<ol style="list-style-type: none"> 2. Verify that the power cord is plugged into the outlet. 3. Reseat the power cord in the system unit. 4. Connect the system unit with a different power cord. 5. Reseat the two power supply cables inside the system unit.
Battery/coin cell	<ol style="list-style-type: none"> 1. Check that the battery is installed properly. 2. Re-seat the battery.
IO Connector Card Latch	Physical examination.
Top Cover	Physical examination.

Chapter 5. Parts catalog

This chapter provides parts information available for the TCx 300 POS systems.

Assembly 1: TCx 300 field-replaceable units



Asm-Index	Part Number	Units	Description
1-1	3AC00503400 (15R4921)	1	Top cover
-2	3AC00730100 (01KE467)	1	RS-232 SurePort card ASM
-3	3AC00502400 (15R4911)	1	USB SurePort card ASM
-	3AC00504100 (15R4928)	1	Female powered 9 pin RS-232 port C
-4	3AC00503800 (15R4925)	1	Riser card ASM with NVRAM
-	44V2039	1	I/O connector card latch
-5	3AC00605800 (01KE983)	1	Power supply
-6	3AC00730700 (01KE474)	1	HDD ASM, 1 TB
-7	3AC00729200 (15R4930)	1	HDD tray/SATA cable bracket ASM
-	3AC00730500 (01KE472)	1	SSD ASM, 128 GB (not shown)
-	3AC00730600 (01KE473)	1	SSD ASM, 256 GB (not shown)
-	3AC01110500	1	SSD ASM, 512 GB (not shown)
-8	3AC00909900 (01KE411)	1	Microprocessor heatsink
-9	3AC00731000 (01KE475)	1	Microprocessor, Intel Coffee Lake Celeron G4900T (4810-361)
-9	3AC00731100 (01KE476)	1	Microprocessor, Intel Core i3-9100 TE (4810-371)
-9	3AC00729600 (01KE409)	1	Microprocessor, Intel Core i5-9500TE (4810-381)
-9	3AC00729700 (01KE410)	1	Microprocessor, Intel Core i7-9700TE (4810-391)
-10	3AC00730000 (01KE466)	1	System board with Windows 10 key
-10	3AC00729900 (01KE465)	1	System board without Windows 10 key
-12	3AC00503900 (15R4926)	1	Front Bezel ASM

Asm-Index	Part Number	Units	Description
-13	3AC00503500 (15R4922)	1	Front panel card
-	3AC00503600 (15R4923)	1	Speaker
-	3AC00730200 (01KE469)	1	Memory module, 4 GB, SO-DIMM
-	3AC00730300 (01KE470)	1	Memory module, 8 GB, SO-DIMM
-	3AC00730400 (01KE471)	1	Memory module, 16 GB, SO-DIMM
-	45P6222	1	Coin cell battery (Maxell CR2032)
-	44V2078	1	Tool, Wrap plug, 9 pin standard RS-232
-	44V2079	1	Tool, Wrap plug, 9 pin powered RS-232
-	44V2011	1	Cable, 40 char/APA VFD/LCD customer display, 9-pin powered serial, 3.8 meter
-	44V2048	1	Value Cash drawer, black

Chapter 6. Power cords

The chapter includes a list of the power cords by country that are compatible with TCx 300 terminals.

Part Number	Description	Country
80Y3301	4.3m power cord	Bangladesh, Lesotho, Macao, Namibia, Pakistan, South Africa, Sri Lanka, Swaziland
80Y3325	4.3m power cord	Switzerland
80Y3404	2.8m power cord	Brazil
80Y3368	4.3m power cord	Argentina, Paraguay, Uruguay
80Y3374	4.3m power cord	Anguilla, Aruba, Bahamas, Barbados, Bermuda, Bolivia, Canada, Cayman Islands, Columbia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, Saudi Arabia, Thailand, Turks and Caicos Islands, Venezuela, and Virgin Islands (British)
80Y3378	4.3m power cord	Australia and New Zealand
80Y3382	4.3m power cord	Albania, Algeria, Angola, Armenia, Austria, Azerbaijan, Belarus, Belgium, Benin, Bosnia and Herzegovina, Bulgaria, Burkina Faso, Burundi, Cameroon (United Republic of), Cape Verde, Central African Republic, Chad, Congo, Cote d'Ivoire (Ivory Coast), Croatia, Czech Republic, Djibouti, Egypt, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Finland, France, Gabon, Georgia, Germany, Greece, Greenland, Guinea, Guinea Conakry, Guinea-Bissau, Hungary, Iceland, Indonesia, Kazakhstan, Kyrgyzstan, Latvia, Lebanon, Lithuania, Luxembourg, Macedonia, Mali, Mauritania, Mauritius Island, Moldova (Republic of), Morocco, Mozambique, The Netherlands, Niger, Norway, Poland, Portugal, Romania, Rwanda, Russian Federation, Saint Lucia, Saint Vincent and the Grenadines, Sao Tome, Senegal, Serbia and Montenegro, Slovakia, Slovenia, Somalia, Spain, Suriname, Sweden, Syrian Arab Republic, Togo, Tunisia, Turkey, Turkmenistan, Ukraine, Uzbekistan, and Vietnam
80Y3384	4.3m power cord	Denmark
80Y3388	4.3m power cord	Bahrain, Botswana, Brunei Darussalam, Cyprus, Dominica, Gambia, Ghana, Grenada, Guyana, Hong Kong, Ireland, Jordan, Kenya, Kuwait,

Part Number	Description	Country
		Liberia , Malawi, Malaysia, Malta, Montserrat, Nigeria, Oman, Qatar, Saint Kitts and Nevis, Seychelles, Sierra Leone, Singapore, Sudan, Tanzania (United Republic of), Trinidad and Tobago, Uganda, United Arab Emirates, United Kingdom, Yemen (United Republic of), Zambia, and Zimbabwe
80Y3393	4.3m power cord	Chile, Italy, and Libya
80Y3395	4.3m power cord	Israel
80Y3397	4.3m power cord	Japan
80Y3399	4.3m power cord	China
80Y3401	4.3m power cord	Korea (United Republic of)
80Y3403	4.3m power cord	India
3AC00638400	4.3m power cord	Taiwan
Locking power cords		
80Y3380	4.3m Locking power cord	United States (except Chicago)
Non-locking power cords		
80Y3372	1.8m Non-locking power cord,	United Stated (Chicago only), Colombia, Venezuela, Peru, and Ecuador
80Y3373	2.8m Non-locking power cord	Colombia, Venezuela, Peru, and Ecuador
80Y3392	2.8m Non-locking power cord,	Chile
80Y3404	2.8m Non-locking in-line power cord	Brazil
3AC00528000	2.8m Non-locking power cord,	Argentina
80Y3301	4.3m Non-locking power cord	South Africa
80Y3325	4.3m Non-locking power cord	Switzerland
80Y3374	4.3m Non-locking, power cord	United States (except Chicago), Anguilla, Cayman Islands, Turks and Caicos Islands, Virgin Islands (British)
80Y3380	4.3m Non-locking, power cord	United States (except Chicago)
80Y3382	4.3m Non-locking power cord	Euro, France, Greenland, St. Lucia, Saint Vincent, and the Grenadines

Part Number	Description	Country
80Y3384	4.3m Non-locking power cord	Denmark
80Y3388	4.3m Non-locking, power cord	Dominica, Grenada, Hong Kong, Ireland, Montserrat, Saint Kitt, and Nevis
80Y3392	4.3m Non-locking power cord	Chile
80Y3393	4.3m power cord, Non-locking	Italy
80Y3395	4.3m Non-locking power cord	Israel
80Y3397	4.3m Non-locking, power cord	Japan

Note: Unless otherwise indicated, all power cords are 4.3 meter (14.1 feet) non-locking.

Appendix A. Connector Pinouts

This appendix includes a description for each of the connector pinouts that are available with the TCx 300 Point of Sale systems.

RS-232 connector

This section describes the pins for the RS-232 connector.

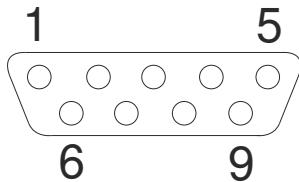


Figure 26. RS-232 Connector

[Table 16](#) list the signal strength and direction for each pin number of a RS-232 connector.

Table 16. RS-232 Connector

Pin	Signal	Direction
1	Carrier Detect (DCD)	Input
2	Received Data (RxData)	Input
3	Transmitted Data (TxData)	Output
4	Data Terminal Ready (DTR)	Output
5	Common Ground	
6	Data Set Ready (DSR)	Input
7	Request to Send (RTS)	Output
8	Clear to Send (CTS)	Input
9	Ring Indicator (RI)	Input

Powered RS-232 Connector

This section includes a diagram and description of the pins for a powered RS-232 connector.

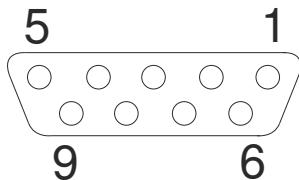


Figure 27. Powered RS-232 Connector

[Table 17](#) list the signals and direction for each pin number of a powered RS-232 connector.

Table 17. Powered RS-232 Connector

Pin	Signal	Direction
1	12 V	Output
2	Received Data (RxD)	Input
3	Transmitted Data (TxD)	Output
4	Data Terminal Ready (DTR)	Output
5	Common Ground	
6	Data Set Ready (DSR)	Input
7	Request to Send (RTS)	Output
8	Clear to Send (CTS)	Input
9	5V	Output

Modifying Pin 1 or Pin 9

If you need to modify pin 1 or pin 9 of the Powered RS-232 connectors, make the modification for the default location as shown in the following figures.

For JP1 for COM D, JP3 for COM E and JP5 for COM F:

If you have a 12V setting, see [Figure 28](#)

12V Setting		
Pin Number	Pin Description	
1	12V	
2	Pin 1 of COM port	
3	Data Carrier Detect	

Figure 28. Pin description for a 12V setting

If you have DCD function, modify the pins as shown in [Figure 29](#)

DCD Setting		
Pin Number	Pin Description	
1	12V	
2	Pin 1 of COM port	
3	Data Carrier Detect	

Figure 29. Pin description for a 12V setting for DCD function

JP2 for COM D, JP4 for COM E and JP6 for COM F

If you have a 5V setting, see [Figure 30](#)

5V Setting		
Pin Number	Pin Description	
1	5V	
2	Pin 9 of COM port	
3	Ring Indicator	

Figure 30. Pin description for a 5V setting

If you have RI function, modify the pins as shown in [Figure 31](#)

RI Setting		
Pin Number	Pin Description	
1	5V	
2	Pin 9 of COM port	
3	Ring Indicator	

Figure 31. Pin description for a 5V setting with RI function

External VGA connector

This section includes a diagram and description of the pins of an external VGA connector.

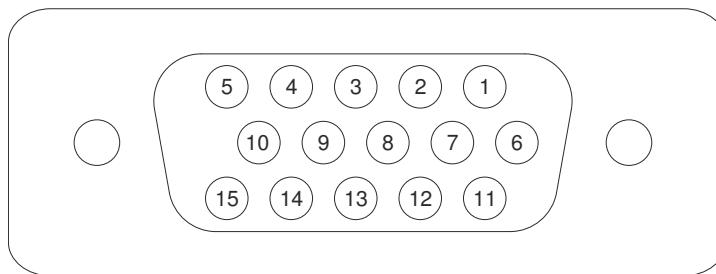


Figure 32. External VGA connector

[Table 18](#) list the signal strength for each pin number of a powered external VGA connector.

Table 18. External VGA connector

Pin	Signal
1	RED
2	GREEN
3	BLUE
4	N/C
5	Ground
6	RED Ground
7	GREEN Ground
8	BLUE Ground
9	5V
10	Ground
11	N/C
12	SDA (I ² C)
13	HSync
14	VSync

Pin	Signal
15	SCL (I ² C)

USB Connector

This section includes a diagram and description of the pins for USB connector.

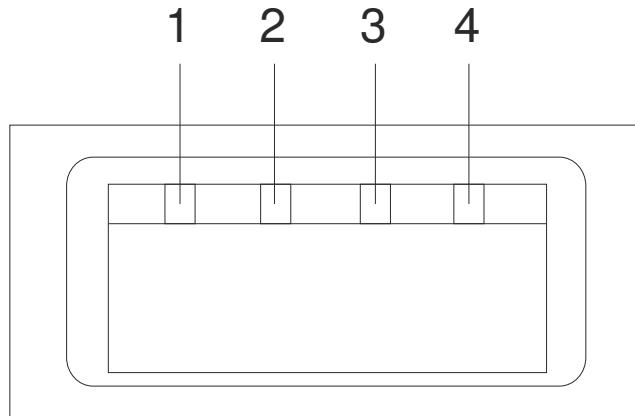


Figure 33. USB Connector

[Table 19](#) list the connector for each pin number of an USB connector.

Table 19. USB Connector

Pin	Connector
1	5 V VBus
2	-Data
3	+Data
4	Ground

USB-C connector

connector

This section describes the pins for a USB-C connector.

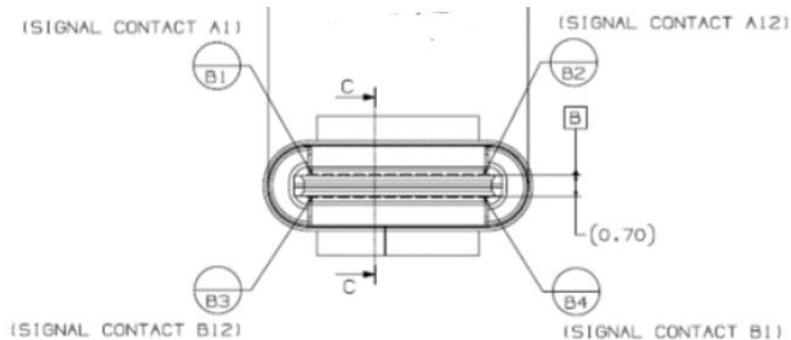


Figure 34. USB-C connector

Pin	Signal	Pin	Signal
A1	GND	B1	GND
A2	TX1+	B2	TX2+
A3	TX1-	B3	TX1-
A4	VBUS	B4	VBUS
A5	CC1	B5	CC2
A6	D+	B6	D+
A7	D-	B7	D-
A8	SBU1	B8	SBU2
A9	VBUS	B9	VBUS
A10	RX2-	B10	RX1-
A11	RX2+	B11	RX1+
A12	GND	B12	GND

Headphone, line-in, or microphone connector

[Table 20](#) list the signal strength for each pin number of a headphone, line-in, or microphone connector.

Table 20. Headphone/Line-in/Microphone Connector

Pin	Signal
Tip	Left channel audio
Ring	Right channel Audio
Base	Ground

Cash drawer connector

This section includes a diagram and description of the pins for a cash drawer connector.

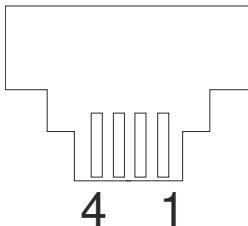


Figure 35. Cash Drawer Connector

[Table 21](#) list the connector for each pin number of cash drawer connector.

Table 21. Cash Drawer Connector

Pin	Connector
1	Ground

Pin	Connector
2	Sense
3	Open
4	24 V

Powered USB Connector

This section includes a diagram and description of the pins for a powered USB connector.

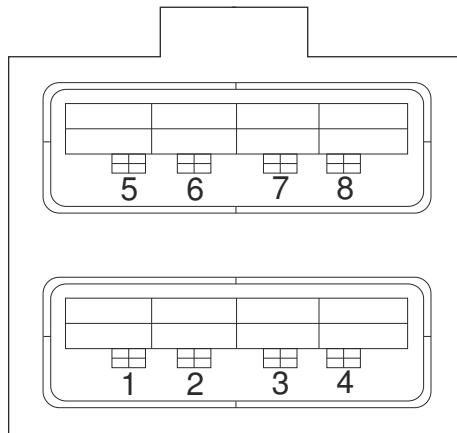


Figure 36. Powered USB Connector

[Table 22](#) list the connectors for each pin number of a powered USB connector.

Table 22. Powered USB Connector

Pin	Connector
1	5 V VBus
2	-Data
3	+Data
4	Ground
5	Ground
6	12 V or 24 V
7	12 V or 24 V
8	Ground

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Telecommunication regulatory statement

This product is not intended to be connected directly or indirectly by any means whatsoever to interfaces of public telecommunications networks, nor is it intended to be used in a public services network.

Electronic emission notices

When you attach a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices that are supplied with the monitor.

Federal Communications Commission (FCC) statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Toshiba Global Commerce Solutions is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Class A Emission Compliance statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

European Union Electromagnetic Compatibility (EMC) Directive Conformance Statement

This product is in conformity with the protection requirements of EU Council Directive 2014/30/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility. Toshiba Global Commerce Solutions cannot accept responsibility for any failure

to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-Toshiba Global Commerce Solutions option cards.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to CISPR 32/European Standard EN 55032. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

Attention: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Responsible manufacturer:

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Tel: 33-6845-35093
e-mail: cthery@toshibagcs.com

Germany Class A statement

Deutschsprachiger EU Hinweis: Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2014/30/EU zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55032 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der Toshiba Global Commerce Solutions empfohlene Kabel angeschlossen werden. Toshiba Global Commerce Solutions übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der Toshiba Global Commerce Solutions verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der Toshiba Global Commerce Solutions gesteckt/eingebaut werden.

EN 55032 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden: "Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen."

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2014/30/EU in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2014/30/EU) für Geräte der Klasse A

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:

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Der verantwortliche Ansprechpartner des Herstellers in der EU ist:

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Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55032 Klasse A.

Australia and New Zealand Class A statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

People's Republic of China Class A electronic emission statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

中华人民共和国“A类”警告声明

声 明

此为 A 级产品，在生活环境巾，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

消费者若使用电源适配器供电，则应购买配套使用获得 CCC认证并满足标准要求的电源适配器

Russian Electromagnetic Interference (EMI) Class A statement

ВНИМАНИЕ! Настоящее изделие относится к классу А.
В жилых помещениях оно может создавать радиопомехи,
снижения которых необходимы дополнительные меры



Japanese Electrical Appliance and Material Safety Law statement

本製品およびオプションに電源コードセットが付属する場合は、それぞれ
その装置専用のものになっていますので他の機器には使用しないで下さい。

Japanese power line harmonics compliance statement

高調波ガイドライン適合品

高調波ガイドライン適合品

Japan Voluntary Control Council for Interference Class A statement

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用す
ると電波妨害を引き起こすことがあります。この場合には使用者が適切な
対策を講ずるよう要求されることがあります。 VCCI-A

Attention: This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.

Japan Electronics and Information Technology Industries Association (JEITA) statement

高調波ガイドライン適合品

Japan Electronics and Information Technology Industries Association (JEITA) Confirmed Harmonics Guidelines with Modifications (products greater than 20 A per phase).

Korean communications statement

이 기기는 업무용(A급)으로 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

This is electromagnetic wave compatibility equipment for business (Type A). Sellers and users need to pay attention to it. This is for any areas other than home.

Taiwan Class A compliance statement

警告使用者：
這是甲類的資訊產品，在
居住的環境中使用時，可
能會造成射頻干擾，在這
種情況下，使用者會被要
求採取某些適當的對策。

Taiwan contact information

台灣 TGCS 產品服務聯絡方式：
台灣東芝全球商業解決方案有限公司
台北市南港區園區街 3-2 號 5 樓之 1
電話：0800-001-939

Toshiba Global Commerce Solutions Taiwan Product Service Contact Info:
Toshiba Global Commerce Solutions, Inc.

Cable ferrite requirement

All cable ferrites are required to suppress radiated EMI emissions and must not be removed.

Electrostatic discharge (ESD)

Attention: Electrostatic discharge (ESD) damage can occur when there is a difference in charge between the part, the product, and the service person. No damage will occur if the service person and the part being installed are at the same charge level.

ESD damage prevention

Anytime a service action involves physical contact with logic cards, modules, back-panel pins, or other ESD sensitive (ESDS) parts, the service person must be connected to an ESD common ground point on the product through the ESD wrist strap and cord.

The ESD ground clip can be attached to any frame ground, ground braid, green wire ground, or the round ground prong on the AC power plug. Coax or connector outside shells can also be used.

Handling removed cards

Logic cards removed from a product should be placed in ESD protective containers. No other object should be allowed inside the ESD container with the logic card. Attach tags or reports that must accompany the card to the outside of the container.

Product recycling and disposal

This unit must be recycled or discarded according to applicable local and national regulations. Toshiba Global Commerce Solutions encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. Toshiba Global Commerce Solutions offers a variety of product return programs and services in several countries to assist equipment owners in recycling their IT products. Information on Toshiba Global Commerce Solutions product recycling offerings can be found on the [Toshiba Global Commerce Solutions product recycling programs website](#).

Español: Esta unidad debe reciclarse o desecharse de acuerdo con lo establecido en la normativa nacional o local aplicable. Toshiba Global Commerce Solutions recomienda a los propietarios de equipos de tecnología de la información (TI) que reciclen responsablemente sus equipos cuando éstos ya no les sean útiles. Toshiba Global Commerce Solutions dispone de una serie de programas y servicios de devolución de productos en varios países, a fin de ayudar a los propietarios de equipos a reciclar sus productos de TI. Se puede encontrar información sobre las ofertas de reciclado de productos de Toshiba Global Commerce Solutions en el sitio web [Toshiba Global Commerce Solutions product recycling programs](#).



Note: This mark applies only to countries within the European Union (EU) and Norway.

Appliances are labeled in accordance with European Directive 2012/19/EU concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label

is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.

Remarque : Cette marque s'applique uniquement aux pays de l'Union Européenne et à la Norvège. L'étiquette du système respecte la Directive européenne 2012/19/EU en matière de Déchets des Equipements Electriques et Electroniques (DEEE), qui détermine les dispositions de retour et de recyclage applicables aux systèmes utilisés à travers l'Union européenne. Conformément à la directive, ladite étiquette précise que le produit sur lequel elle est apposée ne doit pas être jeté mais être récupéré en fin de vie.

注意：このマークは EU 諸国およびノルウェーにおいてのみ適用されます。

この機器には、EU 諸国に対する廃電気電子機器指令2012/19/EU(WEEE) のラベルが貼られています。この指令は、EU 諸国に適用する使用済み機器の回収とリサイクルの骨子を定めています。このラベルは、使用済みになった時に指令に従って適正な処理をする必要があることを知らせるために種々の製品に貼られています。

In accordance with the European WEEE Directive, electrical and electronic equipment (EEE) is to be collected separately and to be reused, recycled, or recovered at end of life. Users of EEE with the WEEE marking per Annex IV of the WEEE Directive, as shown above, must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to customers for the return, recycling, and recovery of WEEE. Customer participation is important to minimize any potential effects of EEE on the environment and human health due to the potential presence of hazardous substances in EEE. For proper collection and treatment, contact your local Toshiba Global Commerce Solutions representative.

Disposal of IT products should be in accordance with local ordinances and regulations.

Battery safety



警告：本电池包含锂。为避免爆炸，请勿焚烧电池或对其充电。

请勿：把电池投入或浸入水中、把电池加热到 100°C (212°F) 以上、修理或拆卸。 (C003)

注 意

用错误型号电池更换会有爆炸危险

务必按照说明处置用完的电池

Caution: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

警 告：

如果更換不正確之電池型式會有爆炸的風險。

請依製造商說明書處裡用過之電池。

Battery return program

This product may contain sealed lead acid, nickel cadmium, nickel metal hydride, lithium, or lithium ion battery. Consult your user manual or service manual for specific battery information. The battery must be recycled or disposed of properly. Recycling facilities may not be available

in your area. For information on disposal of batteries outside the United States, go to the [Battery disposal website](#) or contact your local waste disposal facility.

电池回收计划

本产品可能包含密封铅酸、镍镉、镍氢、锂或锂离子电池。有关特定的电池信息，请参阅用户手册或维修手册。必须正确地回收或处理这类电池。在您所在的地区中可能没有回收设施。有关在美国之外处理电池的信息，请访问 <http://www.ibm.com/ibm/environment/products/batteryrecycle.shtml>，或与当地的废品处理机构联系。

For Taiwan:



Please recycle batteries.

For the European Union:



Notice: This mark applies only to countries within the European Union (EU)

Batteries or packaging for batteries are labeled in accordance with European Directive 2013/56/EU concerning batteries and accumulators and waste batteries and accumulators. The Directive determines the framework for the return and recycling of used batteries and accumulators as applicable throughout the European Union. This label is applied to various batteries to indicate that the battery is not to be thrown away, but rather reclaimed upon end of life per this Directive.

Les batteries ou emballages pour batteries sont étiquetés conformément aux directives européennes 2013/56/EU, norme relative aux batteries et accumulateurs en usage et aux batteries et accumulateurs usés. Les directives déterminent la marche à suivre en vigueur dans l'Union Européenne pour le retour et le recyclage des batteries et accumulateurs usés. Cette étiquette est appliquée sur diverses batteries pour indiquer que la batterie ne doit pas être mise au rebut mais plutôt récupérée en fin de cycle de vie selon cette norme.

バッテリーあるいはバッテリー用のパッケージには、EU 諸国に対する廃電気電子機器指令 2013/56/EU のラベルが貼られています。この指令は、バッテリーと蓄電池、および廃棄バッテリーと蓄電池に関するものです。この指令は、使用済みバッテリーと蓄電池の回収とリサイクルの骨子を定めているもので、EU 諸国にわたって適用されます。このラベルは、使用済みになったときに指令に従って適正な処理をする必要があることを知らせるために種々のバッテリーに貼られています。

In accordance with the European Directive 2013/56/EU, batteries and accumulators are labeled to indicate that they are to be collected separately and recycled at end of life. The label on the battery may also include a chemical symbol for the metal concerned in the battery (Pb for lead, Hg for mercury and Cd for cadmium). Users of batteries and accumulators must not dispose of batteries and accumulators as unsorted municipal waste, but use the collection framework available to customers for the return, recycling and treatment of batteries and accumulators. Customer participation is important to minimize any potential effects of batteries and accumulators on the environment and human health due to the potential presence of hazardous substances. For proper collection and treatment, contact your local Toshiba Global Commerce Solutions representative.

This notice is provided in accordance with Royal Decree 106/2008 of Spain: The retail price of batteries, accumulators and power cells includes the cost of the environmental management of their waste.

For California:

Perchlorate material – special handling may apply

Refer to www.dtsc.ca.gov/hazardouswaste/perchlorate

The foregoing notice is provided in accordance with *California Code of Regulations Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials*. This product/part includes a lithium manganese dioxide battery which contains a perchlorate substance.

Flat panel displays

The fluorescent lamp in the liquid crystal display contains mercury. Dispose of it as required by local ordinances and regulations.

Monitors and workstations

Connecticut: Visit the website of the Department of Energy & Environmental Protection at www.ct.gov/deep for information about recycling covered electronic devices in the State of Connecticut, or telephone the Connecticut Department of Environmental Protection at 1-860-424-3000.

Oregon: For information regarding recycling covered electronic devices in the state of Oregon, go to the Oregon Department of Environmental Quality site at www.deq.state.or.us/lq/electronics.htm.

Washington: For information about recycling covered electronic devices in the State of Washington, go to the Department of Ecology Website at fortress.wa.gov/ecy/recycle/ or telephone the Washington Department of Ecology at 1-800-Recycle.

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Additional notices

Conforms to ANSI/UL STD.60950-1.

Certified to CAN/CSA STD.C22.2 NO. 60950-1

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