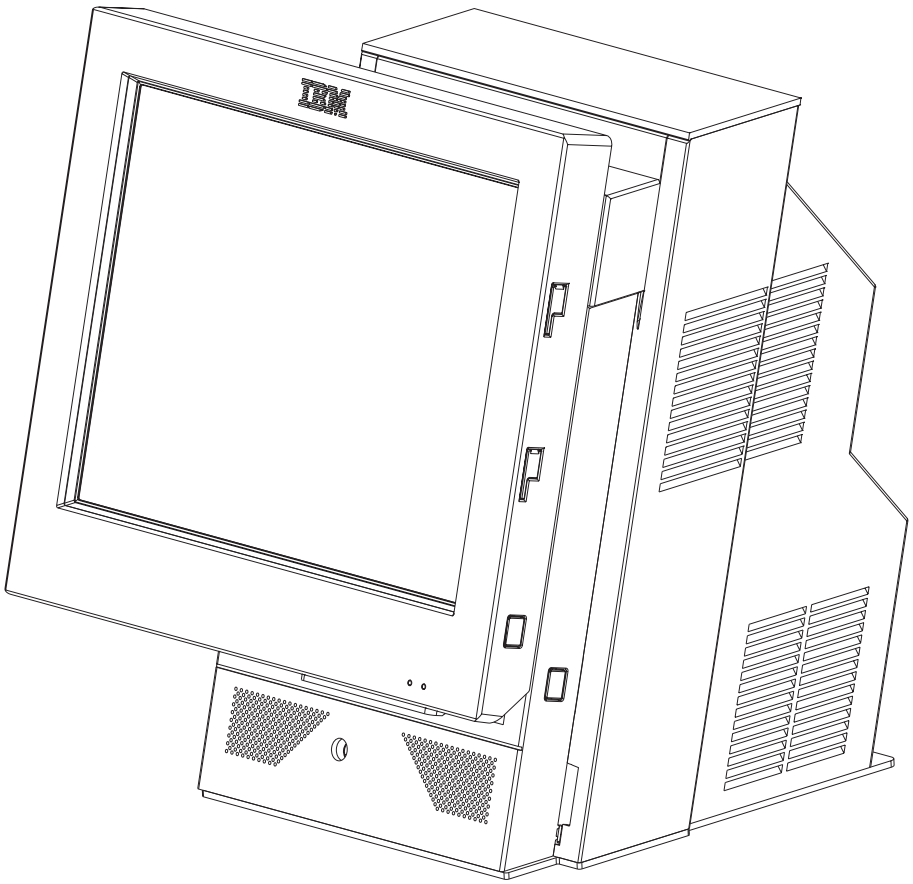
SurePOS 500 Series

Planning, Installation, and Operation Guide for Models 545 and 565



Update April 25, 2007

GA27-4365-01

SurePOS 500 Series

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Note

Before using this information and the product it supports, be sure to read the information in “Safety and environmental information” on page xi and “Notices” on page 97.

Second Edition (May 2007)

This edition applies to the IBM® SurePOS Models Models 545 and 565 and to all subsequent releases and modifications until otherwise indicated in new editions.

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Contents

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Safety and environmental information

The following sections cover safety information and environmental notices.

Safety information

Safety notices are printed throughout this guide.

A *danger* notice indicates the presence of a hazard that has the potential of causing death or serious personal injury.

A *caution* notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury.

An *attention* notice indicates the possibility of damage to a program, device, system, or data.

A *note* notice provides important tips, guidance, or advice.

Danger:
Before you begin to install this product, read the safety information in *IBM Safety Information - Read This First*, GA27–4004. This booklet describes safe procedures for cabling and plugging in electrical equipment.

Gevaar:
Voordat u begint met de installatie van dit produkt, moet u eerst de veiligheidsinstructies lezen in de brochure *Veiligheidsinstructies—Lees dit eerst*, GA27–4004. Hierin wordt beschreven hoe u electrische apparatuur op een veilige manier moet bekabelen en aansluiten.

Perigo:
Antes de começar a instalar este produto, leia as informações de segurança contidas em *Informações Sobre Seguranaça—Leia Isto Primeiro,* GA27–4004. Esse folheto descreve procedimentos de segurança para a instalação de cabos e conexões em equipamentos elétricos.

Fare!

Før du installerer dette produkt, skal du læse sikkerhedsforskrifterne i *Sikkerhedsforskrifter—Læs dette først* GA27–4004. Vejledningen beskriver den fremgangsmåde, du skal bruge ved tilslutning af kabler og udstyr.

Gevaar

Voordat u begint met het installeren van dit produkt, dient u eerst de veiligheidsrichtlijnen te lezen die zijn vermeld in de publikatie *IBM Safety Information — Read This First*, GA27–4004. In dit boekje vindt u veilige procedures voor het aansluiten van elektrische appratuur.

VAARA

Ennen kuin aloitat tämän tuotteen asennuksen, lue julkaisussa *Turvaohjeet—Luetämä ensin*, GA27–4004, olevat turvaohjeet. Tässä kirjasessa on ohjeet siitä, miten sähkölaitteet kaapeloidaan ja kytketään turvallisesti.

Danger

Avant d'installer le présent produit, consultez le livret *Informations pour la sécurité–Lisez-moi d'abord*, GA27–4004, qui décrit les procédures à respecter pour effectuer les opérations de câblage et brancher les équipements électriques en toute sécurité.

Vorsicht

Bevor mit der Installation des Produktes begonnen wird, die Sicherheitshinweise in *Sicherheitsinformationen—Bitte zuerst lesen,* IBM Form GA27–4004. Diese Veröffentlichung beschreibt die Sicherheitsvorkehrungen für das Verkabeln und Anschlieβen elektrischer Geräte.

Vigyázat

Mielôtt megkezdi a berendezés üzembe helyezését, olvassa el a *IBM Safety Information — Read This First*, GA27–4004 könyvecskében leírt biztonsági információkat. Ez a könyv leírja, milyen biztonsági intézkedéseket kell megtenni az elektromos berendezés huzalozásakor illetve csatlakoztatásakor.

Pericolo

prima di iniziare l'installazione di questo prodotto, leggere le informazioni relative alla sicurezza riportate nell'opuscolo *Informazioni di sicurezza—Prime informazioni da leggere* in cui sono descritte le procedure per il cablaggio ed il collegamento di apparecchiature elettriche.

Fare

Før du begynner å installere dette produktet, må du lese sikkerhetsinformasjonen i *Sikkerhetsinformasjon—Les dette først,* GA27–4004 som beskriver sikkerhetsrutinene for kabling og tilkobling av elektrisk utstyr.

Perigo

Antes de iniciar a instalação deste produto, leia as informações de segurança *Informações de Segurança—Leia Primeiro,* GA27–4004. Este documento descreve como efectuar, de um modo seguro, as ligações eléctricas dos equipamentos.

Peligro

Antes de empezar a instalar este producto, lea la información de seguridad en *Información de Seguridad—Lea Esto Primero,* GA27–4004. Este documento describe los procedimientos de sequridad para cablear y enchufar equipos eléctricos.

Varning—livsfara

Innan du börjar installera den här produkten bör du läsa säkerhetsinformationen i dikumentet *Säkerhetsföreskrifter—Läs detta först,* GA27–4004. Där beskrivs hur du på ett säkert sätt ansluter elektrisk utrustning.

危險：安裝本產品之前， 請先閱讀
"IBM Safety Information--Read
This First" GA27-4004 手冊中所提
供的安全注意事項。 這本手冊將會說明
使用電器設備的纜線及電源的安全程序。

Opasnost: Prije nego sto počnete sa instalacijom produkta,
pročitajte naputak o pravilima o sigurnom rukovanju u
Upozorenje: Pravila o sigurnom rukovanju - Prvo pročitaj ovo,
GA27-4004. Ovaj privitak opisuje sigurnosne postupke za
priključrivanje kabela i priključivanje na električno napajanje.

Upozornění: než zahájíte instalaci tohoto produktu, přečtěte si
nejprve bezpečnostní informace v pokynech „ Bezpečnostní
informace“ č. GA27-4004. Tato brožurka popisuje bezpečnostní
opatření pro kabeláž a zapojení elektrického zařízení.

Κίνδυνος: Πριν ξεκινήσετε την εγκατάσταση αυτού του προϊόντος,
διαβάστε τις πληροφορίες ασφάλειας στο φυλλάδιο *IBM Safety
Information-Read this first,* GA27-4004. Στο φυλλάδιο αυτό
περιγράφονται οι ασφαλείς διαδικασίες για την καλωδίωση των
ηλεκτρικών συσκευών και τη σύνδεσή τους στην πρίζα.

危険： 導入作業を開始する前に、安全に関する
小冊子 GA27-4004 の「最初にお読みください」
(Read This First)の項をお読みください。
この小冊子は、電気機器の安全な配線と接続の
手順について説明しています。

위험: 이 제품을 설치하기 전에 반드시
"주의: 안전 정보-시작하기 전에"
(GA27-4004) 에 있는 안전 정보를
읽으십시오.

סכנה: לפני שמתחילים בהתקנת מוצר זה, יש לקרוא את הוראות הבטיחות בחוברת
Caution: Safety Information - Read This First, GA27-4004
חוברת זו מתארת את הוראות הבטיחות לחיבור הכבלים ולחיבור לחשמל של ציוד חשמלי.

خطـــر: قبـــل عمـــلية بـــدء تركيـــب هذا المنتـــج، قم بقراءة معلومـــات
الحمـــاية الموجودة في التحذيـــر: معلومـــات الحمـــاية – Read This First،
GA27-4004 . يقـــوم هذا الكتيـــب بوصـــف اجـــراءات الآمـــان
لتوصـــيل الأدوات الكـــهربائية بالكـــابلات والمقبـــس الكـــهربائـــي.

ОПАСНОСТ
Пред да почнете да го инсталирате овој продукт, прочитајте ја информацијата за безбедност:
"Предупредување: Информација за безбедност: Прочитајте го прво ова", GA27-4004.
Оваа брошура опишува безбедносни процедури за каблирање и вклучување на електрична опрема.

Uwaga:
Przed rozpoczęciem instalacji produktu należy zapoznać się z instrukcją:
"IBM Safety Information - Read This First", GA27-4004.
Zawiera ona warunki bezpieczeństwa przy podłączaniu do sieci elektrycznej i eksploatacji.

ОСТОРОЖНО: Прежде чем инсталлировать этот продукт, прочтите Инструкцию по технике безопасности в документе "Внимание: Инструкция по технике безопасности -- Прочесть в первую очередь", GA27-4004. В этой брошюре описаны безопасные способы каблирования и подключения электрического оборудования.

Nebezpečenstvo: Pred inštaláciou výrobku si prečítajte bezpečnosté predpisy v
Výstraha: Bezpeč osté predpisy - Prečítaj ako prvé, GA27-4004. V tejto brožúrke sú opísané bezpečnosté postupy pre pripojenie elektrických zariadení.

Pozor: Preden zaènete z instalacijo tega produkta preberite poglavje: 'Opozorilo: Informacije o varnem rokovanju-preberi pred uporabo," GA27-4004. To poglavje opisuje pravilne postopke za kabliranje,

危險：

開始安裝此產品之前，請先閱讀安全資訊。

注意：

請先閱讀 - 安全資訊 GA27-4004

此冊子說明插接電器設備之電纜線的安全程序。

危险：
在开始安装本产品之前，请阅读
IBM Safety Information - Read This First，
GA27-4004 中的安全信息。
此手册描述了如何安全地连接和插拔电气设备。

Environmental notices and statements

This section covers product recycling and product disposal.

End of life disposal

This unit must be recycled or discarded according to applicable local and national regulations. IBM encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. IBM offers a variety of product return programs and services in several countries to assist equipment owners in recycling their IT products. Information on IBM product recycling offerings can be found on IBM's Internet site at http://www.ibm.com/ibm/environment/products/prp.shtml.

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

Appliances are labeled in accordance with European Directive 2002/96/EC 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.

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 IBM representative.

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

Battery disposal

This unit contains batteries. Remove and discard these batteries, or recycle them, according to local regulations. Return IBM units as determined by service procedures.

Taiwanese battery recycling statement

Waste batteries, please recycle.

Mercury-added statement

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

Magnetic stripe reader

The electronic article surveillance (EAS) device that deactivates security tags should not be closer than 18 in. (46 cm.) to the nearest edge of the magnetic stripe reader (MSR).

Handling static-sensitive devices

Attention: Static electricity can damage electronic devices and your system. To avoid damage, keep static-sensitive devices in their static protective bags until you are ready to install them.

To reduce the possibility of electrostatic discharge, observe the following precautions:

- Limit your movement. Movement can cause static electricity to build up around you.
- Handle the device carefully, holding it by its edges or its frame.
- Do not touch solder joints, pins, or exposed printed circuitry.
- Do not leave the device where others can handle and possibly damage the device.
- While the device is still in its anti-static bag, touch it to an unpainted metal part of the system unit for at least 2 seconds. (This action removes static electricity from the package and from your body.)
- Remove the device from its package and install it directly into your system, without putting it down. If it is necessary to put the device down, place it onto its static-protective bag. (If your device is an adapter, place it component side up.) Do not place the device onto the cover of the system or onto a metal table.
- Take additional care when handling devices during cold weather because heating reduces indoor humidity and increases static electricity.

About this guide

This guide provides information necessary to install and set up the IBM SurePOS® 500 Series Models 545 and 565.

Who should read this guide

This document is intended for the person who will install, set up, and manage the IBM SurePOS 500 Series Models 545 and 565.

How this guide is organized

This guide is organized as follows:

- Chapter 1, “Introducing the IBM SurePOS 500 Series Models 545 and 565,” on page 1 introduces you to the new models of the SurePOS 500 series.
- Chapter 2, “Installation requirements and overview,” on page 13 provides preparation information for a successful installation.
- Chapter 3, “Installing the internal and external options,” on page 17 contains step-by-step instructions on installation.
- Chapter 4, “Mounting the SurePOS 500 Models 545 and 565,” on page 37 describes the various available mounting options for the SurePOS 500 Models 545 and 565.
- Chapter 5, “Operating and maintaining the system,” on page 67 provides tips on using the operator display and the touch screen.
- Chapter 6, “Testing the system,” on page 69 provides testing and troubleshooting procedures for the SurePOS 500 Models 545 and 565 should you experience a problem.
- “System specifications and planning information,” on page 81 provides product and peripheral dimensions, temperature tolerances and power requirements.

Related publications

The SurePOS 500 Series library consists of the following publications:

- *IBM SurePOS 500 Series Hardware Service Guide for Models 545 and 565*, SY27-0417

  This document provides information on repairing and maintaining the system unit device, including parts listings, troubleshooting, and removal and replacement procedures.
- *IBM SurePOS 500 Series Operating System Installation Guide for Models 545 and 565*, GA30-4132

  This guide provides step-by-step information on installing the operating software for the product.
- *IBM Point of Sale Options and I/O Devices Service Guide*, GC30-9737

  This guide describes the problem-determination and repair procedures for cash drawers, displays, keyboards, and options that are attached to IBM® SurePOS™ systems.
- *IBM Safety and Regulatory Information — Read This First*, GA27-4004

  This document contains important safety information.

To access these publications:

- Go to www.ibm.com/solutions/retail/store/
- Select **Support**, then select **Publications**.

Publications accessibility

The soft-copy version of this guide and other related publications are accessibility-enabled.

Support Web site

For the latest troubleshooting guidance and symptom-fix tip information, go to the IBM support Web site at: www.ibm.com/solutions/retail/store/support. The latest BIOS and device drivers can be found under **SurePOS 500/600 Series** > **SurePOS 500–xx5 Downloads**. Other device drivers can be found under **Peripheral Drivers**.

This site contains additional information, gathered from field experience, not available when this document was developed.

Summary of changes

May, 2007

This update includes information for the 17-inch model, and the modular flash drive.

Chapter 1. Introducing the IBM SurePOS 500 Series Models 545 and 565

The IBM SurePOS 500 Series Models 545 and 565 (machine type 4846) enable you to provide fast, accurate customer service and to manage your restaurant or store efficiently. You can configure the SurePOS 500 Series systems to support a wide variety of both IBM and non-IBM input/output (I/O) devices – everything from standard serial-attached devices to the Universal Serial Bus (USB)-attached devices.

System resources and the operating system may limit the use of ports. Figure 1 shows a sample SurePOS 500 configuration.

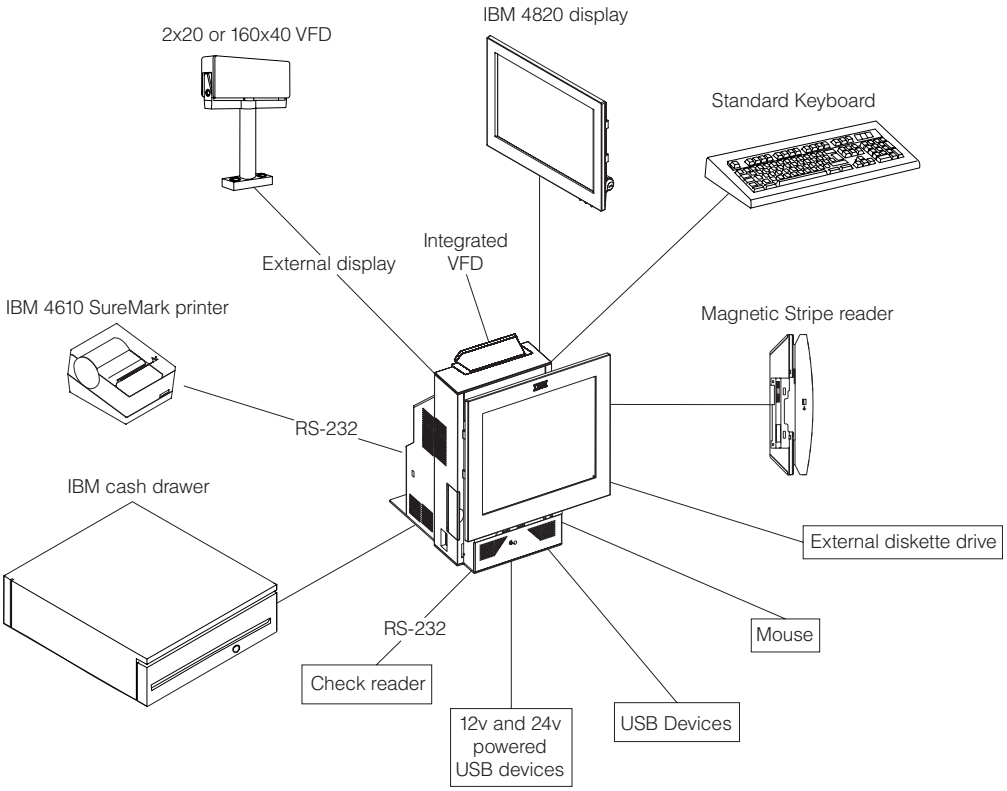


Figure 1. IBM SurePOS 500 Series configuration with optional features. Note: The location of the peripherals in this diagram is not an indication of the actual connector location.

Models and features

Table 1 and Table 2 on page 3 summarizes the SurePOS 500 models and features.

Table 1. 4846 Models 545 and 565 summary

Attribute	Model 545	Model 565
Processor and FSB speed	Intel 326 Celeron D: 2.53 GHz	
Chipset	Intel 915GV/ICH6	
BIOS	AwardBIOS	
Main memory	512 MB (standard) to 1 GB DDR2 DIMMs 2 slots (2 GB max)	
Video	Integrated 2D/3D Intel graphics controller for LCD/CRT; Dual independent video option for CRT (separate data from LCD) with dual video card	
LCD	One of the following: 800x600 12.1 in. TFT, High Bright 1024x768 15 in. TFT (2 bulb) 1280x1024 17 in. TFT (4 bulb)	
Touch	ELO Infra-red	
Audio	Not available	AC97 compliant, Codec; amplified stereo speakers
Mass storage	80 GB SATA II Modular Flash Drive	
LAN	Auto sensing 10BaseT/100 BaseTx Ethernet support	
Expansion	Not available	PC-Card slot (accommodates PC cards up to 119 mm long.)
I/O ports and connectors	7 standard USB (3 display tablet, 4 tower rear) Mouse (rear) Keyboard (rear) 1, 12V powered USB (rear) 1, 24V powered USB (rear) 2 cash drawer 3 unpowered RS-232 1 powered RS-232 (external customer display) Head phone (available on Model 565) Microphone (available on Model 565) RJ-45 Ethernet LAN External CRT	
I/O devices	External floppy (USB) MSR (3-track/JUCC) Integrated 2x20 Distributed 2x20 Distributed APA	
Indicators	Power HDD activity Ethernet See Table 9 on page 16 for the status indicator states.	
Controls	Power LCD brightness Volume (with speaker kit, available on Model 565)	

Table 2. E and P Models

Model Number	Description
4846-E45	System unit Model 545, preloaded with the Windows XP Embedded for Point of Service (WEPOS)
4846-E65	System unit Model 565, preloaded with the Windows XP Embedded for Point of Service (WEPOS)
4846-P45	System unit Model 545 with 4610 Printer
4846-P65	System unit Model 565 with 4610 Printer

Optional features

The following is a list of optional features available for the SurePOS 500:

- 4 GB modular flash drive (second drive only)
- Memory:
  - 512 MB DDR2 (standard)
  - 1 GB DDR2
  - 2 GB DDR2, (2 x 1 GB)
- Displays:
  - Integrated 2x20
  - Distributed 2x20
  - Distributed APA
  - 12-in, 17-in. LCD (15-in. is the standard feature)
- MSR:
  - 3-track
  - JUCC
- Countertop/full-size cash drawer integration tray for printer and keyboard
- Countertop integration tray for single station printer, non-keyboard
- Wide cash drawer integration kit for single station printer, non-keyboard
- Cash drawer
- Compact A/N POS (CANPOS) KEYBOARD
- External USB floppy drive
- USB antenna cover (accommodates USB antennas up to 32mm X 101 mm; excluding the exposed connector)
- Side cover to accommodate PC Card antennas with lengths up to 119 mm

Connectors, power, and brightness controls

Figure 2 and Table 3 identifies the controls and tablet connectors.

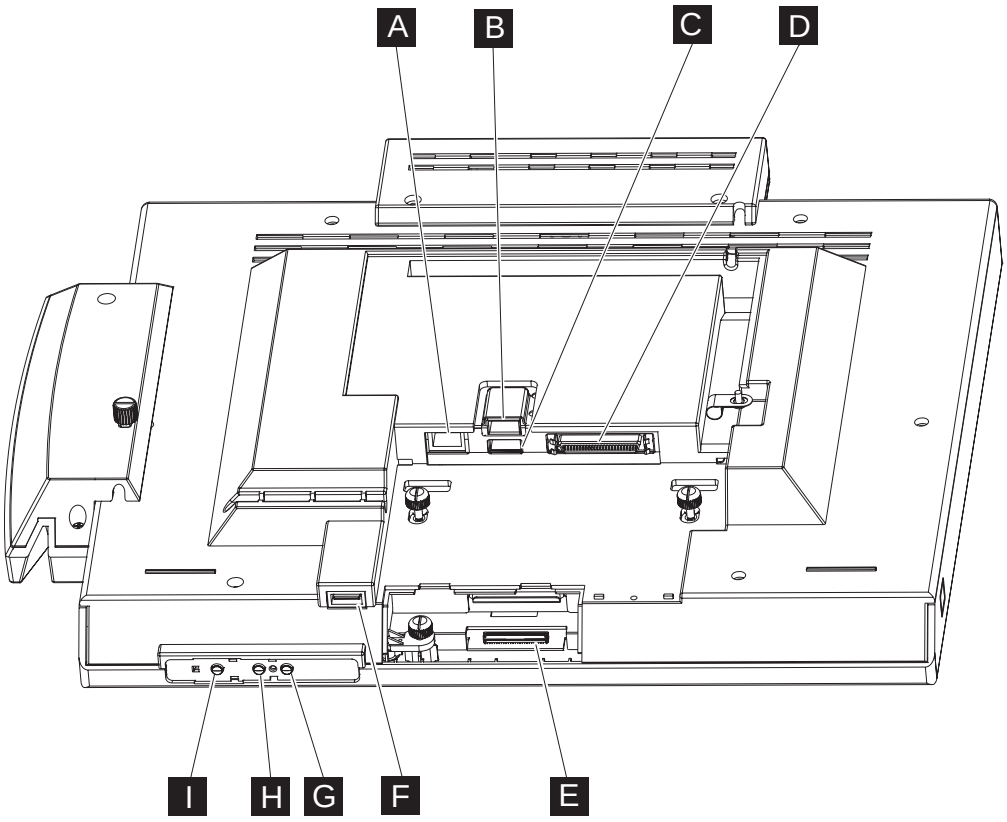


Figure 2. Tablet connectors

Table 3. Controls and connectors

Reference	Description
A	MSR port
B C F	USB connectors
D	Tablet cable connector
E	Touch cable connector (located behind door)
G H	LCD brightness controls (minus – and plus +)
I	Power button

Figure 3 on page 6 and Table 4 on page 6 identifies the rear connectors.

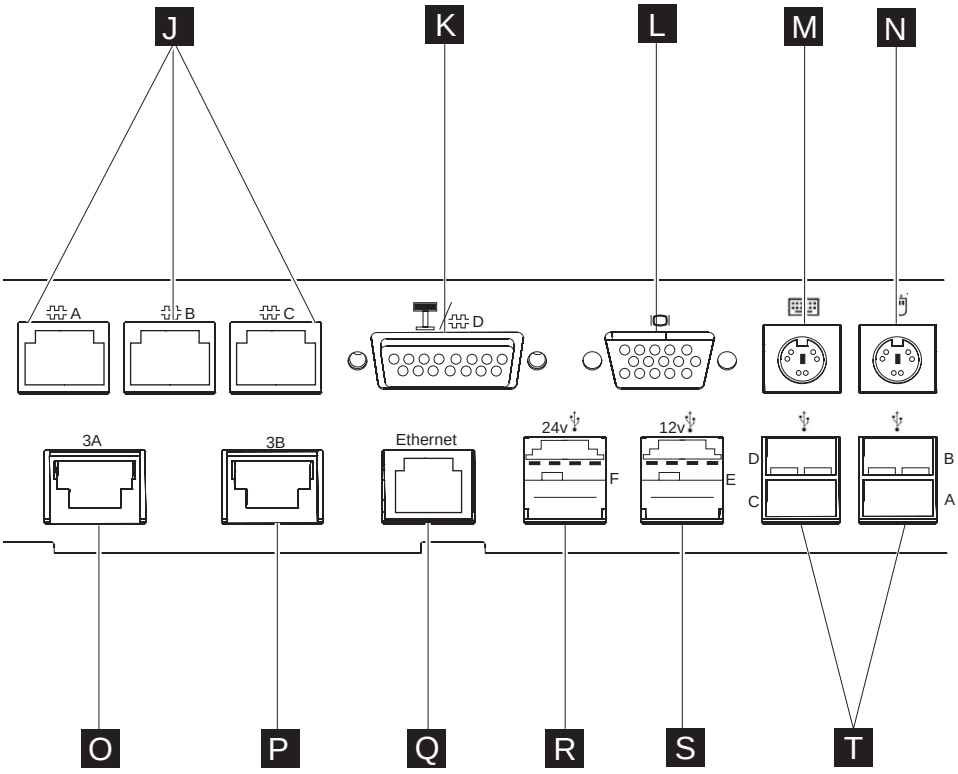


Figure 3. Rear view of input/output available on all models

Table 4. Rear connectors

Reference	Description	Icon
J	Serial ports (3), non-powered	
	12V serial	
L	VGA	
M	Keyboard	
N	Mouse	
O, P	Cash drawer connectors (2 each rated 24 V, 1.0 A 200 ms pulse)	3A, 3B
Q	Ethernet	
R	Powered 24V rated for 3A continuous	
S	Powered 12V	
T	USB 2.0 ports (4)	

Supported operating systems

Table 5 describes the operating system support:

Table 5. SurePOS 500 Models 545 and 565 supported operating systems

Supported operating system	Support for Point of Sale application drivers (MSRs, customer displays, cash drawers, tone)	Application Driver Notes
PC DOS 2000	Hardware direct interface only	Driver updates are required from previous SurePOS 500 models. MSR and Scanner in Wedge mode is not supported.
Windows 2000, XP Windows Embedded Point of Service (WEPOS)[1] Power management via ACPI **Notes:** 1. Only DOS full screen mode supported due to touch screen alignment requirements. 2. Windows DBCS versions (Japanese/Korean/Chinese) supported.	IBM UPOS Drivers for Windows, Version 1.9.2 or later. (Includes JavaPOS drivers for Windows and OPOS drivers.)	

Note: [1]The standby and hibernation modes are not supported with WEPOS.

Understanding the display and operating system restrictions

The operating system, the display size, and any attached CRTs can affect the display resolution. The following definitions describe the terms and various display configurations:

Single A type of display configuration that supports only one display device.

Twin A type of display configuration that supports two display devices, each of which has the same content, resolution, and timings. Also referred to as Simultaneous mode.

Clone A type of display configuration that drives two display devices, each displaying the same content, but can have different resolutions and (independent) timings.

Dual Independent Head (DIH)
A type of display configuration that supports two displays with different content on each display device. Also referred to as an Extended Desktop.

The onboard LCD supports the following modes when using the indicated operating system:

- DOS: Single
- Windows 2000 and Windows XP: Clone (default), twin
- WEPOS: Clone (default), twin

The onboard LCD and one extra attached LCD:

- DOS: Single; the onboard LCD is primary
- Windows 2000 and Windows XP: Clone (default), twin, DIH
- WEPOS: Clone (default), twin, DIH

Table 6 summarizes the restrictions, if any, imposed by the operating system.

Table 6. Operating system with display combinations and restrictions

Display		DOS	Windows
Onboard LCD only	Image	Single[1]	Single
	Restrictions	None	
Onboard LCD + external display	Image	Single	Dual-same
	Restrictions	External display not supported	Media clips show on onboard LCD only; External display must be the same resolution as onboard LCD
Onboard LCD + Add-in video card	Image	Single, on board LCD	Dual-independent[2]
	Restrictions	None	Onboard LCD becomes secondary display when installing Windows
General	Restrictions	Touch on primary display only	None

1. Dual-same: same data on both displays; simultaneous mode
2. Dual-independent; different/independent data on both displays; extended desktop

Table 7. Supported video resolutions in Windows operating system

LCD size	Available video resolutions for onboard LCD
12 in.	640 x 480, 720 x 480, 800 x 600
15 in.	640 x 480, 720 x 480, 800 x 600, 960 x 540, 1024 x 768
17 in.	640 x 480, 720 x 480, 800 x 600, 960 x 540, 1024 x 768, 1152 x 864, 1280 x 720, 1280 x 768, 1280 x 960, 1280 x 1024

Supported devices

Table 8 summarizes the industry standard devices that have been tested with the product. Other industry devices may be supported using standard interfaces; however, no testing was performed to insure functionality in all aspects of operation.

Table 8. Summary of tested and supported devices

Port type	Supported device	Hot plug support (See note 1)
RS-232 (Serial)	• 4610 TF6/TF7 single station thermal printer • 4610-TG3, TG4, TG5	Not supported
CRT (Video)	• 4820-4FD/4FT with MSR option, USB • 4820 - 1GD, 2GN, 2GD, 2GB	Not supported
USB	• 4610-GB3 • 4610-TG3/TG4/TG5 • IBM USB floppy drive • IBM USB keyboard • IBM Memory key • IBM 4685-S01/L0h handheld scanner	Yes; however, USB not supported on DOS; powered USB ports is not supported.
Keyboard/Mouse	• IBM PS/2 keyboard • IBM mouse • Retail CANPOS keyboard (See note 2.)	Yes for USB devices No for PS/2 devices
PC Card	• See the IBM web site (www.ibm.com/solutions/retail/store/) for tested devices.	Yes
Headphone/microphone	• IBM or equivalent	Yes

Notes:

1. Assumes device natively supports hot plugging and can be hot plugged with any operating system.
2. CANPOS MSR option is mutually exclusive for SurePOS 500 Models 545 and 565.
3. Some PCMCIA devices may require third party software support.

System management

This section describes the types of system management available with the SurePOS 500.

System management programs

The SurePOS 500 Series supports the following system and power management programs:

Desktop Management Interface

The SurePOS 500 Series supports System Management BIOS (SMBIOS) v2.4, supporting a DMI-compliant agent such as Tivoli®. This allows access to low-level information. Examples of information that can be accessed are the BIOS level, processor type, speed, manufacturer, system-board information, and detailed memory information.

RDM (Remote Deployment Manager) and IBM Director.
RDM can install an OS and update BIOS remotely and probe machines for low-level information. IBM Director can remotely configure applications and operating systems, transfer files, and inventory workstations on a network.

APM APM consists of several layers of software that allow the operating system, applications, and BIOS to work together to reduce power consumption. APM is supported on DOS and Linux platforms.

Advanced Configuration and Power Interface
Advanced Configuration and Power Interface (ACPI) V1.0 defines a hardware and software interface and tables by which the operating system can alter the characteristics of the hardware-specific devices. ACPI is supported on Windows 2000 and Windows XP.

Power up on LAN
This feature enables the system to power on when it receives a specific frame over the local area network (LAN) through the 10/100-Mbps Ethernet feature. You can enable power up (wake) on LAN by enabling **Wake on LAN** in the CMOS Setup Utility program.

Power up (wake) on daily alarm
This feature enables the system to turn on at the same time every day. You can enable power up (wake) on daily alarm by enabling **Wake on Alarm** in the CMOS Setup Utility program.

RMA IBM Remote Management Agent is a component of IBM Store Integration Framework that simplifies the delivery of new consumer-facing devices in stores to support the delivery of superior service. For more information, see the Retail Store Solutions web site.

Remote management

The SurePOS 500 Models 545 and 565 supports remote system management over the network. The following functions are supported:

- Selectable startup sequence
- Update POST/BIOS from the network
- Ethernet
- Power up (wake) on LAN

Compatible products

You can use the following products with the SurePOS 500:

- 4610 SureMark Single Station Thermal Printer (RS-232 models)
- 4610 SureMark Printer
- 4820 SurePoint Solution Terminal
- IBM point-of-sale USB devices
- Original equipment manufacturer (OEM) USB devices
- OEM RS-232 Point of Sale devices (printers, 2x20, and others)
- OEM USB printers
- CRT/LCD displays
- IBM USB portable CD-ROM drive
- IBM USB 2.0 CD-RW/DVD-ROM drive
- TEAC USB CD-ROM drive

Locating the machine serial number

The serial number and model number (**A** in Figure 4) are located under the front cover/HDD cover. **B** points to the tablet size label.

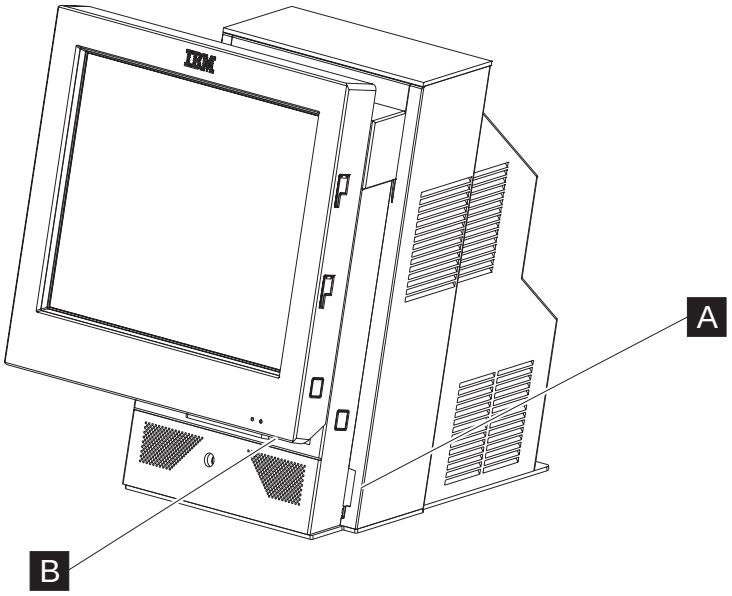


Figure 4. Serial number location

Chapter 2. Installation requirements and overview

This section reviews the software requirements and installation steps for the SurePOS 500 Models 545 and 565.

Before you begin

Read this information before you begin your installation.

Supported operating systems

This product supports the following operating systems:

- IBM PC DOS 2000 (including DBCS versions)
- Windows 2000 client with latest service packs
- Windows XP with latest service packs
- Windows XP embedded with latest service packs

Determining your configuration

You can set up your system units in either an integrated or distributed configuration. An *integrated* configuration is one in which all parts of a system are assembled in one location. A *distributed* configuration is one in which you set up parts of the system in different physical locations. In an integrated configuration, you can use the slanted I/O tray option for the wide units to contain peripheral devices, such as printers and displays, on top of wide-footprint system units. There are also slanted I/O tray options that you can mount on the full-size cash drawer or directly on the counter.

Your order and packaging

Each order includes the following components:

- System unit
- LAN patch cable; 4.2 m (14 ft), Category 5
- Country-specific power cord
- RJ45 to 9-pin serial adapter cable, 0.7m
- Factory install options, such as direct-access storage devices (DASDs), extra memory
- Safety manual
- Warranty sheet
- Customer-installed options

Note: All publications are also available from the Web site at www.ibm.com/solutions/retail/store

Handling static-sensitive devices

Attention: Static electricity can damage electronic devices and your system. To avoid damage, keep static-sensitive devices in their static protective bags until you are ready to install them.

To reduce the possibility of electrostatic discharge, observe the following precautions:

- Limit your movement. Movement can cause static electricity to build up around you.
- Handle the device carefully, holding it by its edges or its frame.
- Do not touch solder joints, pins, or exposed printed circuitry.
- Do not leave the device where others can handle and possibly damage the device.
- While the device is still in its anti-static bag, touch it and your finger to an unpainted metal part of the system unit for at least 2 seconds. (This action removes static electricity from the package and from your body.)
- Remove the device from its package and install it directly into your system, without putting it down. If it is necessary to put the device down, place it onto its static-protective bag. (If your device is an adapter, place it component side up.) Do not place the device onto the cover of the system or onto a metal table.
- Take additional care when handling devices during cold weather because heating reduces indoor humidity and increases static electricity.

Installation steps

To install the SurePOS 500, follow these steps.

1. Unpack your product and review the packing slip to ensure that it is correct.
2. Install your internal and external options. See Chapter 3, “Installing the internal and external options,” on page 17
3. Mount your SurePOS 500. See Chapter 4, “Mounting the SurePOS 500 Models 545 and 565,” on page 37.
4. Attach your input/output devices. See “Installing additional peripheral devices” on page 61.
5. Connect the power, run the CMOS Setup Utility and, if necessary, run the diagnostics. See “Using the CMOS Setup Utility” on page 71 and “Using the IBM diagnostics for POS systems and peripherals package” on page 74

Power and system indicators

See Figure 5 to locate the power switch and status indicators. After you complete your installation, follow these steps to ensure your system is operating correctly.

1. Connect the power cable to an electrical outlet.
2. See Figure 5 and switch on the power to the SurePOS 500.

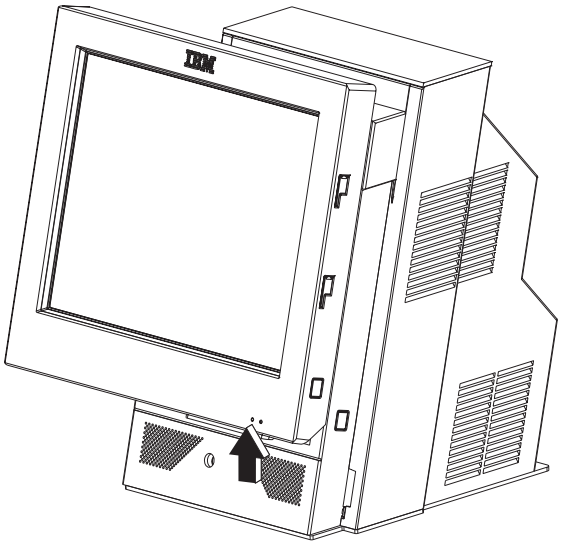


Figure 5. Location of power switch

3. Select the plus + (H) or minus – (G in Figure 2 on page 5) buttons to adjust the screen brightness.
4. Verify that the system is operating correctly by checking the indicator lights (LEDs) on the front of the system.

Table 9. Status indicators

Status/power indicator		**On**: Logic working correctly. Source AC power present and within tolerance. **Off**: System board defective or power is off **Blinking during POST**: Logic malfunction or system in suspend mode
HDD indicator		**On** HDD is reading or writing **Off**: No HDD activity **Blinking**: HDD is reading or writing
Ethernet		**Green** Left LED states: • Off - 10 Mb mode • On - 100 Mbit Right LED states • Off - No link • On - Good link • Blinking - Network activity

Chapter 3. Installing the internal and external options

Removal procedures

Before you can install the optional features, you may need to remove certain components, such as the display tablet, covers, and others. This section describes how to remove these components.

Removing the display tablet

Refer to Figure 6 on page 18.

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Tilt the tablet back and loosen the two thumbscrews **A** under the tablet.
3. Disconnect the cable from the bottom rear of the tablet.
4. Lift the tablet off the unit.

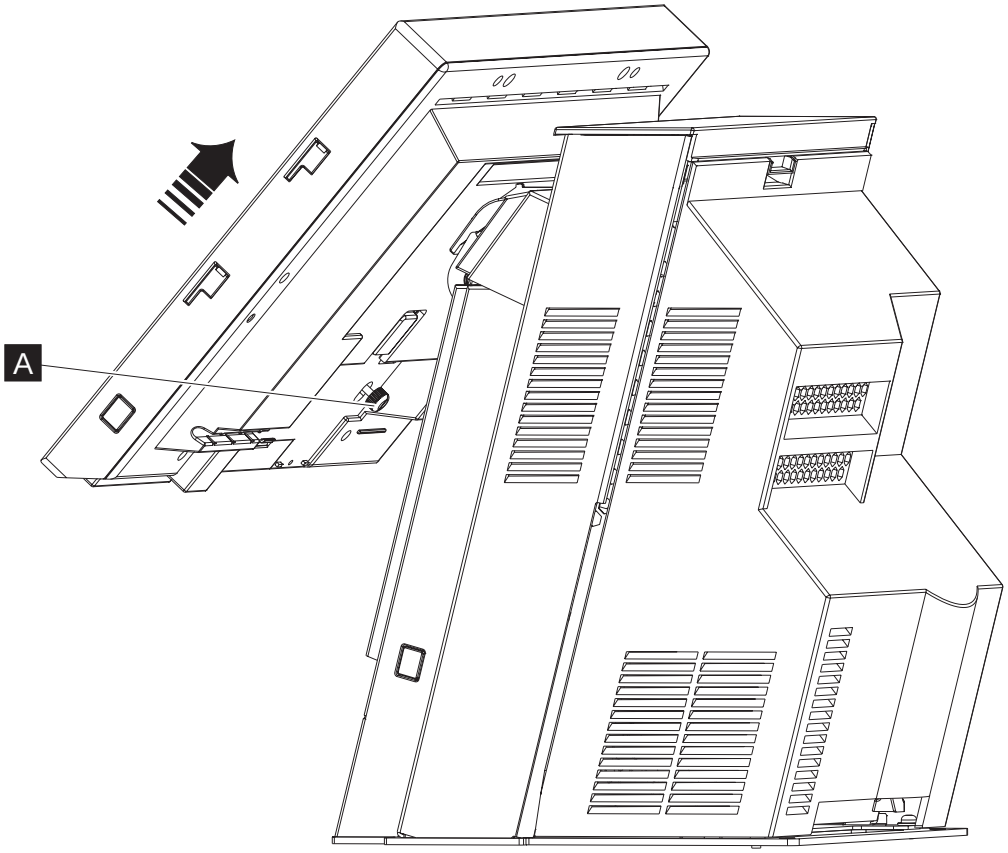


Figure 6. Display tablet, remove and replace

To replace, reverse this procedure.

Removing the covers

This section describes how to remove the front, top, rear, tower, and side covers.

Removing the front cover/HDD cover

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Tilt the top of the display tablet back.
3. Press inward on each side of the front cover/HDD cover (see Figure 7), and pull the front cover/HDD cover slightly forward.

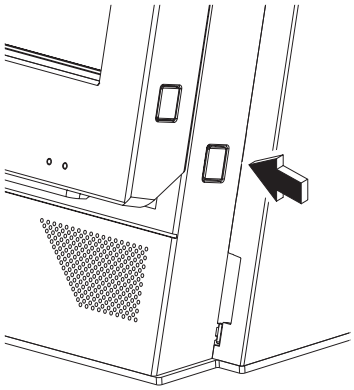


Figure 7. Unlatching front cover/HDD cover

4. Lift the cover forward and away from the unit.

Removing the rear cover

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Facing the rear of the system, press down on the latch (**A** in Figure 8), and pull downward to remove.

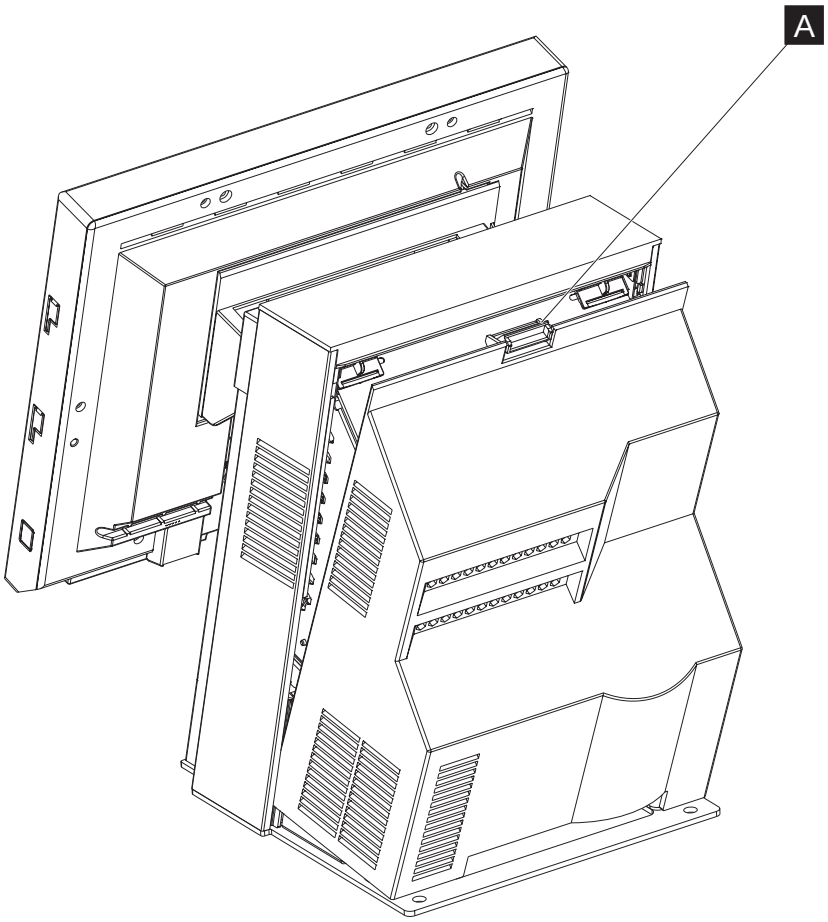


Figure 8. Removing the rear cover

3. To replace, reverse these procedures.

Removing the top cover

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Remove the rear cover, following the procedure in “Removing the rear cover” on page 20.
3. Lower the I/O tailgate cover as described in “Opening the I/O tailgate cover” on page 25.
4. See Figure 9. Facing the rear of the system, use a screwdriver to lift the latch **A** while sliding the top cover toward you (toward the rear of the unit). See Figure 9.
5. Repeat for the latch on the other side.

To replace, slide the top cover on from the rear.

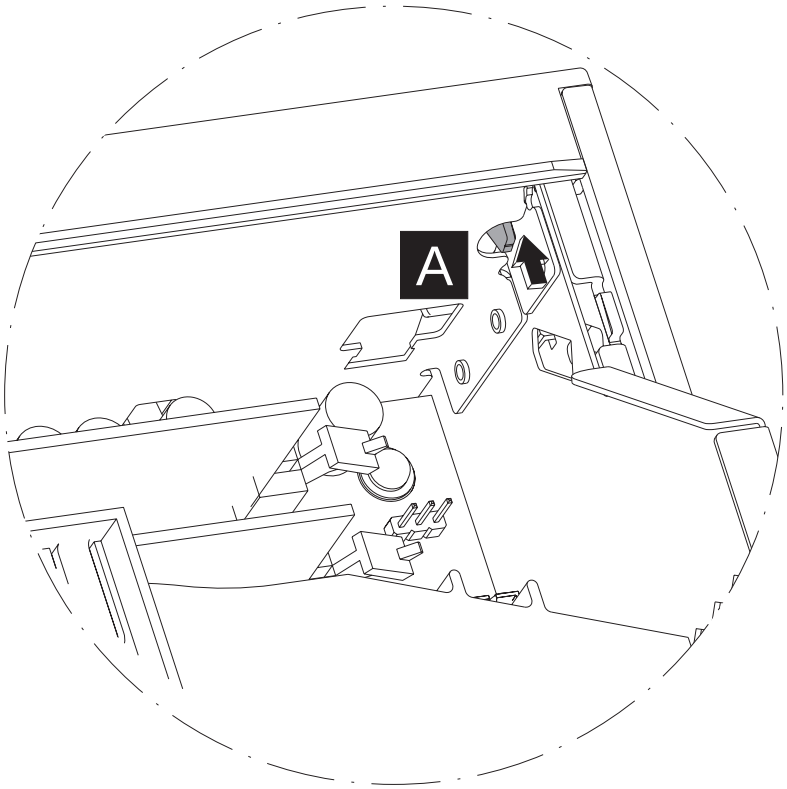


Figure 9. Top cover release latch

Removing the cable tie bar

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Remove the rear cover as shown at “Removing the rear cover” on page 20.

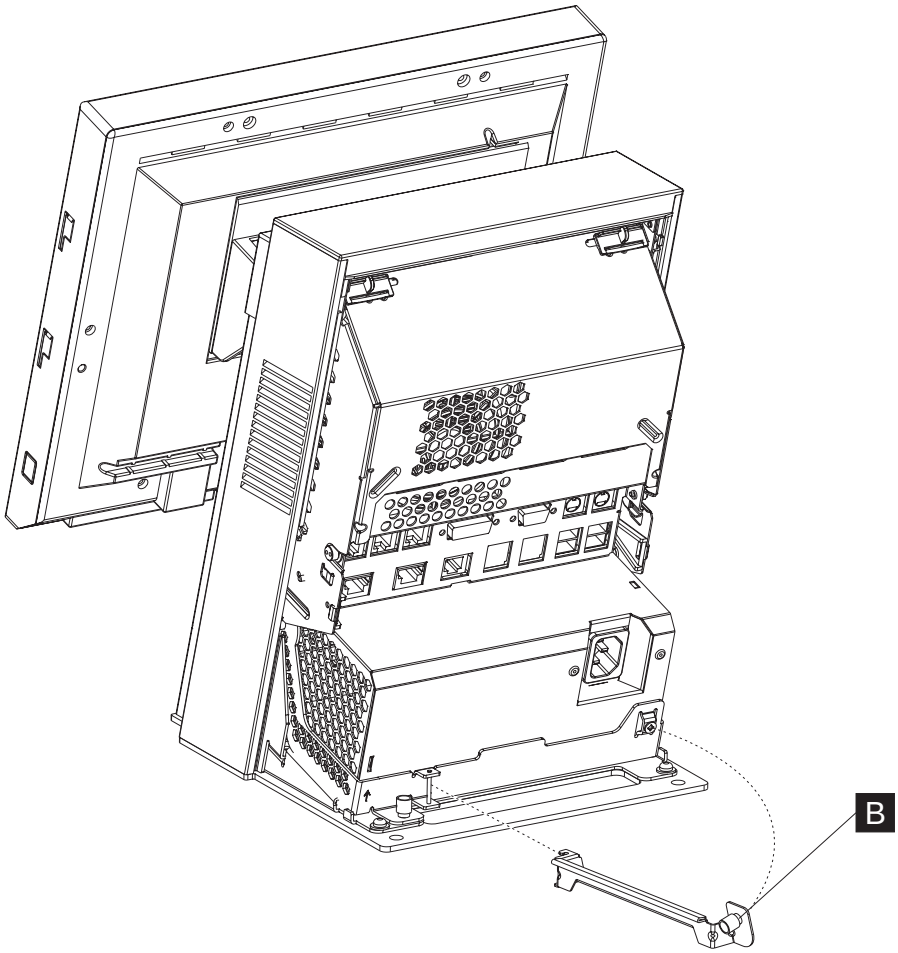


Figure 10. Cable tie bar

3. Loosen the captive thumbscrew **B**, as shown in Figure 10.
4. Remove the latch arm from the hinge by rotating and sliding it from the slots.

To replace the cable tie bar, reverse this procedure.

Removing the base plate

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Remove the rear cover as described at “Removing the rear cover” on page 20.
3. Open the cable tie bar by *loosening* the captive thumbscrew (**B** in Figure 10 on page 22) and disconnecting all of the cables.
4. Remove the two screws **A** attaching the base plate **C** to the frame **B** .
5. Slide the unit toward the rear to remove it from the base plate.
6. Slide the tower toward the rear and lift it off the base.

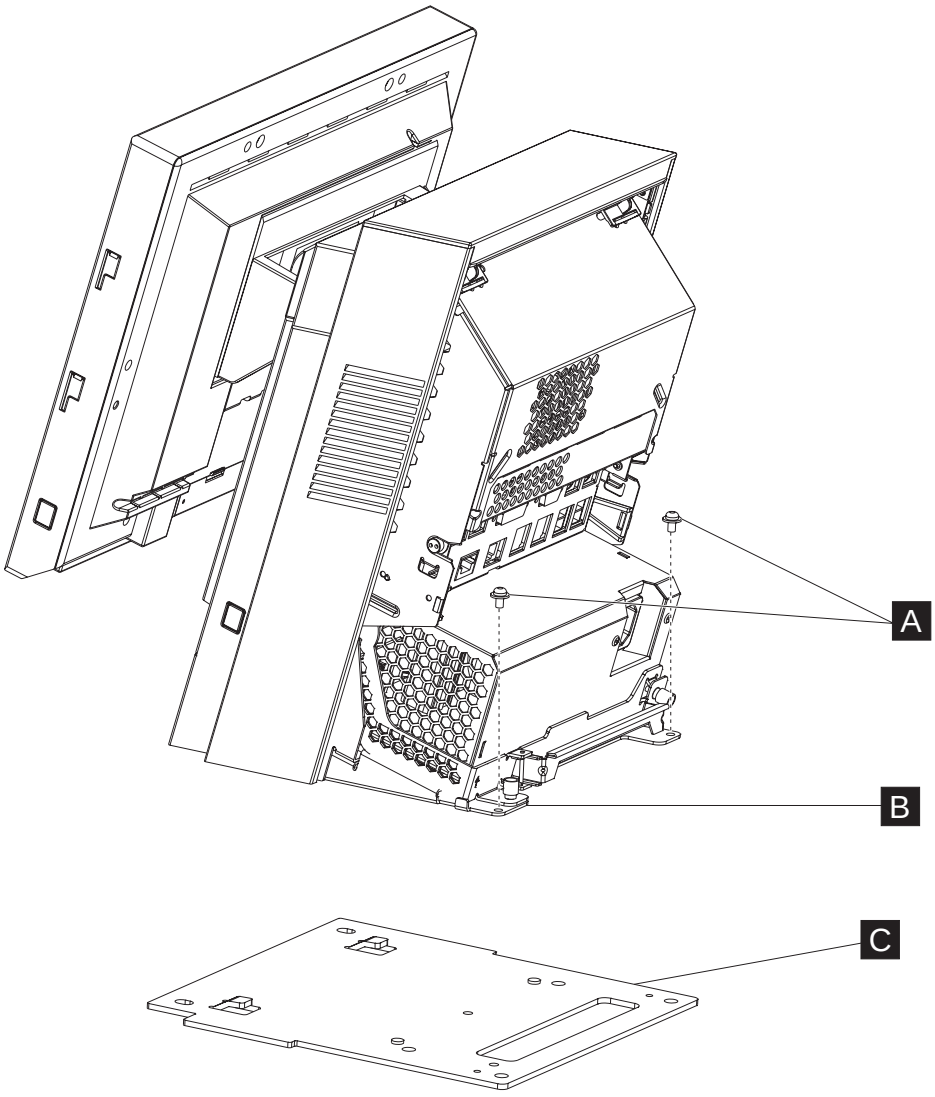


Figure 11. Base plate

Removing the modular flash drive

Attention: The modular flash drive is a static-sensitive device. See “Handling static-sensitive devices” on page 14.

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Remove the rear cover as described at “Removing the rear cover” on page 20.
3. Unplug the AC power cord on the back of the power supply.
4. Remove the power supply as described in the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
5. Remove tablet cable connector end from the system board by loosening the two thumbscrews on each side as described in the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
6. The modular flash drive **A** is installed on the motherboard on the lower left side of the panel.

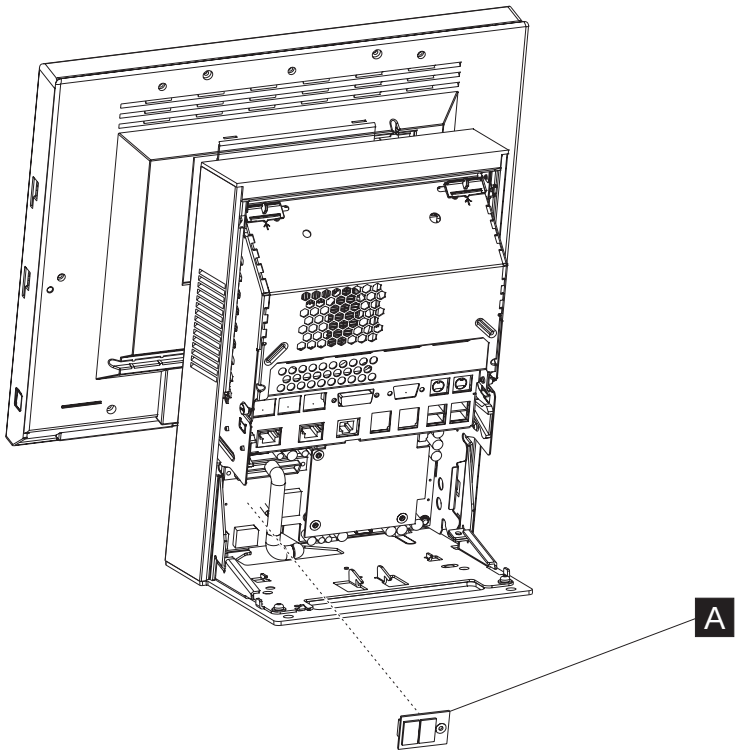


Figure 12. Modular flash drive

7. When removing the flash drive you will need to squeeze the tip of the white plastic standoff to release the flash drive.
8. Grasp firmly and pull directly back to avoid damaging pins.
9. To replace, reverse these procedures.
10. When installing, make sure to line up the flash drive hole with the standoff and push in to fully seat the connector.

Opening the I/O tailgate cover

Open the I/O tailgate cover as follows:

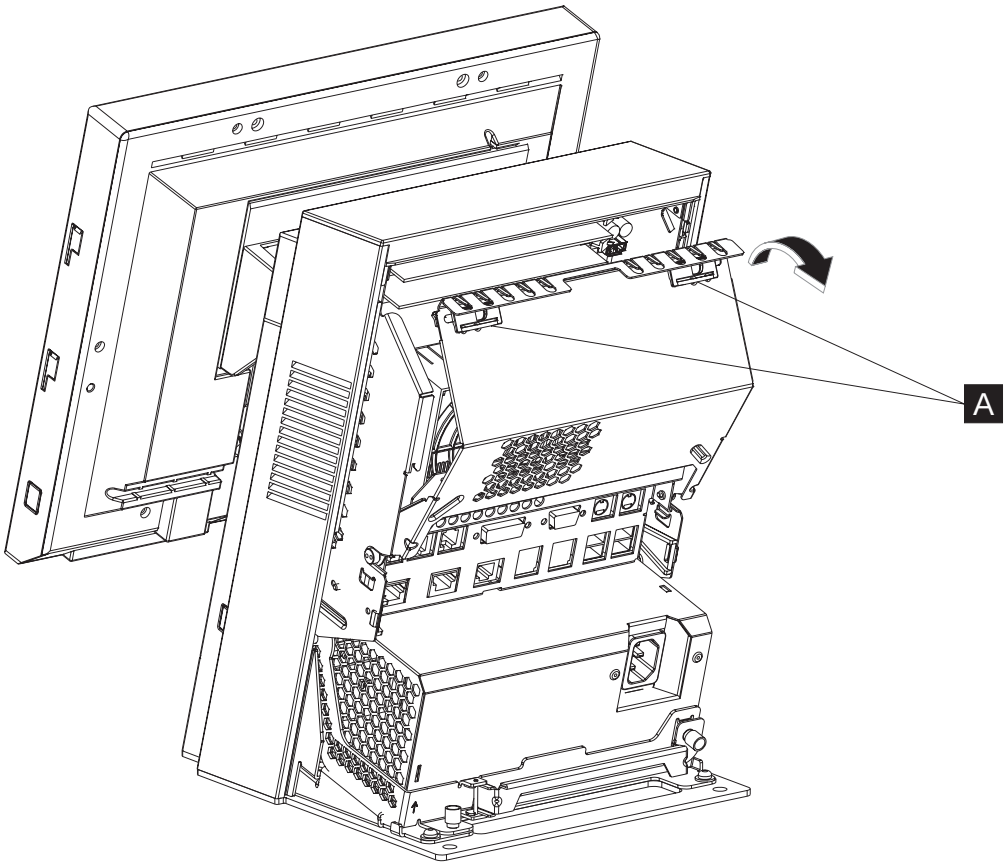


Figure 13. Opening the I/O tailgate cover

1. Remove the rear cover as described in “Removing the rear cover” on page 20.
2. Unlatch the I/O tailgate cover by sliding the latches (**A** in Figure 13) toward the center.
3. Open the I/O tailgate cover by rotating it downward.

Installing internal options

This section describes how to install the various internal options.

Installing the memory module

Attention: Establish personal grounding before touching this unit. For more information, see “Electrostatic Discharge (ESD)” on page 102.

All system boards have 2 memory sockets. The factory-installed base memory occupies one of the sockets. If your order is different than the standard base memory, you may or may not have an empty socket. See “Memory modules and industry standards” on page 28 before adding additional memory modules.

Install memory modules using the following procedure:

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Remove the rear cover as described at “Removing the rear cover” on page 20.
3. Lower the I/O tailgate cover. See “Opening the I/O tailgate cover” on page 25.
4. Locate the memory module **A** in Figure 14 on page 27 and release it by pressing outward on the two retainer tabs.
5. Before inserting a replacement module, note the alignment notch along the bottom of the module and where it plugs into the slot.

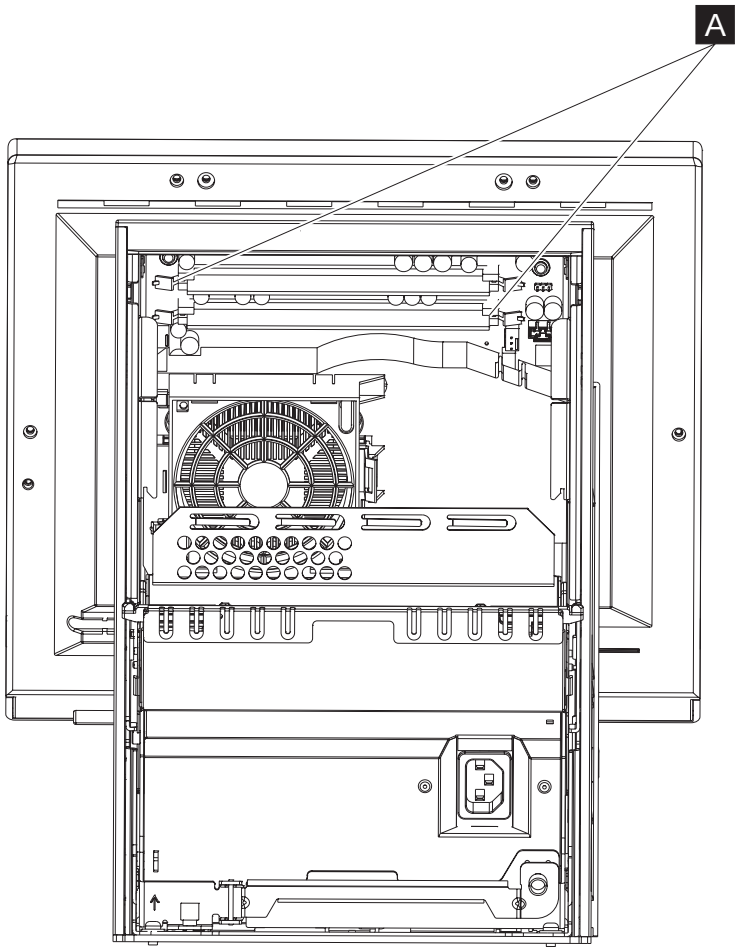


Figure 14. Memory module location

6. Touching only the top corners of the module, align the connector tabs and press the module down firmly. The white tabs at the ends of the socket will close as you insert the module. See Figure 15.

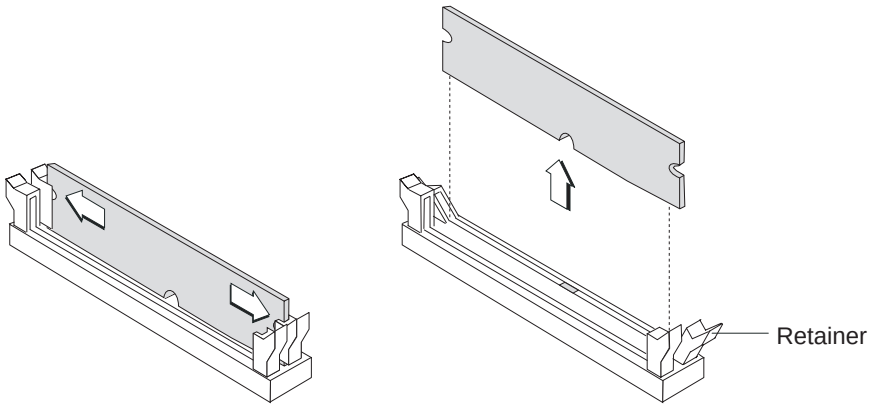


Figure 15. Memory module removal and insertion

7. Replace the I/O tailgate cover.
8. Replace the rear cover.

Memory modules and industry standards

You should use only memory provided by IBM Retail for use in Models 545 and 565. All memory does not work with every product, even though it is advertised as *industry standard*. IBM performs extensive life and reliability testing to insure that memory offered by IBM will operate correctly over all voltage and temperature ranges.

Installing the hard disk drive (HDD) and HDD bracket

Attention: The HDD is a static-sensitive device. See “Handling static-sensitive devices” on page 14. User care not to drop or jar the HDD during assembly. Do not use an impact power driver.

Note: The HDD and bracket are available together as one FRU, and are also available separately.

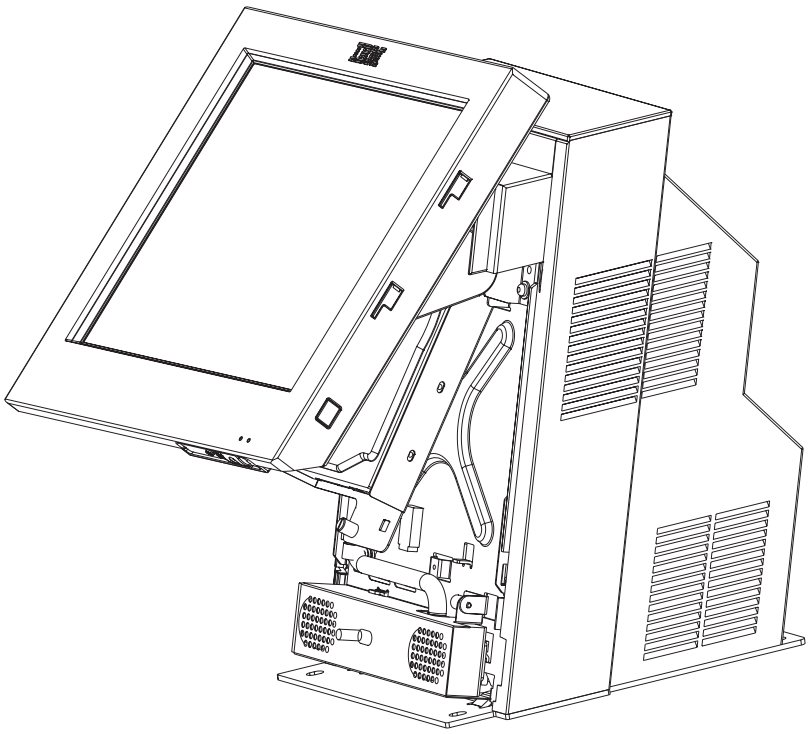


Figure 16. Installing the HDD and HDD bracket

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Tilt back the tablet (as shown in Figure 16), or optionally remove the tablet.
3. Remove the front cover/HDD cover as described at “Removing the front cover/HDD cover” on page 19.
4. Disconnect the two cables from the HDD.

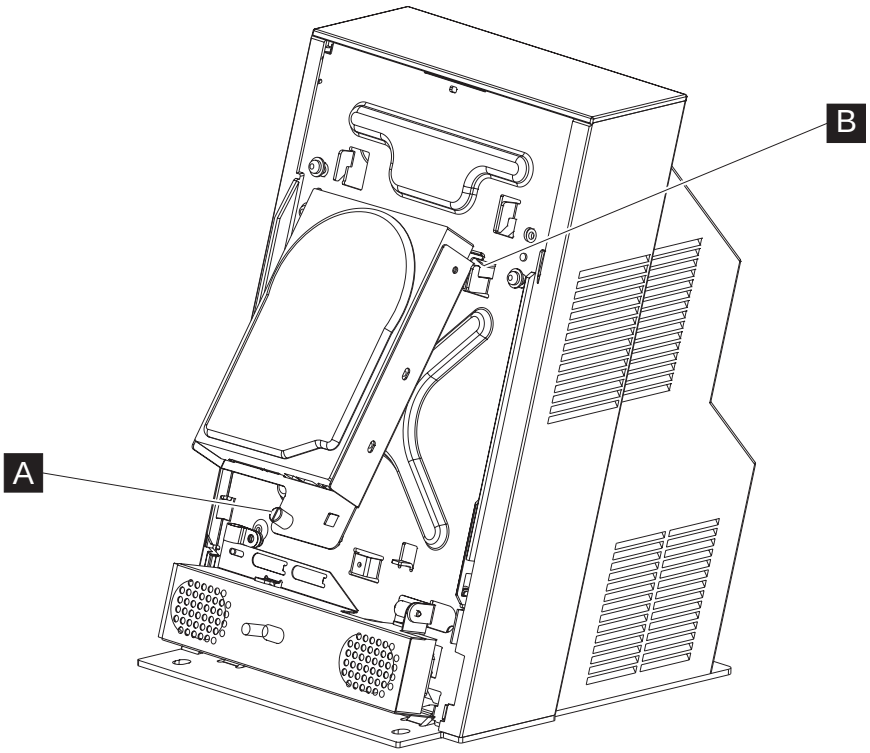


Figure 17. HDD installation. For clarity, this figure shows additional components removed; however you do not remove these to remove the HDD.

5. See Figure 17. Loosen the captive thumbscrew (**A**) and remove the HDD assembly by lifting it off of the hooks on the frame (**B**).
6. If the HDD is a separate FRU, place the HDD on a flat surface and remove the four screws and bracket.
7. Place the old HDD in protective packaging.
8. Attach the bracket to the new HDD with the four screws.
9. Reinstall the HDD and bracket assembly.
10. Reconnect the power and data cables to the HDD.
11. Power on the system and use the CMOS Setup Utility to verify that the system recognizes the new HDD. (See “Using the CMOS Setup Utility” on page 71.)

    Note: If the system fails to recognize the new HDD, verify that all connectors are properly seated.

Installing external options

This section describes how to install the various external options.

Installing a wireless adapter enclosure

To install the antenna enclosure to the display unit:

Figure 18. Assembling and installing the wireless adapter

1. First, assemble the antenna enclosure:
   a. See **A** in Figure 18. With the antenna enclosure face down, place the cable receptacle in the notches provided inside of the enclosure and route the cable to the end of the unit.
   b. Place the wireless adapter into the enclosure and plug into the receptacle.
   c. See **B** in Figure 18. Slide the back cover on the antenna enclosure, ensuring that the cable is not pinched.

Figure 19. Installing the antenna enclosure

2. Locate the holes on the top of the display and align the bottom of the antenna-enclosure assembly with these holes.
3. See **C** in Figure 19. Insert the two screws into the back of the antenna-enclosure assembly and tighten to fasten the unit to the top of the display.
4. Route the cable in one of the following manners:
   - Outside of the hinge cover and press cable into slot as shown in **C**, or
   - Remove the tablet and route the cable behind the hinge cover using the notch in the top edge of the hinge cover.
5. Plug the end into one of the USB connectors at the rear of the tablet.

After installation, run the diagnostics to ensure that the wireless adapter operates correctly. See “Using the IBM diagnostics for POS systems and peripherals package” on page 74.

Installing a PC card

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Remove the front cover/HDD cover. See “Removing the front cover/HDD cover” on page 19.

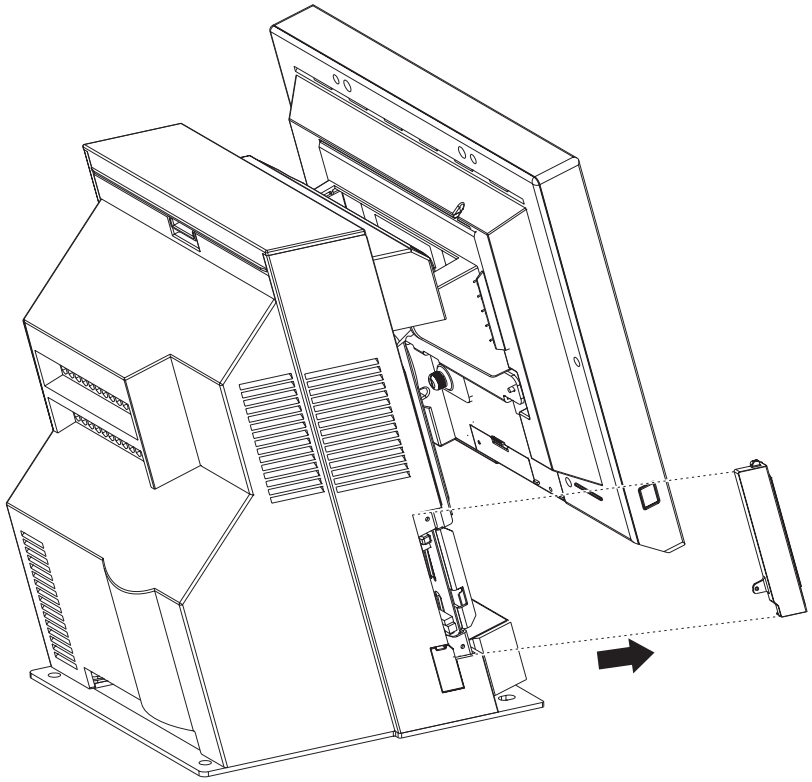


Figure 20. Removing the PC card adapter slot blank

3. Remove the PC card cover as shown in Figure 20.

   Note: You can use either the PC card cover or the wireless cover, but not both.
4. If a wireless LAN antenna cover is present, remove the two screws, as shown in Figure 21 on page 33.
5. Press the PC card adapter eject button. Do not pull the interface cable to remove the adapter card and connector. Gently pull on the adapter card.

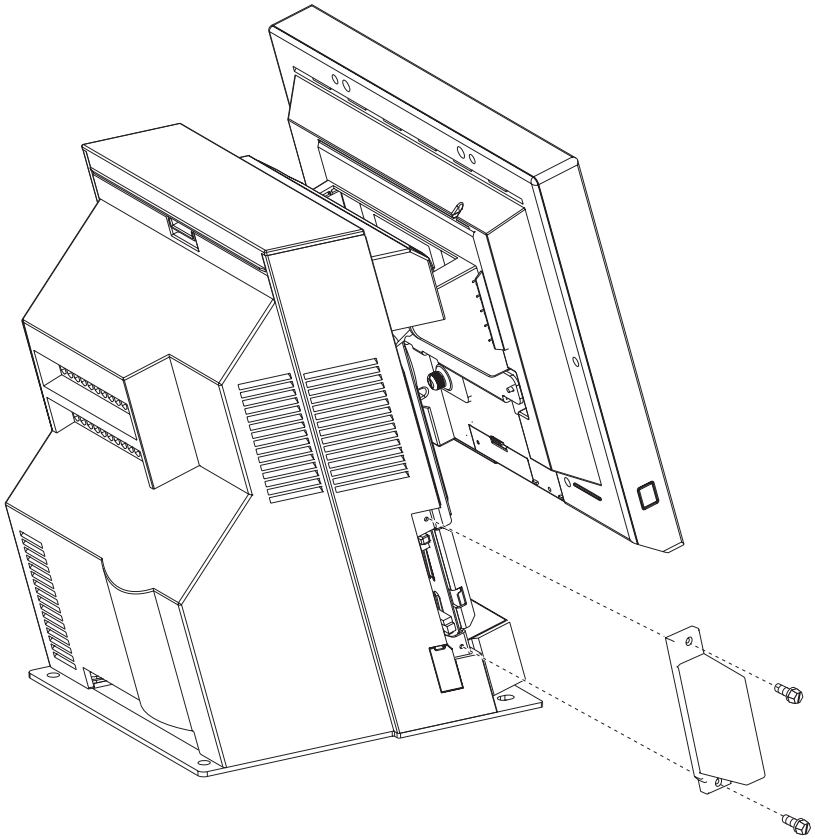


Figure 21. Removing a PC card adapter

To replace, reverse this procedure. For information about defining the PC card to the system, go to the CMOS Setup Utility main menu. See “Using the CMOS Setup Utility” on page 71.

Note: Before removing a PC card with the system unit running Windows, IBM recommends that you stop the PC card in Windows before you physically remove it.

After installation, run the diagnostics to ensure that the PC card operates correctly. See “Using the IBM diagnostics for POS systems and peripherals package” on page 74.

Installing the MSR

Note: The electronic article surveillance device that deactivates security tags should not be closer than 18 in. (46 cm.) to the nearest edge of the magnetic stripe reader (MSR).

Two types of MSRs can attach to the SurePOS 500 Models 545 and 565 display:

- Dual-sided, single-track MSR (RS-232 interface only)
- Three-track MSR (RS-232 or keyboard interface)

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. For three-track MSR only, set the slide switch that is located on the MSR to the correct setting for either RS-232 or keyboard interface. See Figure 22.
3. Using a screwdriver, pry the MSR hole plugs out of the unit.
4. Install the MSR (**D** in Figure 22) by aligning it with the key holes on the tablet and then sliding the MSR down. (Be careful that you do not pinch the cable, **A** .)
5. Plug in the MSR connector.
6. Install the thumbscrew **C** provided with the MSR, as shown in Figure 22. Use care not to overtighten the screw.

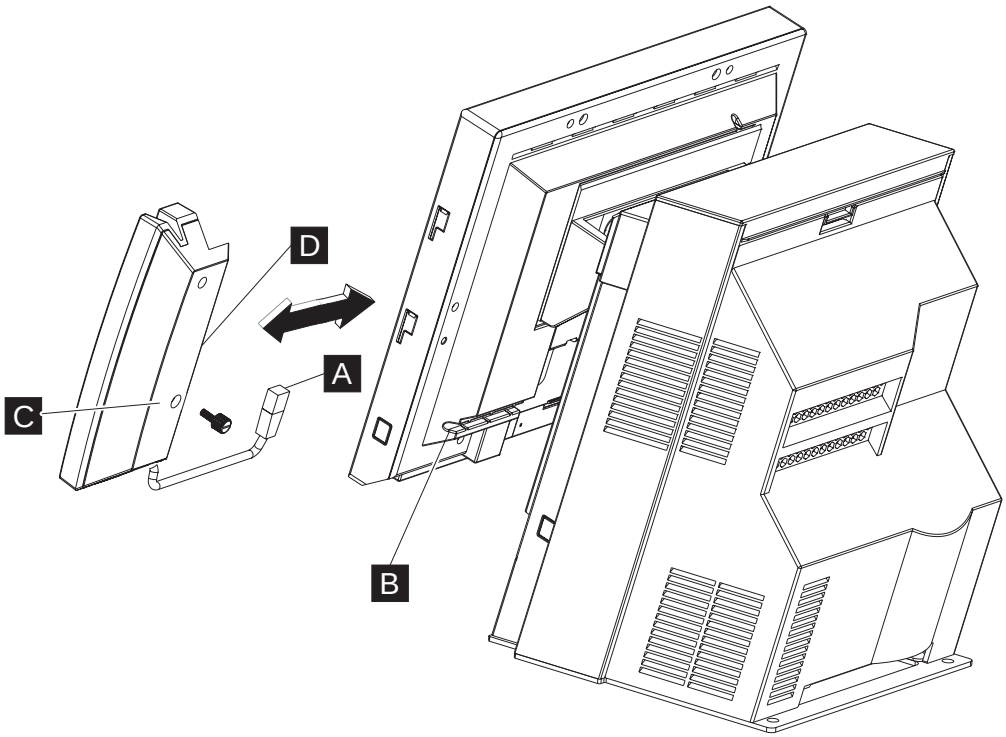


Figure 22. Installing magnetic stripe reader (MSR)

7. Route the cable **A** in groove **B** .

The MSR default baud rate is 19 200 bps, 8 data bits, no parity bit, and 1 stop bit (19200–8–N-1).

After installation, run the diagnostics to ensure that the MSR operates correctly. See “Using the IBM diagnostics for POS systems and peripherals package” on page 74.

Installing the integrated customer display

1. Switch OFF the power to the SurePOS 500. Unplug the power cord from the external power source.
2. Remove the rear cover. See “Removing the rear cover” on page 20.
3. Open the I/O tailgate cover by sliding the latches inward.

   Note: You do not need to remove the tailgate cover.
4. Disconnect the integrated display cable from the rear of the system board.

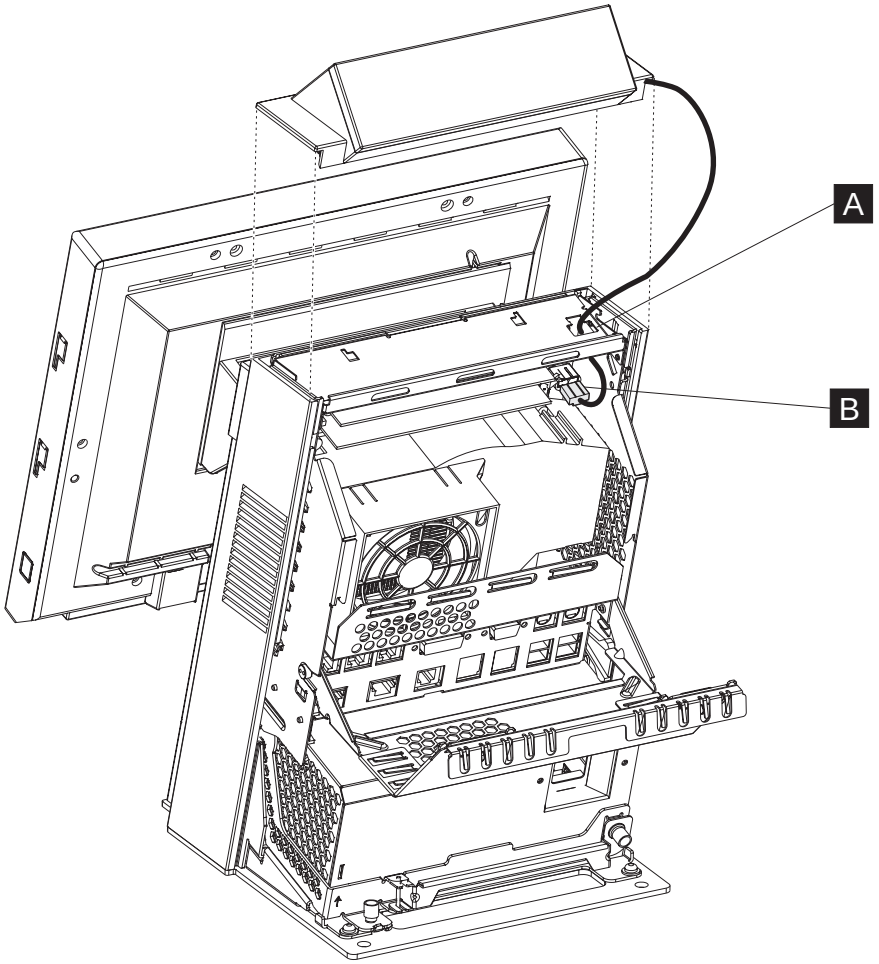


Figure 23. Installing and connecting the integrated display

5. Remove the existing integrated display or top cover. See “Removing the top cover” on page 21.
6. Snap the new integrated display in place, after routing the cable through the hole (**A** in Figure 23) in the top of the unit.
7. Connect the cable to the upper-right connector (**B**) of the system board.
8. Close the I/O tailgate cover and replace the rear cover.

After installation, run the diagnostics to ensure that the integrated display operates correctly. See “Using the IBM diagnostics for POS systems and peripherals package” on page 74.

Chapter 4. Mounting the SurePOS 500 Models 545 and 565

Table 10 describes the various mounting configurations of the SurePOS 500.

Note

Figures in this section are representative of the SurePOS 500 family and may have slight differences with the Models 545 and 565. All mounting procedures are accurate.

Table 10. Mounting configurations

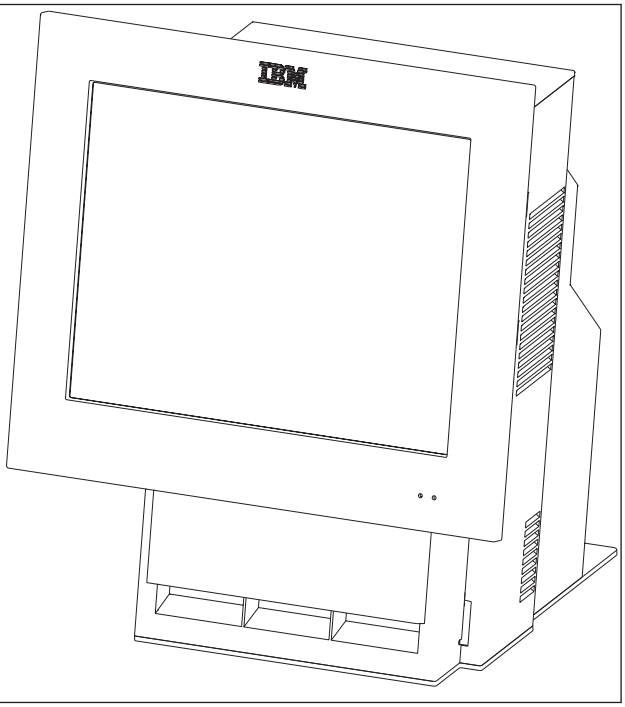
To mount using the base to the countertop, see “Mounting the base plate on a countertop” on page 39.	

Table 10. Mounting configurations (continued)

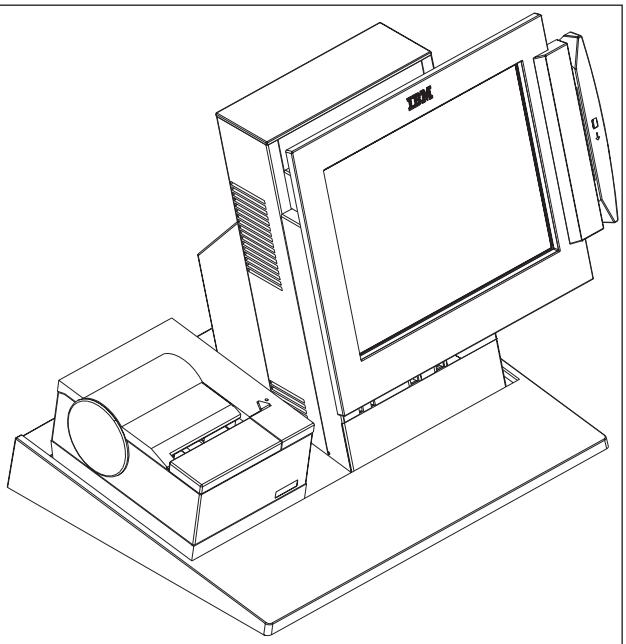
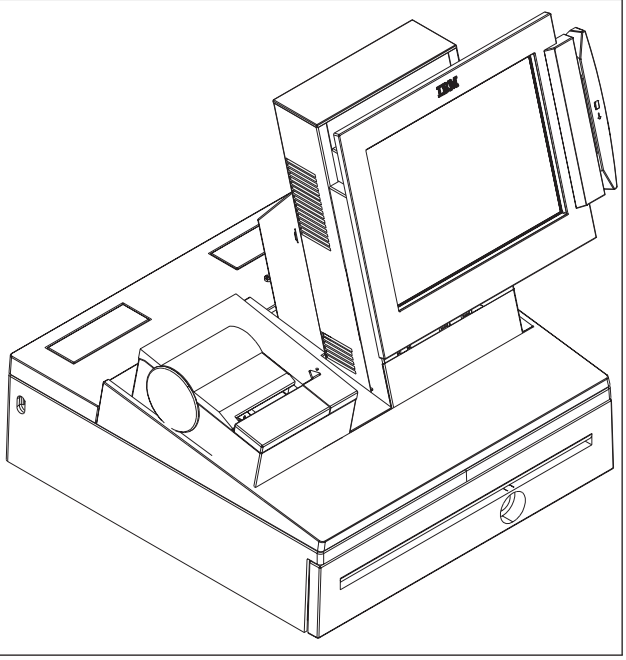
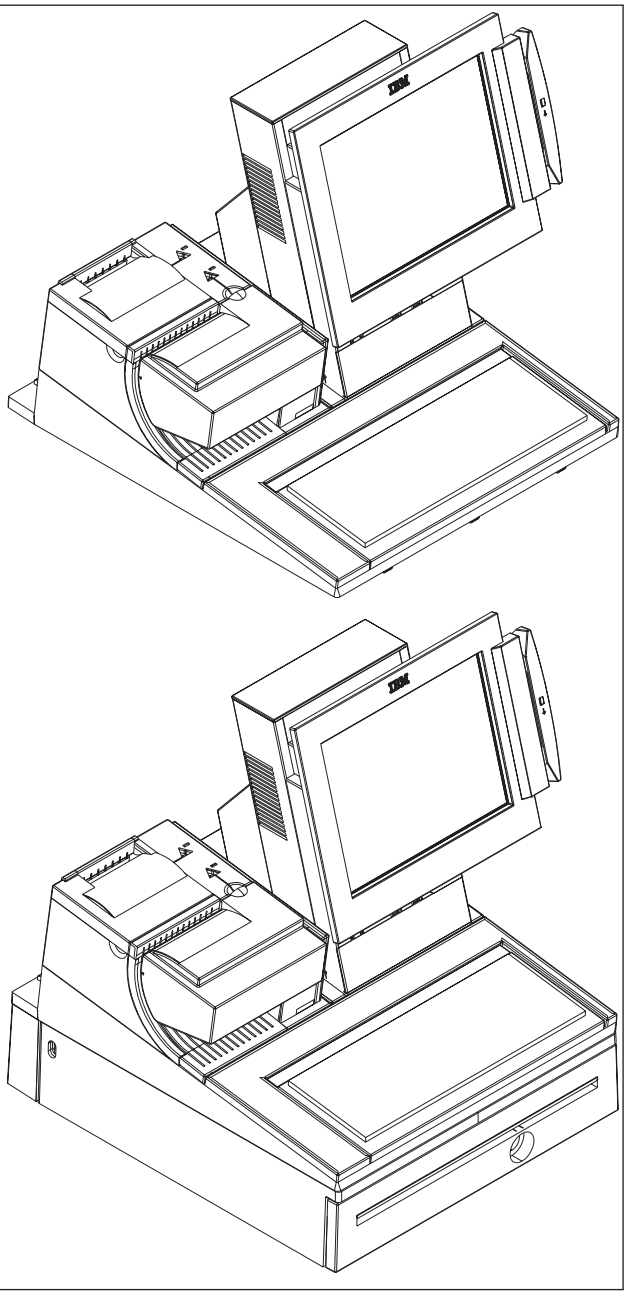
To mount to a countertop using the non-keyboard-integration tray, see “Countertop with non-keyboard-integration tray mounting” on page 42.	
To mount on a cash drawer using the non-keyboard-integration tray, see “Cash drawer” on page 47.	

Table 10. Mounting configurations (continued)

To mount on a countertop or cash drawer using the keyboard-integration tray, see “Countertop and full-size cash drawer” on page 52	

Before mounting your system, first install any internal and external devices on the unit.

Mounting the base plate on a countertop

You can mount the SurePOS 500 Models 545 and 565 free-standing base plate to a countertop with two or four mounting screws. If you are routing the cables under the counter, you can use the base plate as a pattern to cut out your counter or use the specific mounting hole and cutout dimensions as shown in Figure 24 on page 40.

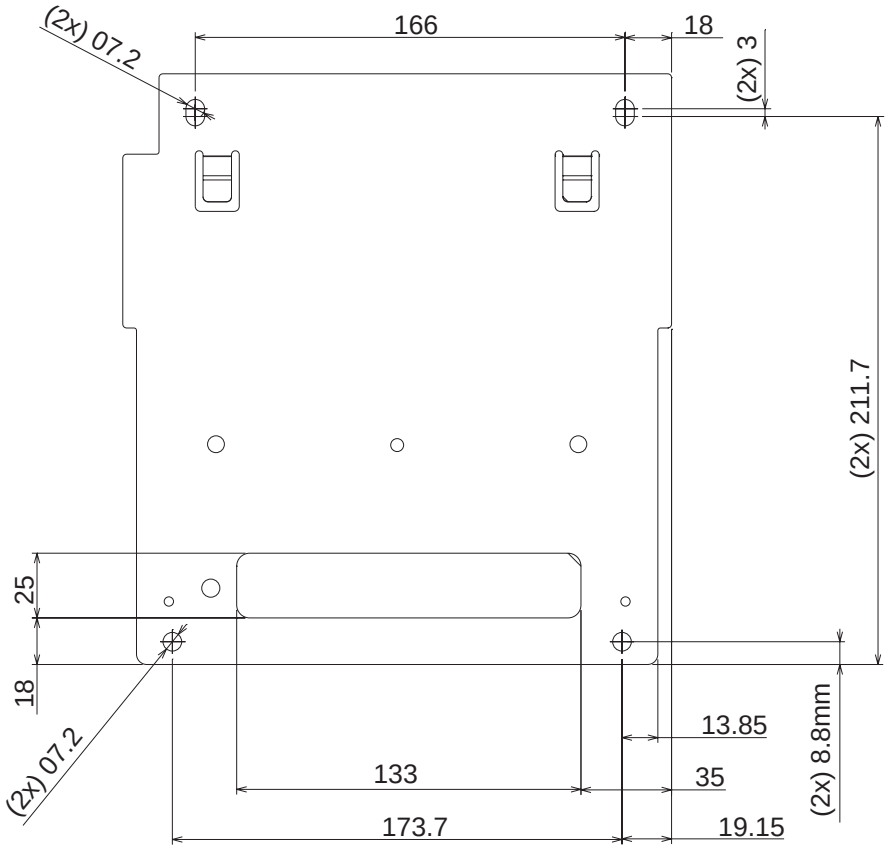


Figure 24. Base plate countertop dimensions

Route all cables (including the AC power cord) through the cable-access hole in the base plate. If you are routing the cables on top of the counter, route all cables out the rear of the system. Lay the cables flat along the countertop.

To mount the system directly on a countertop:

Note: Before you begin, acquire two mounting screws. These are not supplied.

1. Remove the rear cover.
2. Remove the cable-tie bar by loosening the thumbscrew.
3. Use the SurePOS 500 base plate as a pattern for drilling two mounting-screw holes at location **S** in Figure 25 on page 41. If you plan to route the cables underneath the counter, use the base plate as a pattern to drill the cable opening and for drilling the holes for the mounting screws.
4. Attach the system to the countertop with two mounting screws.

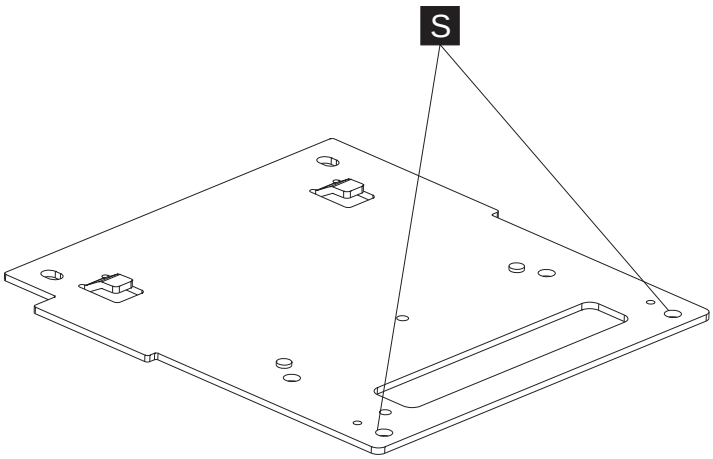


Figure 25. Attaching the base foot to the countertop

5. Connect the power cable to the power supply.
6. Connect the peripheral device cables to the appropriate ports on the rear connector panel. Make the connections on the bottom row of the connector panel first and work upward. Ensure that the cables are routed to the right of the power cord.

   Note: For a diagram of the port layout, see “Connectors, power, and brightness controls” on page 5.
7. Rotate the cable-tie bar back into place and tighten the thumbscrew.
8. Use tie-wraps to secure cables to the cable-tie bar, if desired.
9. Replace the rear cover.
10. Plug the AC power cord into an AC outlet.
11. After your installation is complete, switch ON the power to the SurePOS 500 and verify that the system is operating correctly by checking the indicator lights (LEDs) on the front of the touch screen.
12. Install your software. Refer to *IBM SurePOS Model 545 and 565 Operating System Installation Guide*.

Non-keyboard-integration tray mounting

Some integration trays for countertop are designed to accommodate a keyboard and cash drawers, and some are not. The procedures in this section are for non-keyboard-integration tray mounting for the countertop and cash drawer. For keyboard-integration tray mounting, go to “Countertop and full-size cash drawer” on page 52.

Countertop with non-keyboard-integration tray mounting

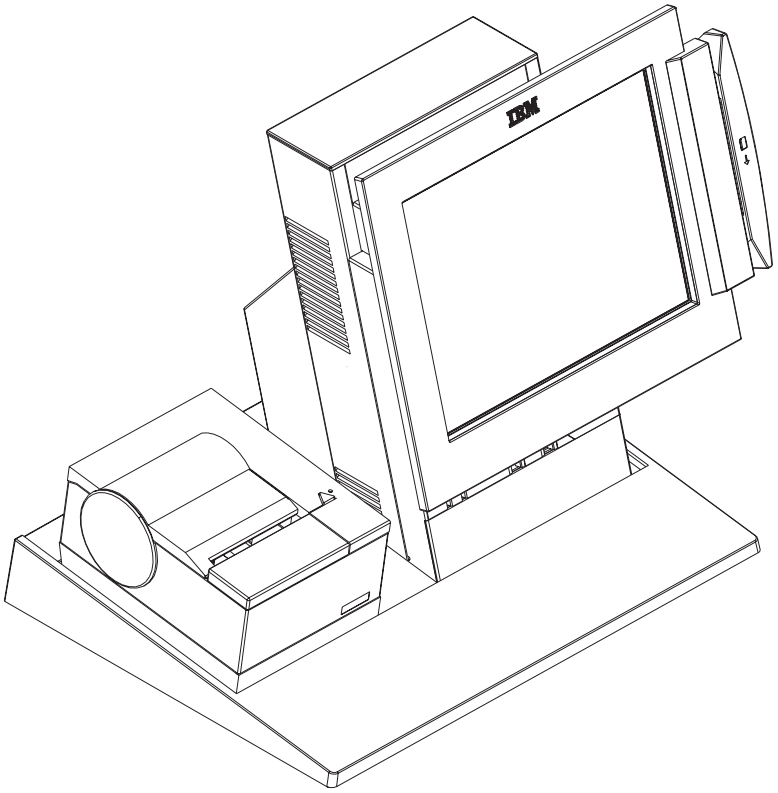


Figure 26. Countertop with non-keyboard-integration tray mounting

The countertop integration tray can be used as a free-standing unit or secured to a countertop using mounting screws. Use the countertop integration tray drawing that comes with it as a pattern for drilling the four mounting holes and for the cable opening, if you plan to route the cables through the countertop. Four screws (not provided) are required to mount the integration tray to a countertop. For specific mounting hole and cutout dimensions, see Figure 27 on page 43.

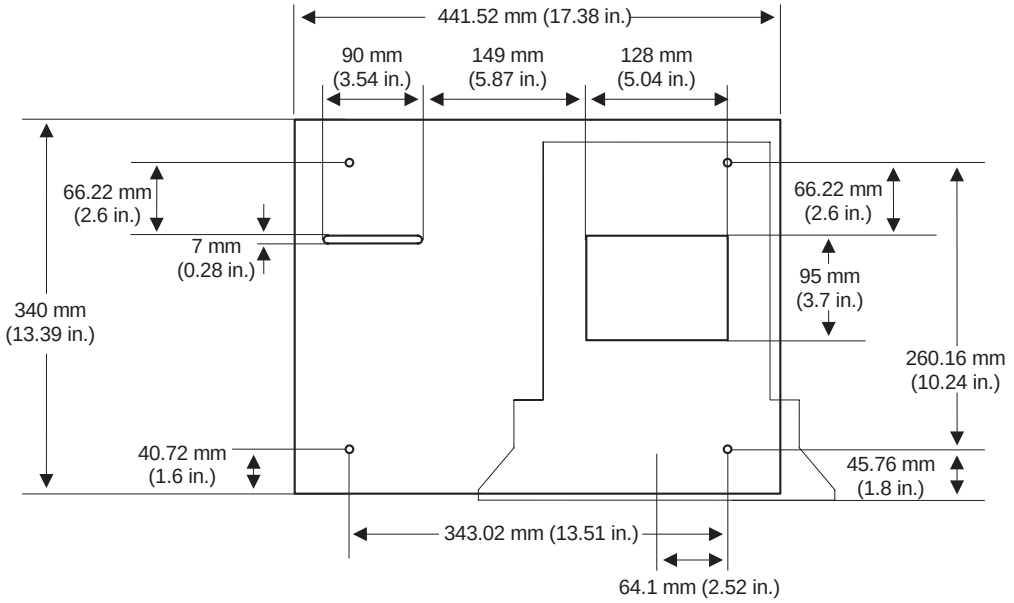


Figure 27. Countertop integration tray pattern with display and countertop cutout on right side

Note: Acquire the four mounting screws before you begin this installation.

1. For a free-standing unit, ensure that the four rubber feet **H** are installed on the bottom of the countertop integration tray (as shown in Figure 30 on page 45).
2. To secure the countertop integration tray to a countertop, perform the following steps:
   a. Detach the plastic fence from the countertop integration tray. To detach the plastic fence:
      1) Spread the rear sides away from the tray as shown in Figure 28.

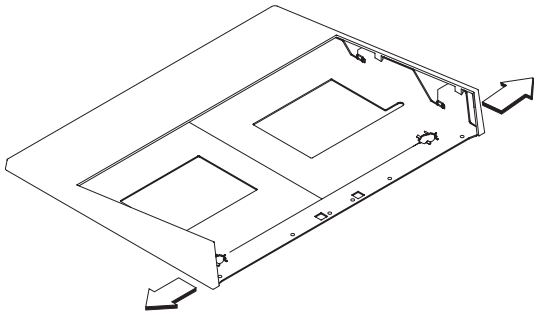


Figure 28. Detaching the fence from the tray

      2) Alternating from side to side, slide the plastic fence **B** about 7 mm (0.25 in.) until the plastic fence is detached from the metal integration tray **A**, as shown in Figure 29 on page 44.

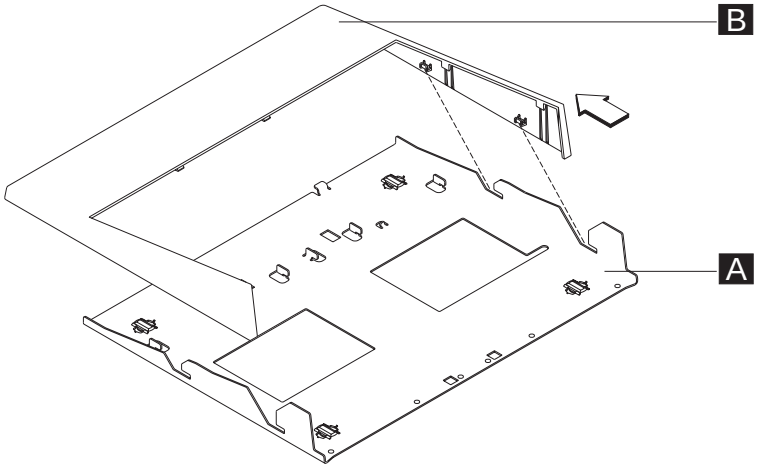


Figure 29. Sliding the fence off of the integration tray

b. Drill the four mounting holes and cut a hole in the countertop for cables, if needed. Use Figure 27 on page 43 or the openings in the integration tray as a pattern for drilling mounting holes and a cable opening in the counter. See Figure 30 on page 45 for reference.

c. Remove the four rubber feet located on the bottom of the integration tray. See Figure 30 on page 45 for the location of the feet.

d. Attach the integration tray to the countertop using four mounting screws, one at each corner of tray. The four mounting screws are *not* provided with the kit. Use 60-mm (0.25-in.), pan-head screws.

e. Reattach the fence to the integration tray.

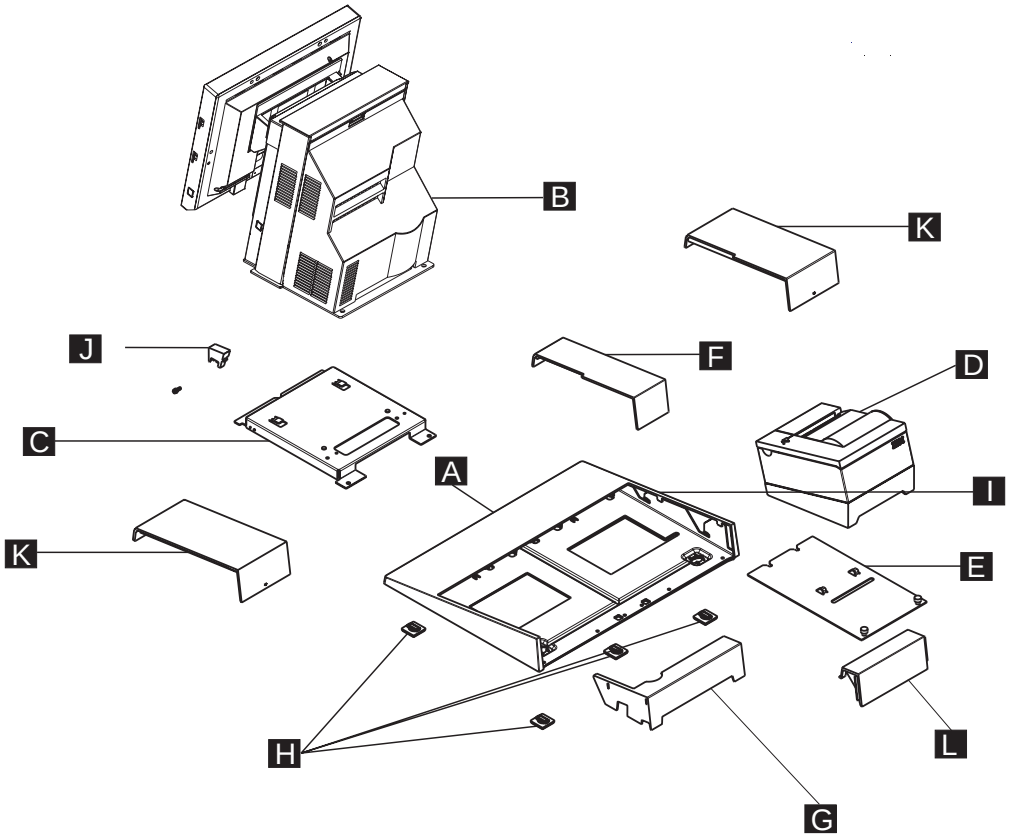


Figure 30. Overview of integration tray, SurePOS 500, printer, and filler panels

Table 11. Countertop integration tray legend

A	Fence	G	System filler panel
B	SurePOS 500	H	Four rubber feet
C	Mounting plate	I	Countertop integration tray
D	4610 SureMark Printer	J	Small filler panel
E	Mounting plate for 4610 SureMark printer	K	Filler panel used when printer is absent
F	Center filler panel	L	Filler panel used when printer is present

3. Remove the rear cover as shown in “Removing the rear cover” on page 20.
4. Attach small filler panel **J** to the mounting plate **C**.
5. Remove the base plate and place the unit on the mounting plate **C**.

6. Attach the SurePOS 500 and its mounting plate **C** to the right side of the integration tray **I** as shown in Figure 30 on page 45. Slide the front of the mounting plate under the appropriate pair of tabs on the tray and secure the rear of the mounting plate to the tray with two thumbscrews.
7. Install the IBM 4610 SureMark Printer on the integration tray. Go to “Installing IBM 4610 SureMark Models TF6 or TF7 printers” on page 63 for detailed instructions on mounting plate installation and printer cable routing.
   a. Attach the printer to its mounting plate as shown in Figure 49 on page 65.
   b. Install the printer and the printer cables and route the cables as shown in Figure 48 on page 65.
8. Connect the peripheral device cables to the appropriate ports on the rear connector panel. Make the connections on the bottom row of the connector panel first and work upward. Ensure that the cables are routed to the right of the power cord.

   Note: For a diagram of the port layout, see “Connectors, power, and brightness controls” on page 5.
9. Use tie-wraps to secure cables to the cable-tie bar, if desired.
10. Replace the rear cover.
11. Plug the AC power cord into an AC outlet.
12. Replace the SurePOS 500 rear cover.
13. Install the filler panels after you route all the cables to your system.
    a. Install the outer ends of the filler panels **L** and **G** into the integration tray. Notice that the printer filler panel, shown on the right, is narrower than the system filler panel. Also, the system filler panel has a bottom slot that allows you to route the cables out the back.
    b. Use the narrow filler panel **K** to lock the filler panels together between the system and the printer.

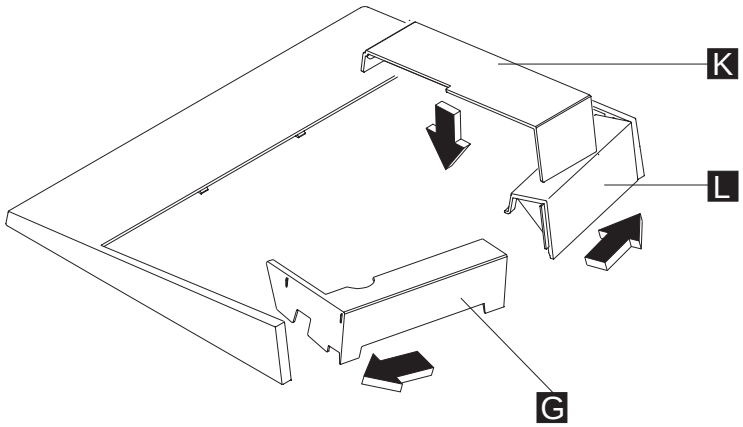


Figure 31. Connecting filler panels

Note: Depending on your desired configuration, you could have unused filler panels.

14. Plug the system and printer AC power cords into an AC outlet.
15. After your installation is complete, press the printer power switch under the printer cover to power On the printer.

16. Switch ON the power to the SurePOS 500. Verify that the system is operating correctly by checking the indicator lights (LEDs) on the front of the touch screen.
17. Install your software. Refer to *IBM SurePOS Model 545 and 565 Operating System Installation Guide*.

Installing filler panels without a printer

For systems without a printer:

1. Install the mounting plate in the ***center*** of the base using the removable thumbscrews. See Figure 30 on page 45.
2. Install the system unit in the center using the mounting plate. Use system filler **G** and **K**.

Cash drawer

You can mount the SurePOS 500 on a full-size cash drawer by first installing an integration tray on the cash drawer. Follow these steps:

1. To mount the integration tray onto the cash drawer:
   a. Tilt the integration tray forward, and slide the tabs into the slots near the front of the drawer. Lay the tray down on the cash drawer.
   b. Attach the cash drawer integration tray to the cash drawer by tightening two M6x8 screws **A** at the rear of tray, as shown in Figure 32.

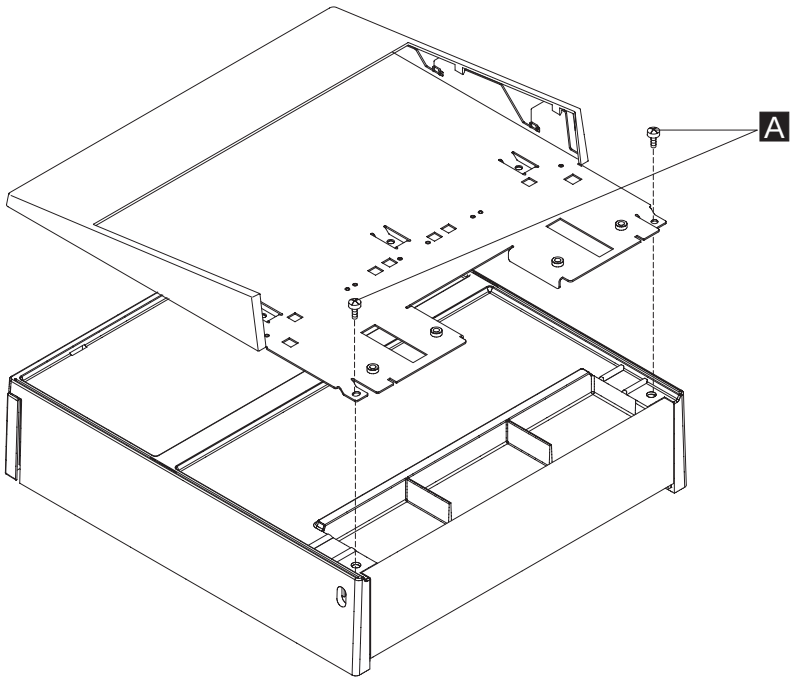


Figure 32. Attaching the integration tray to cash drawer

2. To install the SurePOS 500 on an integration tray:
   a. Remove the rear cover. “Removing the rear cover” on page 20.
   b. Remove the base plate. See “Removing the base plate” on page 23.
   c. Attach the system base to the mounting plate **B** with the screws **C**, as shown in Figure 33.
   d. Open the rear cash drawer cover **D** by pushing in the two buttons located on each side of the cash drawer. This provides access to the cash drawer connector for cabling it to the system. You will also route cables inside the cover through hole **E** and to the system.

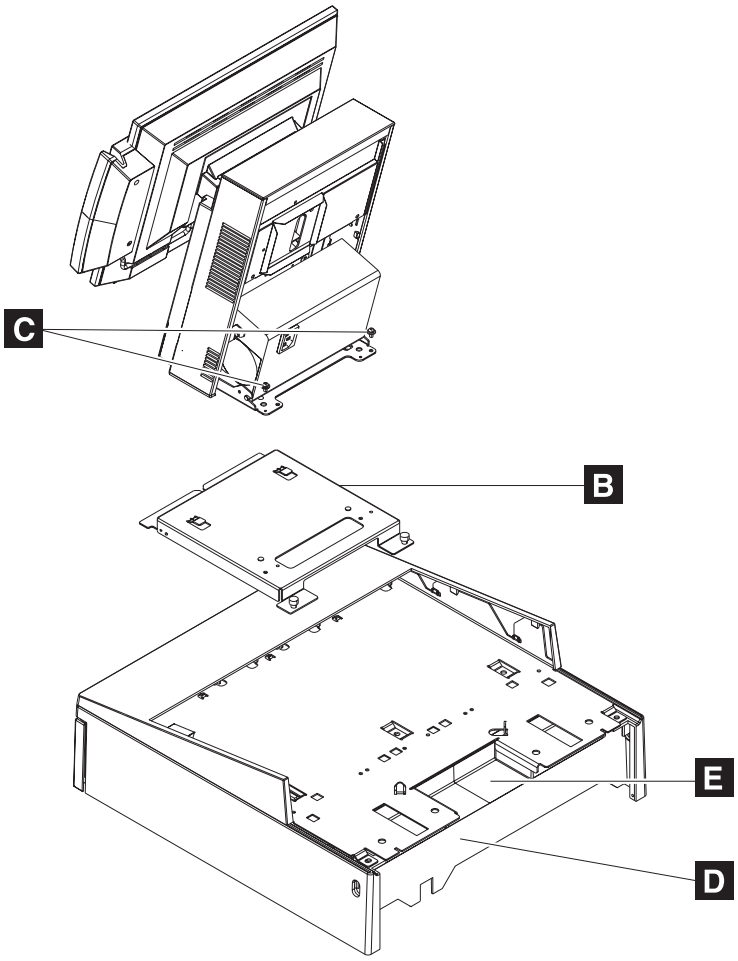


Figure 33. Attaching a mounting plate to center of cash-drawer integration tray

3. For installations **without a printer**, install the mounting plate in the *center* of the base using the removable thumbscrews. Place the filler panels on both sides. See Figure 30 on page 45. Install rear system panel **G** first and use filler panels **K** to lock in filler panel **G** onto the tray.
4. Install the IBM 4610 SureMark printer on the integration tray with the SurePOS 500. Go to “Installing IBM 4610 SureMark Models TF6 or TF7 printers” on page 63 for detailed instructions on printer cable routing, RS-232 printer switch settings, and mounting plate installation:
   a. Plug the data and power cables into the printer, routing the data cable, under the cable tie bar and toward the rear connector panel as shown in Figure 48 on page 65.

b. Attach the SurePOS 500 Models 545 and 565 base mounting plate **A** to the right side of the integration tray. Slide the front of the plate under the appropriate pair of tabs on the integration tray. Secure the rear of the plate to the tray with two thumbscrews as shown in Figure 34.

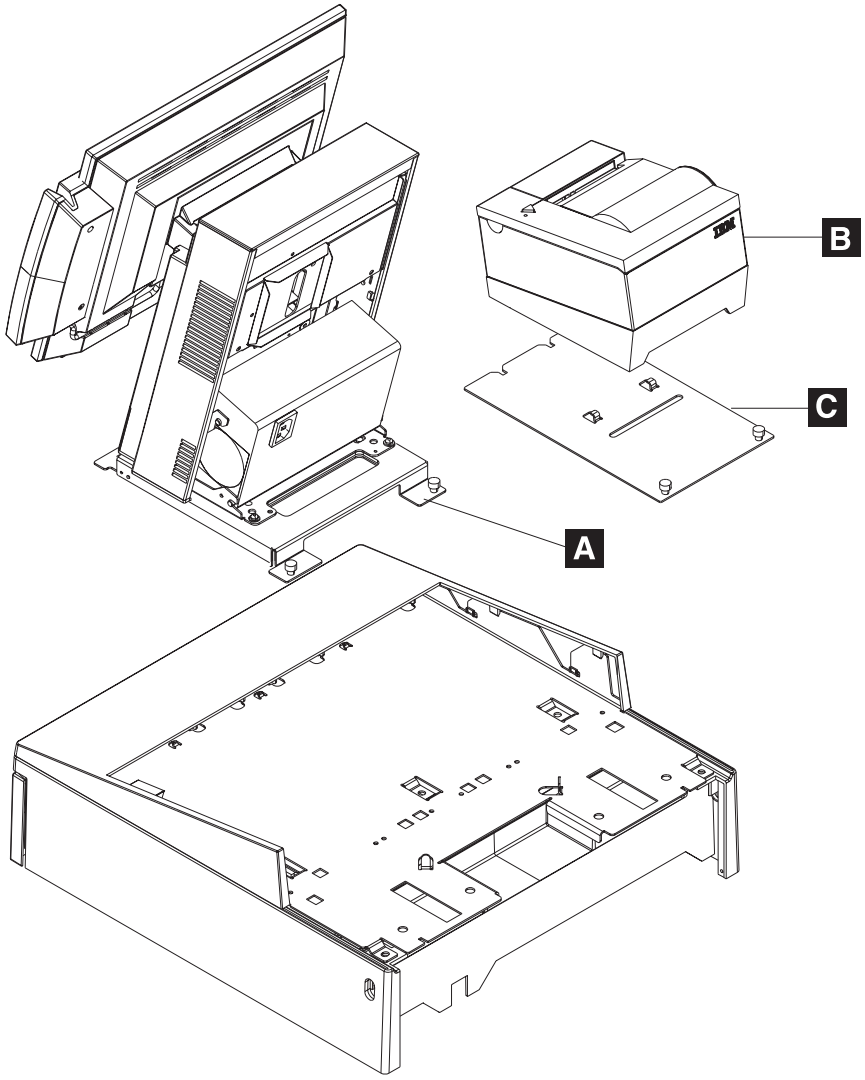


Figure 34. Attaching mounting plate to the cash drawer integration tray

c. Attach the printer **B** to the printer base mounting plate by sliding it onto the two tabs until it locks in place.

d. Attach the printer base mounting plate **C** to the integration tray. Slide the front of the plate under the appropriate pair of tabs on the integration tray. Secure the rear of the plate to the tray with two thumbscrews.

5. Plug the cash-drawer cable into the cash drawer and route it under the cable-tie bar to the rear connector panel.
6. Plug the data and power cables into the printer, routing the data cable under the cable tie-bar and toward the rear connector panel.
7. Route all cables through the hole at the center rear of the cash drawer. Then route the cables through the rear of the system, laying them flat on top of the cash-drawer integration tray.

8. If you are installing a distributed-character display or an all points addressable (APA) display, see “Mounting a distributed customer display and APA display to a cash drawer” on page 61.
9. Connect the peripheral cables to the appropriate ports on the rear connector panel. See “Connectors, power, and brightness controls” on page 5.

   Note: If you are installing a distributed-character display, route the cable through the unattached rear modesty panel **C** in Figure 35.
10. Use tie-wraps to secure cables to the cable-tie bar. Be sure to run cables to the right of the power cable when viewed from the rear.
11. Replace the rear cover.
12. See Figure 35. Install the filler panels after you route all the cables to your system. Note that filler panel **A** locks filler panels **B** onto the tray. Install the filler panels after you have routed all of the cables.
    a. Install the outer ends of the filler panels **B** into the integration tray. Notice that the printer filler panel, shown on the right, is narrower than the system filler panel. Also, the system filler panel has a bottom slot that allows you to route the cables out the back.
    b. Use the narrow filler panel **A** to lock the filler panels together between the system and the printer.

    Note: Depending upon your desired configuration, you could have unused filler panels.
13. Tilt the modesty cover **C** so the front hooks attach to the tray; then push down until the cover snaps into place.

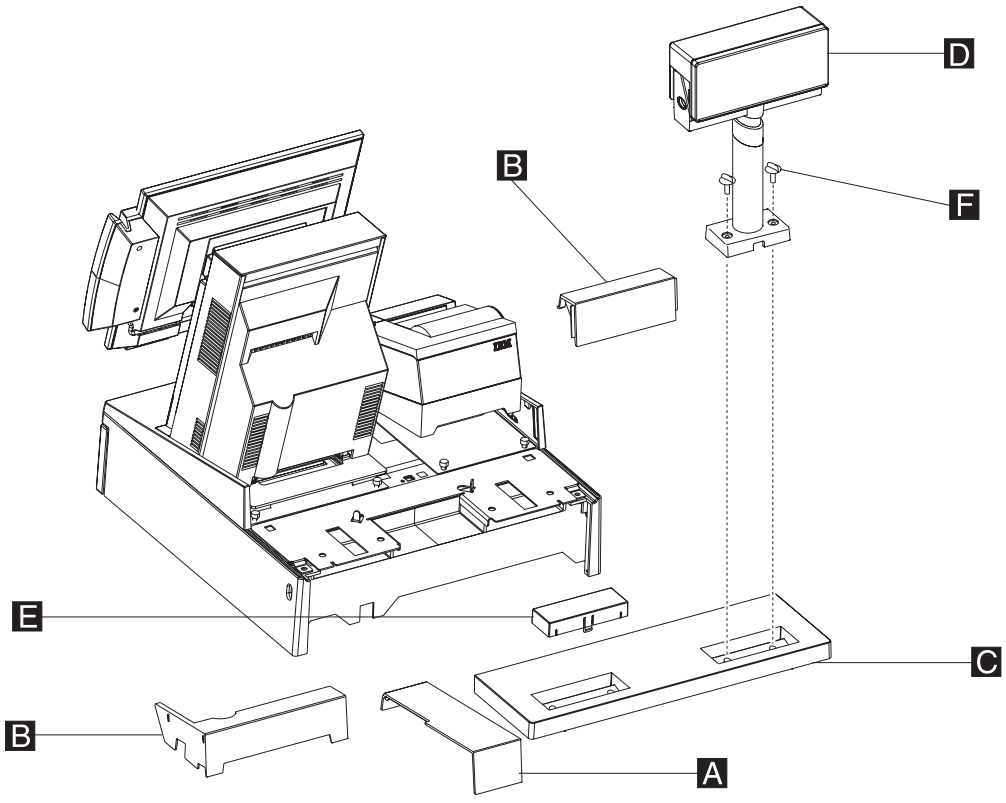


Figure 35. Attaching filler panels and the rear modesty cover

14. Attach the distributed customer display **D** to the cash drawer with two thumbscrews **F** and snap the entire unit into place at the rear of the tray.
15. Close the cash-drawer rear cover.
16. Plug the AC power cords for the printer and the system into an AC outlet.
17. After your installation is complete, press the printer power switch under the printer cover to power on the printer.
18. Switch ON the power to the SurePOS 500. Verify that the system is operating correctly by checking the indicator lights (LEDs) on the front of the system.
19. Install your software. Refer to *IBM SurePOS Model 545 and 565 Operating System Installation Guide*.

Keyboard-integration tray

This section describes how to install a keyboard tray with the SurePOS 500 Models 545 and 565.

Countertop and full-size cash drawer

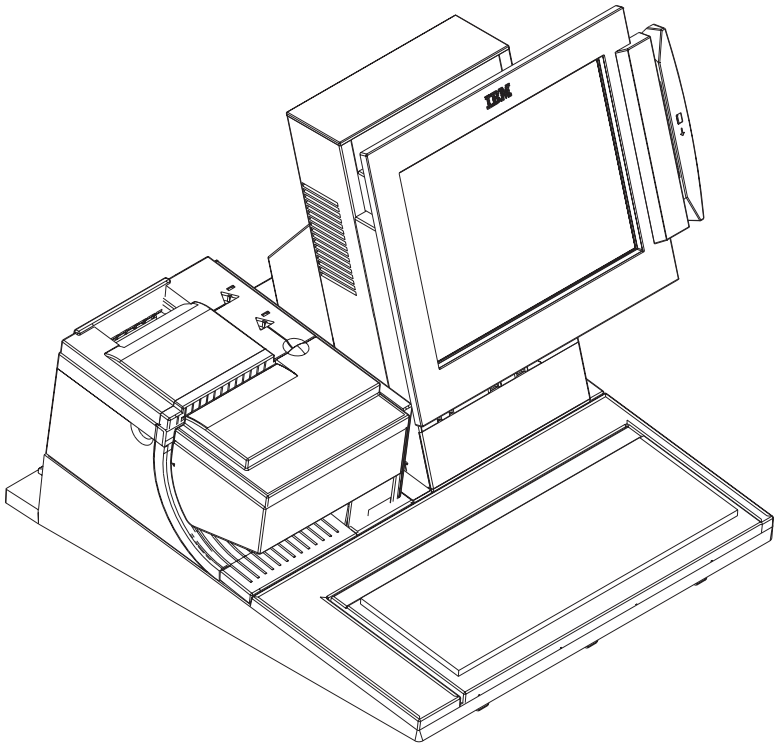


Figure 36. Full-size keyboard-integration tray on a countertop

The full-size keyboard-integration tray can be used as a free-standing unit, secured to a countertop using mounting screws or mounted to a cash drawer. The SurePOS 500 is mounted with the 4610 SureMark printer using the full-size keyboard-integration tray.

Important

Devices such as the printer, integrated character display, and keyboard are mounted the same way when the full-size keyboard-integration tray is used for a countertop or cash drawer mount. Therefore, the instructions for the countertop and cash drawer mount have been combined.

Mounting the integration tray to a countertop

Use the countertop keyboard-integration tray as a pattern for drilling the four mounting holes and for the cable opening, if you plan to route the cables through the countertop.

Note: Four screws (not provided) are required to mount the integration tray to a countertop.

1. Prepare the SurePOS 500 to mount to the keyboard-integration tray:
   a. Remove the rear cover.

Notes:

1) If you are routing cables underneath the counter, route them through the cable-access hole in the counter.
2) If you are routing cables on top of the counter, route them out the back of the system. Lay them flat along the countertop.

2. For a free-standing unit, ensure that the four rubber feet **A** are installed on the bottom of the countertop keyboard integration tray (as shown in Figure 37 on page 54).
3. To secure the **full-size keyboard-integration tray to a countertop**, perform the following steps:
   a. Remove the fence **E** from the countertop keyboard-integration tray by removing the screws as shown in Figure 37 on page 54.
   b. Drill the four mounting holes and cut a hole in the countertop for cables if needed. Use the openings in the integration tray as a pattern for drilling mounting holes and a cable opening in the counter.
   c. Remove the rubber feet **A** located on the bottom of the integration tray. See Figure 37 on page 54 for location of feet.
   d. Attach the keyboard-integration tray to the countertop using four mounting screws, one at each corner of tray. The four mounting screws are not provided with the kit. Use 60-mm (0.25-in.) pan-head screws.
   e. Reattach the fence **E** to the tray with the six small screws.

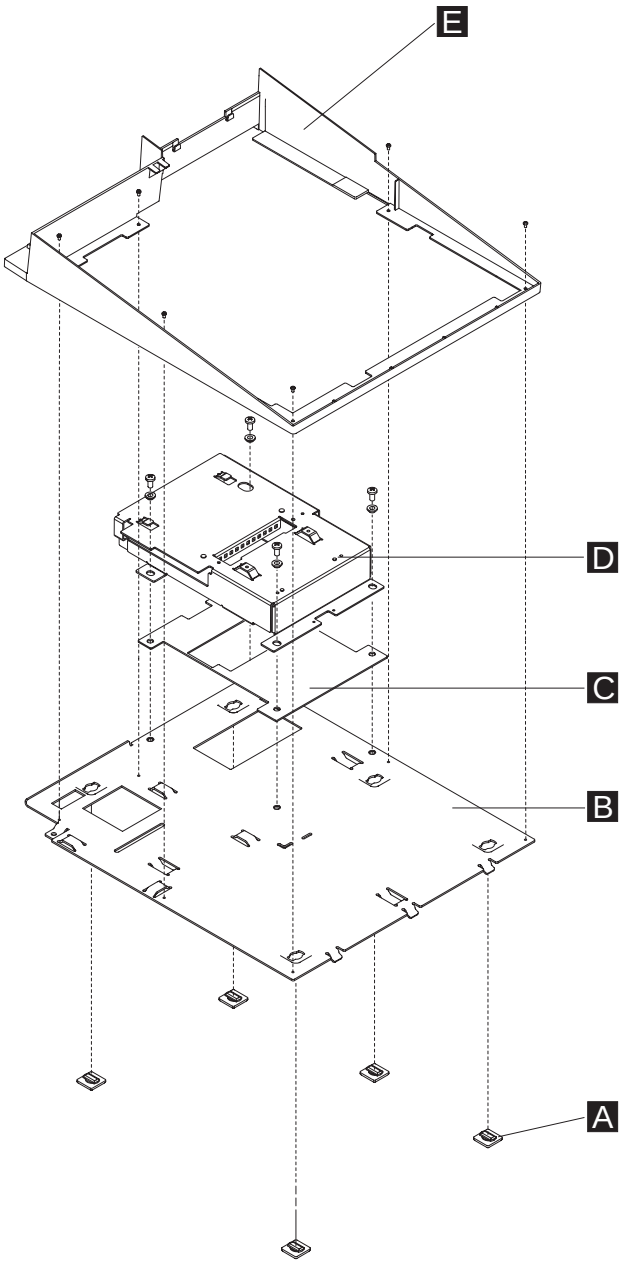


Figure 37. Countertop keyboard-integration tray assembly

Table 12. Countertop integration tray legend

A	Four rubber feet	D	Mounting plate
B	Keyboard-integration tray	E	Fence
C	Insulator plate		

4. Prepare the SurePOS 500 to mount to the keyboard-integration tray:
   a. Remove the rear cover.

      Notes:

      1) If you are routing cables underneath the counter, route them through the cable-access hole in the counter.
      2) If you are routing cables on top of the counter, route them out the back of the system. Lay them flat along the countertop.

5. Remove the rear cover on the cash drawer. While pressing in on the two buttons located on the sides of the cash drawer, pull back on the rear cover back to remove it. Discard this rear cover. A new rear cover is used for installation of the keyboard integration kit.
6. Install the keyboard-integration tray on a cash drawer:

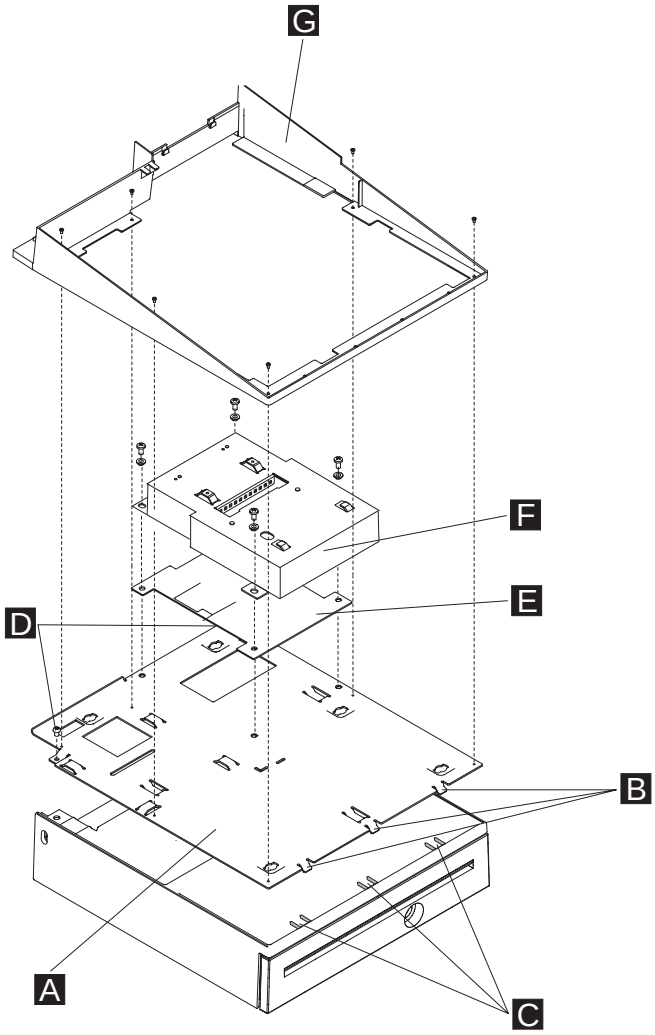


Figure 38. Installing the keyboard-integration tray on a cash drawer

   a. Tilt the integration tray down so the three tabs **B** align with the three tab holes **C** on the cash drawer as shown in Figure 38. Set the integration tray down on the cash drawer while aligning the screw holes **D** with holes on the cash drawer.
   b. Secure the integration tray to the cash drawer with two screws at location **D**.
7. Attach the mounting plate **F** to the integration tray with four plastic washers and screws as shown in Figure 38.
8. Attach the fence **G** to the integration tray with six small screws.
9. Remove the base plate. See “Removing the base plate” on page 23.
10. Attach the SurePOS 500 to the mounting plate as shown in Figure 39 on page 56. Slide the unit from the back toward the front until the frame fits into the tabs **B**, and the screws **A** and mounting holes **C** are lined up. Tighten the

two base-bracket screws.

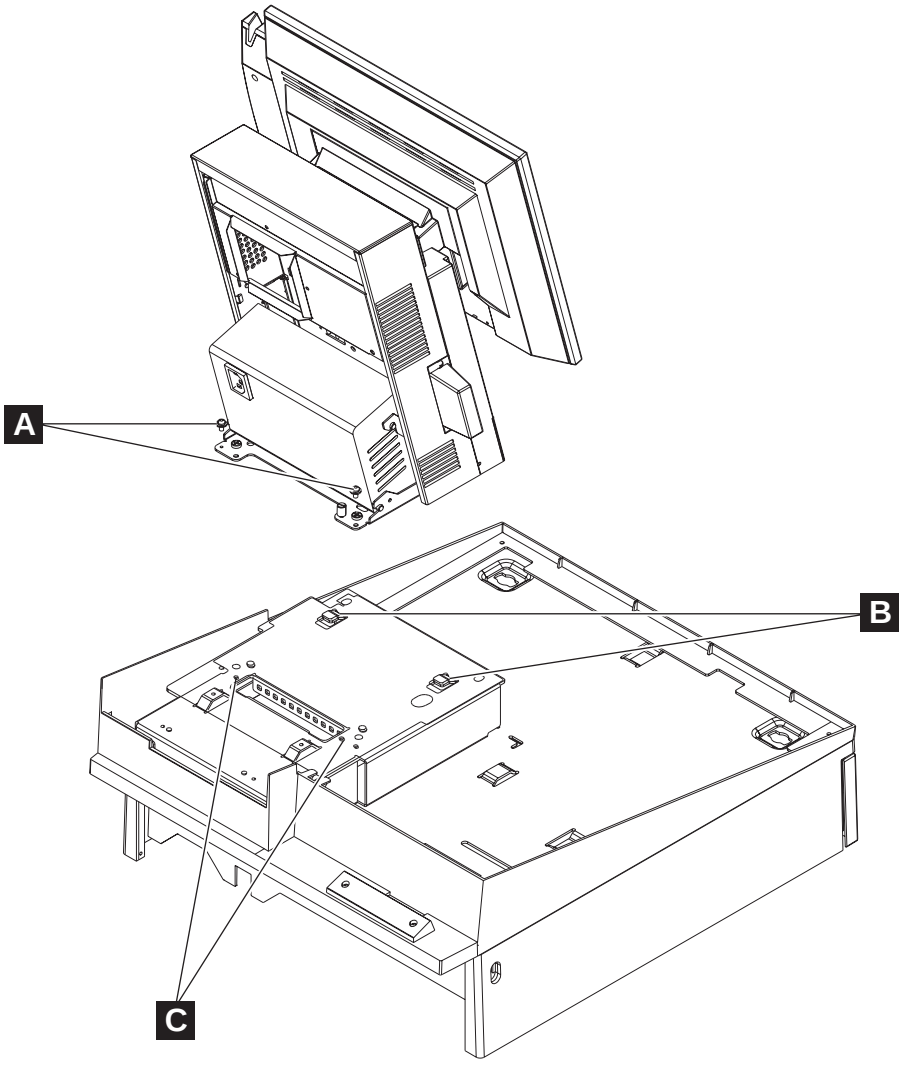


Figure 39. Installing the SurePOS 500 onto the integration tray

11. Install the IBM 4610 SureMark printer on the integration tray, by performing the following steps:

    Note: See the *4610 SureMark Point-of-Sale Printers User's Guide* for detailed information about switch settings and cabling for the printer.

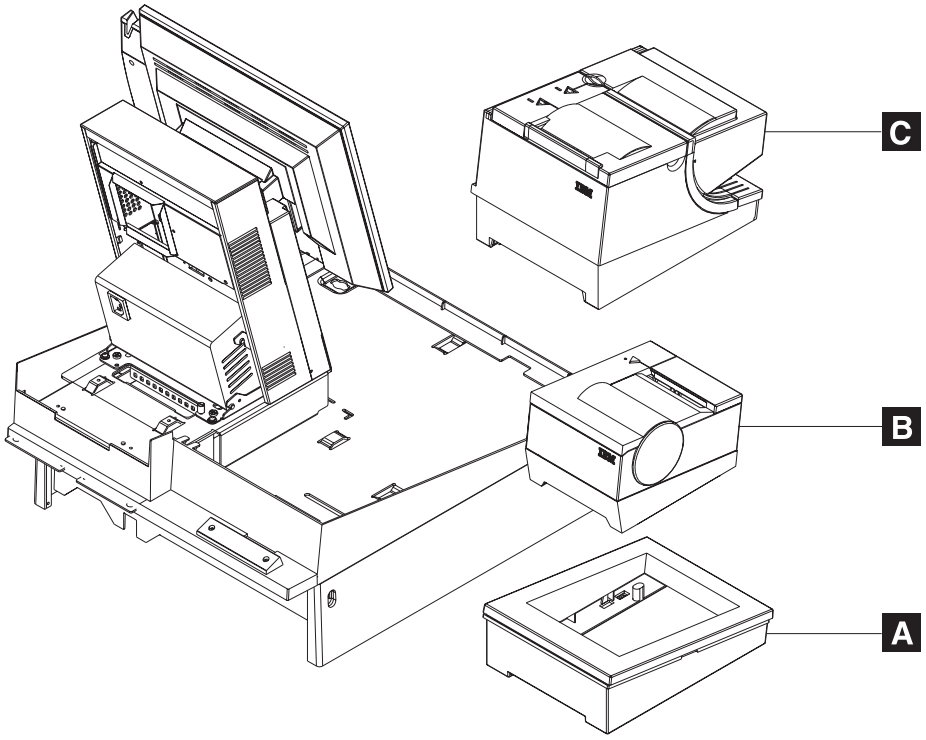


Figure 40. Installing the 4610 printer onto the integration tray

Table 13. 4610 SureMark printer on a full-size keyboard-integration tray legend

A	Printer stand for the 4610 Models TF6 and TF7 printers
B	4610 Models TF6 and TF7 printers (small footprint)
C	4610 Models TG3, TG4 and TG5 printers

a. Install the printer cables and route the cables as shown in Figure 48 on page 65.
   - For the small-footprint 4610 SureMark Models TG3, TG4 and TG5 printers B, first insert the plastic printer base A onto the integration tray and then place the printer into the printer base.
   - For the large-footprint 4610 SureMark Model TG3 and TG4 printers, place the printer directly onto the integration tray.

12. To install the keyboard, perform the following steps. See Figure 41 for callout locations:

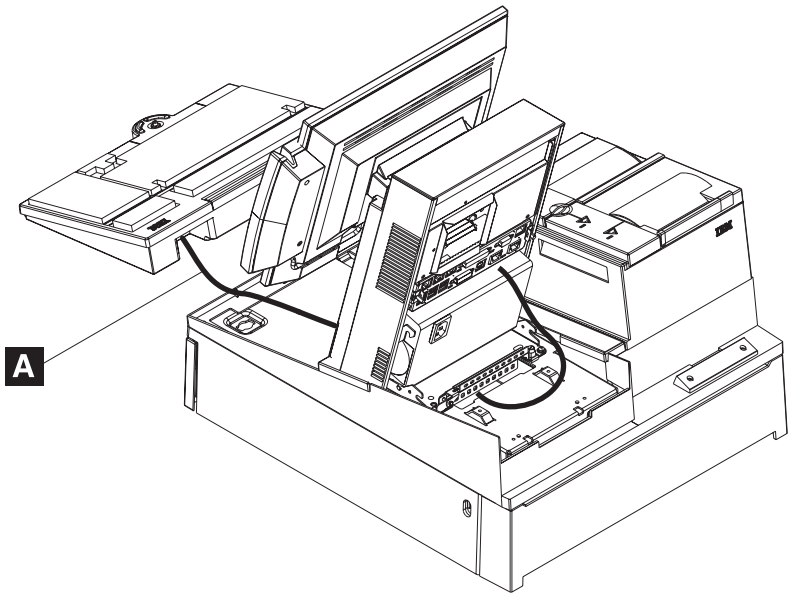


Figure 41. Installing the keyboard onto the integration tray

    a. Attach the keyboard cable **A** to the IBM PS/2® port on the rear connector panel.
    b. Place the keyboard on the integration tray while pushing the excess keyboard cable back under the filler panel.
13. Prepare the distributed customer display to be installed on an integration tray.
    a. Route the distributed customer display cable through the mounting post (and post extension, if used) and plug the cable into the display.

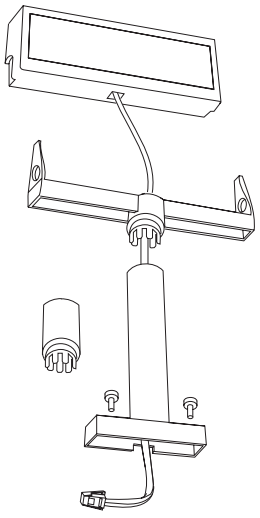


Figure 42. Attaching the distributed customer display cable

    b. Attach the character display's top to its post by pressing the display down on the post until it snaps into place.

14. To install a distributed customer display or an APA display, perform the following steps:

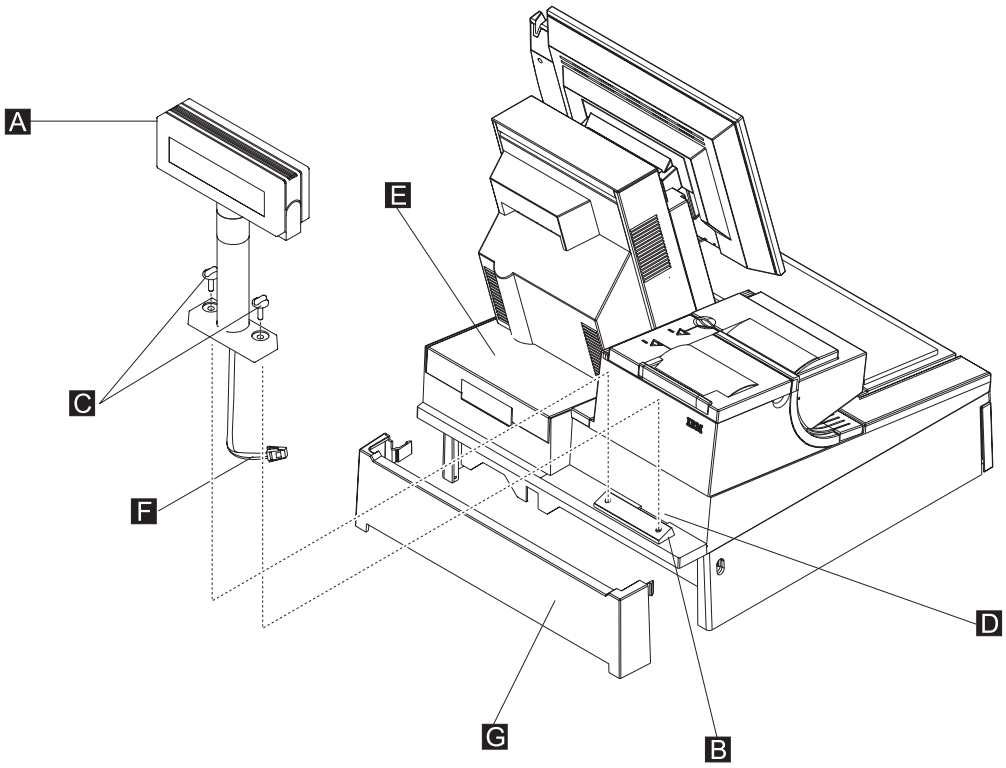


Figure 43. Installing the distributed customer display onto the integration tray

    a. Route the display cable **F** through hole **D**, as shown in Figure 43. You might need to place the display on its side to connect the display cable to the system unit rear connector panel.
    b. Route the display cable to the rear connector panel, passing it under the cable-tie bar, and plug it into the 15-pin serial connector.
    c. Attach the distributed customer display **A** to the cash drawer at location **B** with two thumbscrews **C**.
15. Plug the AC power cord to the power supply.
16. Connect the peripheral cables to the appropriate ports on the SurePOS 500 rear connector panel. Make the connections on the bottom row of the panel first and work upward. See “Connectors, power, and brightness controls” on page 5.

    Notes:

    a. If you are routing the cables under the counter, route all cables (including the AC power cord) through the cable-access hole.
    b. If you are routing the cables on top of the counter, route all cables out the rear of the system. Lay the cables flat along the countertop.
17. Use tie-wraps to secure cables to the integration tray.
18. Replace the rear cover and install the rear filler panel.
19. Attach the cash-drawer rear cover by aligning the tabs with the buttons, and push in on the cover.
20. Plug the system and printer AC power cords into an AC outlet.

21. After your installation is complete, press the printer power switch under the printer cover to power on the printer.
22. Switch ON the power and verify that the system is operating correctly by checking the indicator lights (LEDs) on the front of the touch screen.
23. Install your software. Refer to *IBM SurePOS Model 545 and 565 Operating System Installation Guide*.

Installing additional peripheral devices

Attention: Before you use the following procedures to install additional peripheral devices, see “Safety and environmental information” on page xi.

Mounting a distributed customer display and APA display to a cash drawer

The SurePOS 500 Models 545 and 565 provides a powered, 15-pin, serial port for attaching a distributed customer display, APA character-graphic display, or other device requiring a powered serial connection. The SurePOS 500 Models 545 and 565 distributed customer display is mounted behind the cash-drawer modesty panel. It can also be mounted to a countertop with customer-provided hardware. Use these instructions to mount a character display to a cash drawer.

1. Prepare the system for installation of the distributed customer display.
   a. Switch OFF the power at the system unit.
   b. Remove the SurePOS 500 Models 545 and 565 rear cover (see “Removing the rear cover” on page 20) to access the rear connector panel.
2. Prepare the distributed customer display to be installed on an integration tray.
   a. Route the distributed customer display cable through the mounting post (and post extension, if used) and plug the cable into the display, as shown in Figure 44.

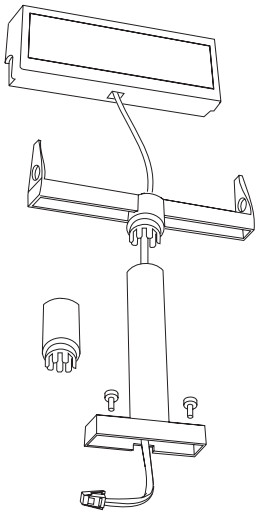


Figure 44. Attaching the distributed customer display cable

   b. Attach the character display top to its post by pressing the display down on the post until it snaps into place.
3. Go to the appropriate procedure for a non-keyboard integration tray or keyboard integration tray to complete the installation of the distributed customer display:
   - For installation of a distributed customer display on a non-keyboard integration tray, go to Step 4 on page 62.
   - For installation of a distributed customer display on a keyboard integration tray, go to Step 5 on page 63.

4. To install a distributed customer display **D** on a non-keyboard integration tray, perform the following steps:
   a. Remove the filler panels **A** and **B** (two) and the rear modesty panel **C** from the integration tray, as shown in Figure 45.

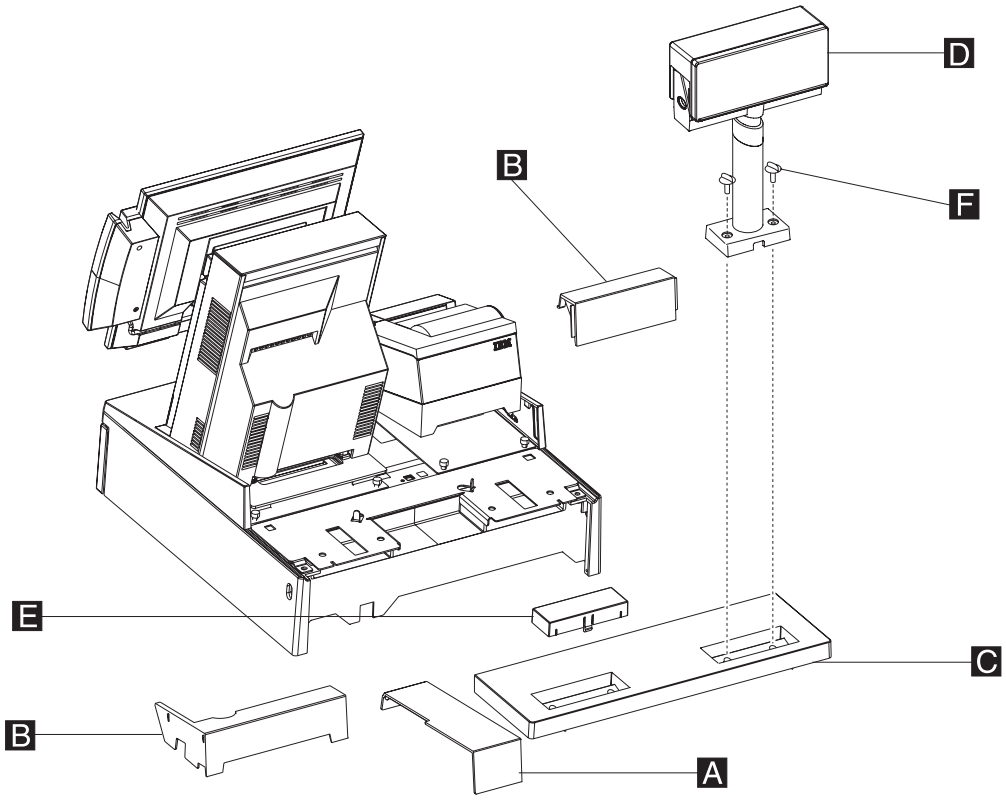


Figure 45. Attaching the distributed customer display to the system unit

   b. Remove one of the two plugs **E** in the rear modesty panel. Figure 45 shows one plug removed.
   c. Route the character display cable through the hole in the modesty panel. You may need to lay the display on its side to connect the display cable to the rear connector panel.
   d. Route the character display cable to the rear connector panel. Plug it into the 15-pin serial connector.
   e. Reinstall the rear cover of the SurePOS 500 Model 514 (see “Removing the rear cover” on page 20).
   f. Reinstall the filler panels **B**, and then install **A**, as shown in Figure 45.
   g. Attach the post, through the modesty cover **C** to the cash drawer with 2 thumbscrews **F**. Snap the entire unit into place at the rear of the tray.

5. To install a distributed customer display on a keyboard integration tray, perform the following steps:
   a. Route the character display cable through the hole behind mounting post as shown in Figure 46. You might need to lay the display on its side to connect the display cable to the system unit rear connector panel.

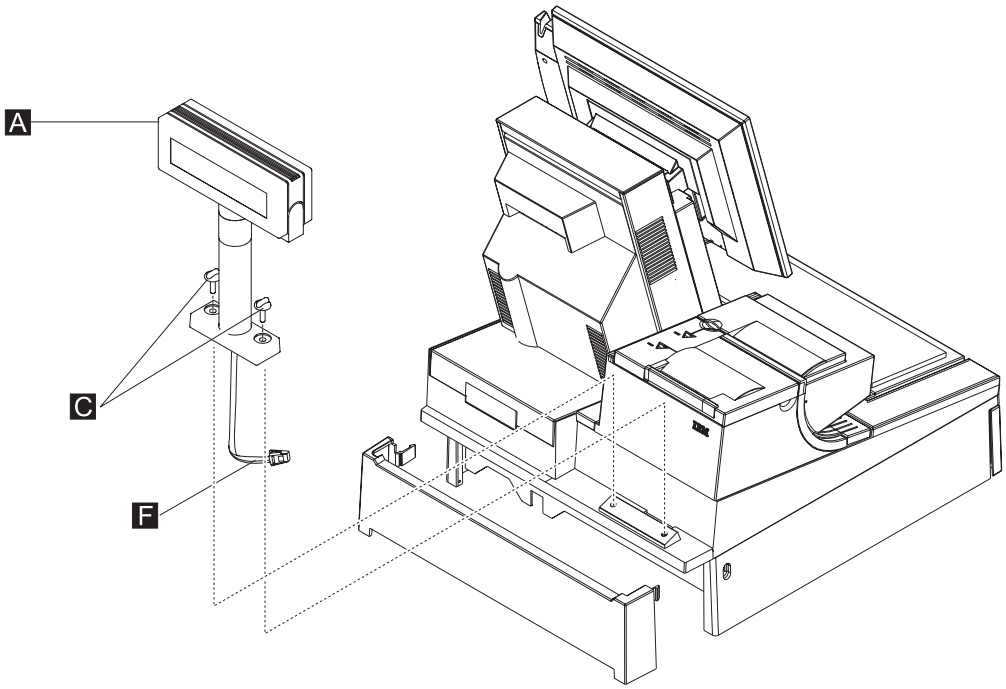


Figure 46. Installing the distributed customer display onto the keyboard integration tray

   b. Route the distributed customer display cable **F** to the rear connector panel, passing it under the cable-tie bar. Plug it into the 15-pin serial connector.
   c. Attach the distributed customer display **A** to the cash drawer mounting post with two thumbscrews **C**. Snap the entire unit into place at the rear of the tray, as shown in Figure 46.

Installing IBM 4610 SureMark Models TF6 or TF7 printers

Note: Service for the IBM SurePOS Model 4951, Model 514 includes the IBM 4610 SureMark printer.

The IBM 4610 SureMark Model TF6 and TF7 (4610 TF6 or TF7) are the smaller 4610 models that contain only a thermal customer receipt station. These models do not support document printing. For detailed information about these printers, see the *IBM 4610 SureMark Point-of-Sale Printers User's Guide*.

The 4610 TF6 or TF7 can be installed as a freestanding unit, attached to a countertop integration tray, or attached to a cash drawer integration tray. Attaching the 4610 TF6 or TF7 to a non-keyboard integration tray is different than attaching it to a keyboard integration tray:

- For the non-keyboard integration tray, the 4610 TF6 or TF7 is attached to a mounting plate and then attached to the non-keyboard integration tray.

- For the keyboard integration tray, the 4610 TF6 or TF7 is set into a plastic printer base and then set on the keyboard integration tray.

Figure 47 shows the 4610 TF6 or TF7 printer connectors.

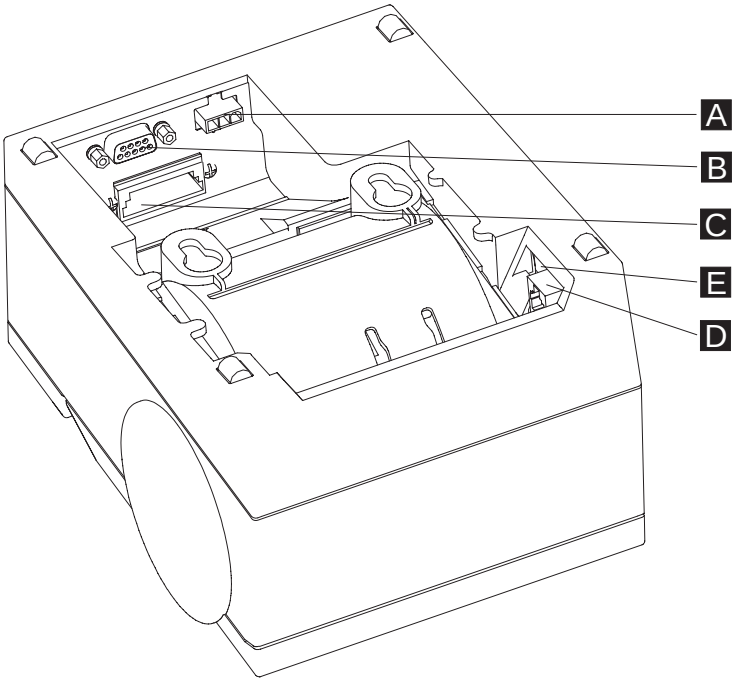


Figure 47. 4610 TF6 or TF7 printer connector locations

A	Power supply port (RS-232 only)	**D**	Cash drawer connector
B	RS-232 port or Powered USB port	**E**	RS-232 mode switch
C	(Not used on the SurePOS 500 Models 545 and 565)		

To install the 4610 TF6 or TF7 printer, perform the following steps:

1. Switch OFF the power at the system unit.
2. Remove the SurePOS 500 rear cover (see “Removing the rear cover” on page 20).
3. Check the printer RS-232 mode-switch setting for the printer. It is near the rear cable connections. See **E** in Figure 47 for switch location. For switch settings, see the *IBM 4610 SureMark Point-of-Sale Printers User’s Guide*.
4. Connect and route the RS-232 communication cable or Powered USB cable **A** and the power supply cable **B** as shown in Figure 48 on page 65.

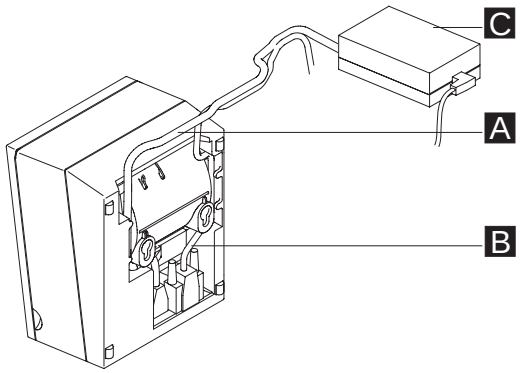


Figure 48. Attaching and routing the cables to the printer.

5. Connect any other signal cables for I/O devices to the correct ports.
6. If you are installing a freestanding printer, route the cables to the rear connector panel on the SurePOS 500 Models 545 and 565 system unit. Pass the cables under the cable-tie bar, and plug it into one of the standard serial ports.
7. Go to the appropriate procedure for non-keyboard integration tray or keyboard integration tray mounting of the 4610 TF6 or TF7 printer:
   - If you are installing a 4610 TF6 or TF7 printer on a non-keyboard integration tray, continue with Step 8.
   - If installing a 4610 TF6 or TF7 printer on a keyboard integration tray, continue with Step 11 on page 56.
8. To install a 4610 TF6 or TF7 printer on a non-keyboard integration tray, perform the following steps:
   a. Attach the printer mounting plate to the bottom of the printer. The mounting plate slides into the two bottom slots of the printer.

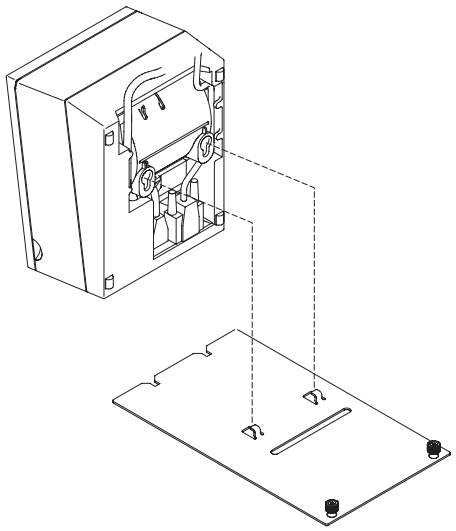


Figure 49. Attaching the 4610 TF6 or TF7 printer mounting plate for a non-keyboard integration tray

   b. The procedure for mounting the printer to a non-keyboard integration tray is the same for countertop or cash drawer. With the mounting plate attached to the printer, slide the front of the printer mounting plate into the slots located

toward the front of the integration tray. Secure the printer by tightening the two thumbscrews on the mounting plate to the tray.

c. Route the RS-232 cable **A** to the rear connector panel of the system unit as shown in Figure 50. Plug it into one of the three standard serial ports on the system unit.

d. Route the printer power cord **B** toward the system and out through the hole in the integration tray, as shown in Figure 50.

Note: When routing the printer and power cables, make sure that the cables are routed inside the mounting plate screws to enable correct installation of the filler panels.

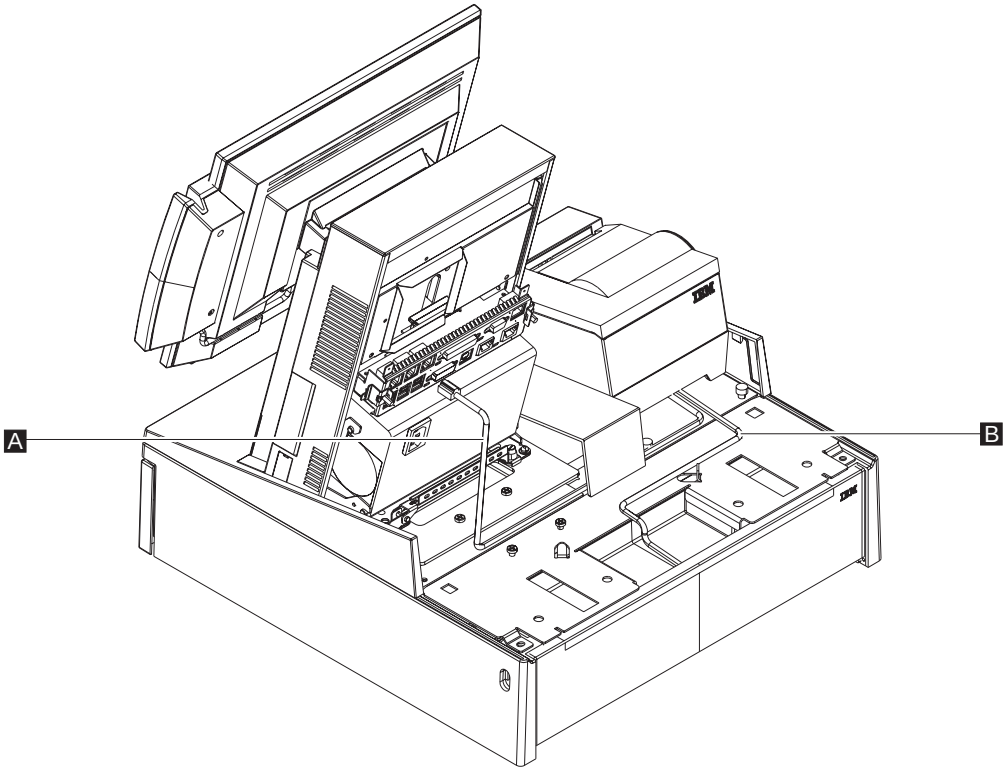


Figure 50. 4610 TF6 or TF7 cable routing

Chapter 5. Operating and maintaining the system

This chapter explains how to operate and maintain the SurePOS 500 Models 545 and 565.

Using the operator display

Before you begin using the display, follow these tips to ensure that you are comfortable:

- Keep your head in a comfortable viewing position.
- Maintain a comfortable viewing distance.
- Position the display to avoid glare or reflection from overhead lighting or outside sources of light.

  Note: When tilting the display, do not attempt to force it in either direction after reaching the end of its movement range.
- Keep the screen clean from dust and dirt by regularly performing the steps at “Cleaning the screen”
- Set levels of brightness that allows you to see clearly.

Using the brightness control

Pressing the pair of buttons (− or +) at the lower right corner of the display adjusts the display brightness down or up.

Cleaning the screen

Keeping the screen free from dirt and dust enables the screen to operate effectively. Follow these guidelines:

- Use a soft, damp cloth with water, isopropyl alcohol or any non-abrasive and non ammonia-based cleaner and non chlorine-based cleaner. Do not apply cleaning solution directly to the screen. Always spray the cleaner on a clean cloth and then wipe the screen.
- Wipe gently across the surface.
- Allow the surface to dry before using.

Chapter 6. Testing the system

This chapter contains testing procedures for the SurePOS 500 Models 545 and 565 that you can use if you experience a problem after installing the system.

A problem with the system can be caused by a software error or a hardware failure. The following topics contain problem-analysis instructions to help you determine the cause of a problem and resolve it.

Preliminary checklist

The SurePOS 500 Models 545 and 565 performs a Power On Self Test (POST) when you power on. The system indicates a successful POST when the status/power LED stops blinking. If an error message is displayed, perform the following steps to diagnose the problem.

1. Ensure that all ac power is connected and observe all power lights to make sure they are lit.
2. Ensure that all cables and I/O devices are connected correctly and securely.
3. Make sure that the brightness setting on the operator display is adjusted correctly, using the control at the bottom right side of the display.
4. Record any error messages or symptoms for future reference and for calling for service.

Notes:

1. For internal options and peripheral devices, use the diagnostic service program to help resolve problems.
2. Some devices that attach to the system have test instructions. Refer to those instructions when testing those devices.
3. When using application software, you may receive error messages that pertain to the software. Refer to the software manual for a description of those messages.

If you do not observe a specific error indication, refer to the IBM SurePOS 500 Series Hardware Service Guide for Models 545 and 565.

Using the service memory key

Service memory keys are not shipped with the system. You create the service memory key by downloading the diagnostic service program code from the IBM Retail Store Solutions Web site. See “Supported memory keys” on page 75.

The diagnostic service program provides menu-driven tests and utilities that enable trained service technicians to configure and test the system and I/O devices. See “Using the IBM diagnostics for POS systems and peripherals package” on page 74 for instructions on downloading and using this package.

Diagnostic wrap plugs

The following list provides the diagnostic wrap plug pinouts.

Serial 9-Pin D-Shell

- Pins 1 - 7 - 8
- Pins 2 - 3
- Pins 4 - 6 - 9

Serial 15-Pin D-Shell

- Pins 7 - 13 - 14
- Pins 8 - 9
- Pins 10 - 12 - 15

Ethernet

- Pins 3 - 5
- Pins 4 - 6

Note: A parallel port is not available on the SurePOS 500 Models 545 and 565.

Using the CMOS Setup Utility

Follow these steps to start the CMOS Setup Utility:

1. Switch the power ON.
2. Press **Del** during POST when prompted, or **tap the touch screen two times**. Use the keys listed in the legend bar at the bottom of the screen to make your selections or exit from the current menu. The help window on the right side of each menu displays the online help information for the currently selected item.

Figure 51 is an example of the initial panel that is displayed in the CMOS Setup Utility.

Using the Main window

Use the Main window (Figure 51) to access the various features of the CMOS utility. The navigation tool bar is located at the bottom of the screen.

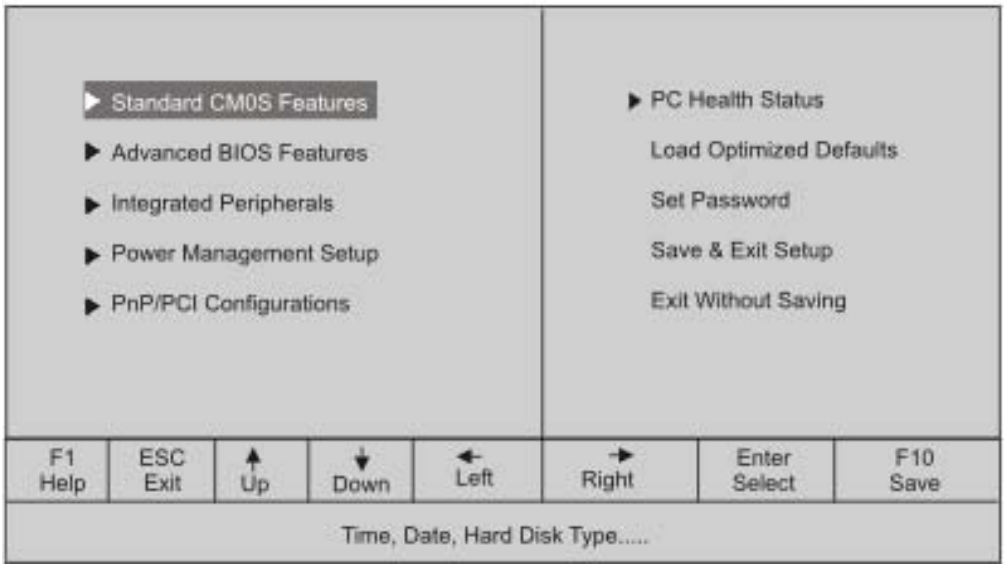


Figure 51. CMOS Setup Utility main window

Standard CMOS features

This menu provides basic functions, like setting the time and date. It also provides basic information, such as BIOS version, Ethernet MAC address, memory size, and machine serial number.

To change the date, month, and time using the CMOS Utility,

1. With the month entry highlighted (in red), touch the red numeric keyboard to indicate the current month. For example, enter 8 to change the month to Aug.
2. Touch enter. The correct month appears as text.
3. Using the displayed keyboard, enter the number of the month. For example, enter 8 for August, or 1 for January, and select Enter.

Advanced BIOS Features

The Advanced BIOS window allows you to modify the POST and boot device settings, and set the keyboard features.

Integrated peripherals
Using this menu you can configure I/O devices, such as serial ports, Ethernet, parallel port, USB controller, and keyboard.

Power Management
Use the Power Management window to configure Wake on Ring, the power savings, hard disk time-out, video time-out, and other power settings.

Wake on Ring: Use the Power Management Setup menu to enable the **Wake on Ring** feature. Wake on Ring allows a modem attached to Serial Port D to wake the system using **Ring Indicate**. Additionally, the tailgate card contains jumpers for ports A-C to optionally associate DSR (pin 1) to **Ring Indicate**.

PnP/PCI Configurations
This option allows advanced functions for PCI configuration data.

PC Health Status
This is an information window that provides the CPU and system temperatures, voltages on the system board, and fan speed.

Load Defaults
This selection resets all options to their default configuration.

Set Password
Use the password options menu to set, change, or clear the system password.

Restoring the default CMOS settings
To restore CMOS default settings, select Load Optimized Settings from the main menu.

Clearing the CMOS settings
The SurePOS 500 uses battery-backed CMOS memory to store system settings. If the CMOS memory becomes corrupted and the system does not boot, you can restore the factory default values by following these steps:

1. Power off the system and disconnect the AC power.
2. Locate the CMOS reset jumper (J25) on the system board. See **A** in Figure 52 on page 73.

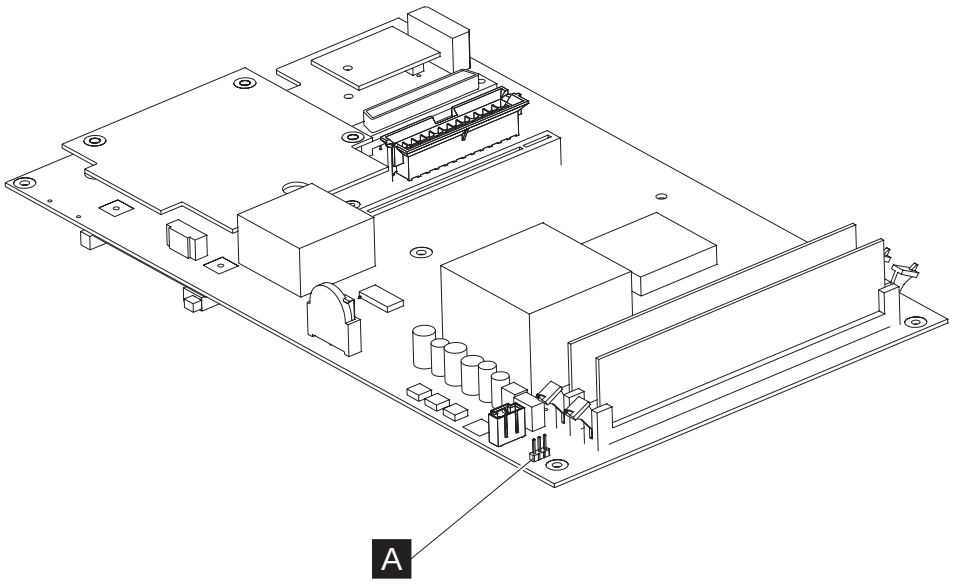


Figure 52. CMOS reset jumper J25

3. Remove the jumper, which is normally located on pins 1 and 2. (Pin 1 is located near the edge of the board, while pin 3 is closest to the memory sockets.)
4. Place the jumper on pins 2 and 3 and wait for 5 seconds. This resets the CMOS.
5. Return the jumper to pins 1 and 2.
6. Power ON the system.
7. When you restart the system after resetting the CMOS, the following error message is displayed:

   ```
   CMOS checksum error - defaults loaded
   ```

   To correct these errors, run the Setup Utility and select **Load Optimized Defaults**. This restores the CMOS defaults. After the defaults are restored, check the date and time, and set any other customer-specific settings that were modified before the CMOS was reset.

Real-time clock and CMOS

The real-time clock is a low-power clock that provides a time-of-day clock and a calendar. The clock settings are maintained by the battery when the power cord is removed. Use the CMOS Setup Utility to set the clock and calendar. See “Standard CMOS features” on page 71.

Configuring the COM (communication) ports

Each COM port of the 4846 product uses a unique I/O address and IRQ. Some previous SurePOS 500 system units utilized PCI-based COM ports with a shared IRQ. The system BIOS configures the COM ports for use by the operating system; therefore, a separate driver is not required. (Serial port drivers from previous SurePOS 500 systems are not supported or required.)

Use the CMOS Setup Utility to configure or modify the COM ports, the default I/O address and the IRQ. If you make modifications, ensure that each port uses a unique I/O and IRQ value. Using default values are highly recommended. The *IBM SurePOS 500 Series Operating System Installation Guide for Models 545 and 565* provides a list of port resources.

Using the IBM diagnostics for POS systems and peripherals package

Diagnostics for the SurePOS 500 Models 545 and 565 are available on the IBM Diagnostics for POS Systems and Peripherals package. This package installs to a memory key (see “Supported memory keys” on page 75).

Note: The Diagnostics also supports IBM POS I/O on prior systems, if the BIOS supports booting from a memory key.

Locate the instructions for using this package in the README file. This package provides menu-driven tests and utilities that enable trained service technicians to configure and test the I/O devices. Locate and download the service program code from the IBM Retail Store Solutions Web site using the following steps:

1. Obtain a memory key. See “Supported memory keys” on page 75.
2. Access the IBM Retail Store Solutions Web site at: www.ibm.com/solutions/retail/store/support.
3. Select **Support** on the left side of the panel, then select **IBM SurePOS 500/600 Series**.
4. Next, select **SurePOS 500-xx5 Downloads**.
5. Download the update 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.
6. If you have *not* previously changed the CMOS Utility settings, you can boot into the diagnostics using the USB memory key: Insert the USB memory key and power on the system. If you have previously changed the default settings, go to Step 7.
7. If you have changed the default settings of the CMOS Setup Utility, follow these steps:
   a. Ensure that the Hard Disk is listed as the First Book Device under **Advanced BIOS Features**, **Hard Disk Boot Priority**.
   b. Power off the machine.
   c. Plug the memory key into a USB port.
   d. Power on the machine. The system BIOS recognizes the memory key and adds it to the lists displayed by the CMOS Setup Utility.
   e. Open the CMOS Setup Utility settings. Ensure that your settings are as follows:
      - Under **Advanced BIOS Features**, **Hard Disk Boot Priority**, ensure that memory key is listed first.
      - Under **First Boot Device**, ensure that **Hard Disk** is listed first.
   f. Save these settings and exit. The system will boot automatically using the memory key and the diagnostics program begins.

You have the option of using an attached keyboard, if available. The diagnostics program will ask you to accept the user license agreement. Click the **I Agree** button. You will be presented with a screen containing a selection menu for System Components, Point Of Sale Devices, and Utilities (for VPD, and others). Sub-menus are dynamically-tailored based upon your system—only tests available for your machine type are displayed.

Supported memory keys

The following memory keys are supported by the SurePOS 500 Models 545 and 565:

IBM USB 2.0 (1 GB)

- FRU: 41D9746
- Part number: 41D9746

Go to www.ibm.com for details on this USB key.

PNY USB 2.0 (1 GB)

- Part number: P-FD012GU20-RF

Go to http://www2.pny.com/homepage.aspx for details on this USB key.

Updating the flash BIOS

Download the latest level of flash BIOS for the SurePOS 500 Models 545 and 565 by following these steps.

1. Follow the steps described in “Using the IBM diagnostics for POS systems and peripherals package” on page 74
2. Switch the system ON again. The system boots from the memory key, the flash BIOS update occurs.
3. Remove the memory key. The new BIOS update is on the system.

Note: The flash utility saves and restores your CMOS setting.

Power interruption during flash BIOS update procedure

If power is interrupted during the flash BIOS update procedure, the BIOS could become corrupted. Should this event occur, the system boots automatically from a backup copy of BIOS. To repair the corrupt version of BIOS and return to using the normal BIOS, repeat the steps to update the flash BIOS.

Repairing the flash BIOS

Two separate copies of POST/BIOS are maintained in separate flash modules. Should the primary copy become corrupt, the system automatically runs from the backup copy when rebooted. A POST message indicates when the backup copy is in use. When this happens, it is important to perform a Flash Update, in an attempt to repair the primary copy and preserve the backup functionality. If the primary is permanently damaged, the system runs normally, but without backup capability for the BIOS, and the POST message appears at each boot up.

Diagnosing problems and troubleshooting

A software error or a hardware failure can cause a problem with the system. The following topics contain problem analysis instructions to help you determine the cause of a problem and resolve it.

Table 14 describes the servicing task and the section that contains information supporting the task.

Table 14. SurePOS 500 task information

Task	Go to
Diagnosing a problem.	"Preliminary checklist."
Update the flash BIOS.	"Updating the flash BIOS" on page 75.
Run the CMOS Setup Utility.	"Using the CMOS Setup Utility" on page 71.
Using the service program.	"Using the IBM diagnostics for POS systems and peripherals package" on page 74
Obtain the part number for the FRU.	See the *IBM SurePOS 500 Series Hardware Service Guide for Models 545 and 565*

Researching the knowledgebase

You can determine if a product problem has been resolved. Just review the symptoms and fixes in the knowledge base at the IBM Retail Stores Solutions Web site.

1. Go to www.ibm.com/solutions/retail/store/.
2. Select **Support**.
3. Select IBM SurePOS 500/600 Series
4. Select **Knowledgebase Tips and FAQs**.

Preliminary checklist

When you power on the SurePOS 500, the system performs a power-on self-test (POST). When the power LED stops blinking, POST is complete. If multiple beeps occur, perform the following steps to diagnose the problem.

1. Ensure that all AC power is connected and observe the power light to make sure that it is lit.
2. Ensure that all cables and I/O devices are connected correctly and securely.
3. Make sure that you correctly adjust the brightness setting, using the controls at the bottom right side of the display.
4. Record any error messages or symptoms for troubleshooting.

If you do not observe a specific error indication, continue problem resolution at "Troubleshooting symptoms and actions" on page 77.

Notes:

1. For internal options and peripheral devices, you can use the diagnostic service program to help resolve problems.
2. For devices with separate test instructions, refer to those instructions when testing.
3. When using application software, you may receive error messages that pertain to the software. Refer to the software manual for a description of those messages.

Troubleshooting symptoms and actions

If the SurePOS 500 system fails with no error message or beep code, see Table 15 to find problem symptoms and take the related action.

Note: Corrupted CMOS may cause unpredictable problems. Before exchanging the system board to resolve a problem, go to “Clearing the CMOS settings” on page 72 and reset CMOS. Oftentimes, a corrupted CMOS is the source of the trouble.

Table 15. Symptoms and actions

If the problem is...	Here's what to do.
No power light on the tower unit.	1. Ensure that the system unit is plugged into a working electrical outlet and replug the power cable at the power supply. 2. Verify that the tablet display cable is plugged into the tablet. 3. Verify that the button/LED card in the tablet is plugged in properly. 4. Verify the power supply is properly installed. 5. Replace the power supply. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*. 6. Replace the system board. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
Operator display exhibits: Blank screen No cursor displayed Screen is unreadable Other display problems.	1. Adjust the brightness control at the bottom right side of the display. 2. Ensure that the tablet display cable is securely connected. 3. Switch the unit off and the power on. 4. Run the operator display test using the diagnostic service program. 5. Replace the LCD assembly. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*. 6. Replace the system board. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
Cash drawer does not open when cash drawer key is turned to the open position.	1. Replace the keylock insert if the lock does not turn with the key. See the I/O book. 2. Gently pull the drawer open while holding the key turned to the open position to determine if the slide assembly is binding. Look for items that may cause binds, such as pens or paper clips. Replace the slide assembly if necessary. 3. Replace the cam, pawl, and spring kit. 4. Check for a bent actuator rod. Replace the actuator rod if necessary.
Cash drawer does not stay closed.	1. Make sure that the keylock is not bound in the open position. Replace the keylock if necessary. 2. Replace the cam, pawl, and spring kit. 3. Replace the latch and the sensor assembly card. 4. Replace the cash drawer. 5. Replace the system board. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
Cash drawer does not open or close smoothly, or appears to be binding.	1. Look for items that could cause binding. Pens or paper clips trapped between the drawer and cover or the drawer and base could cause binding. 2. Compact drawer only: Remove the drawer and the rollers at the rear of the drawer and at the front of the base. Replace the rollers if necessary. 3. Determine if the slide assembly in the base is binding. Replace the slide assembly if necessary.

Table 15. Symptoms and actions (continued)

Cash drawer not opening	1. Run the CMOS Setup Utility to make sure that IBM cash drawer setting is enabled. 2. Ensure that the cash drawer cable is securely connected. 3. Replace the cash drawer cable. 4. Replace the cash drawer latch assembly. 5. Replace the system board. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
Cash drawer does not open when performing store transactions or running cash drawer tests, but it opens when the cash drawer key is turned to the open position.	1. Replace the latch and the sensor assembly card. 2. Replace the cash drawer cable. 3. Replace the system board. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
The status displayed by the cash drawer tests does not match the physical status of the cash drawer being tested. For example, the test indicates that cash drawer A is closed when cash drawer A is actually open.	1. Replace cable. 2. Replace the latch and the sensor assembly card. 3. Replace the system board. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
Magnetic stripe reader (MSR) not reading.	1. Check the three-track MSR dip switch settings for either RS232 or keyboard interface. 2. Run the CMOS Setup Utility and check the setting in the MSR serial port. 3. Ensure that the MSR cable is securely connected. 4. Run the MSR test using the diagnostic service program. 5. Reset to factory defaults by pressing the Reset button with a paper clip. The MSR must be removed temporarily from the side of the tablet to access the reset button. Leave the MSR cable connected, and the unit powered ON when pressing the Reset button. 6. Replace the MSR. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
Operator display backlight: dark, dim, or partially lit.	1. Adjust the brightness using the button located on the front of the display. 2. Ensure tablet display cable is securely attached under display tablet and at system board. 3. Replace the LCD assembly. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
Touch screen not working.	1. Ensure tablet display cable is securely attached under display tablet and at system board. 2. Run the touch screen test using the diagnostic service program. 3. Reinstall the touch driver. 4. Replace the front touch bezel assembly. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*. 5. Replace the system board. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
PS/2 keyboard does not work or only some keys work.	1. Ensure that the keyboard cable is securely connected. 2. Move your fingers across the keys, making sure that no keys are stuck. 3. Ensure that you are on a window that allows typing. Some windows do not allow you to type on them. 4. Run the keyboard test from the diagnostics program. 5. Replace the keyboard.

Table 15. Symptoms and actions (continued)

Diskette drive does not work.	1. Check the diskette drive cable connections. 2. Run the CMOS Setup Utility to make sure the diskette drive controller is enabled. 3. Ensure that the correct boot device is selected in the CMOS Setup Utility, which is USB–FDD. 4. Verify the hardware by attempting to load a bootable diskette. 5. If the drive will not boot with a bootable diskette, replace the drive and cable. 6. Replace the system board. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
Audio is not working.	1. Check the volume control. 2. Check the speaker cable connections. 3. Run CMOS Setup Utility to make sure the audio is enabled. 4. Replace the speaker. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*. 5. Replace the system board. See the *IBM SurePOS Model 545 and 565 Hardware Service Guide*.
Fan continues running after system has been powered Off.	This is normal operation with the power supplies.

Notes:

1. Some devices that attach to the system have test instructions. Refer to those instructions when testing those devices.
2. Record any error messages or symptoms for future reference.
3. When using application programs, you may receive error messages that pertain to the application software. See the application program manual for a description of those messages.

CMOS recovery

If the CMOS memory becomes corrupted and the system does not boot, restore the factory default values by following the procedure described in “Clearing the CMOS settings” on page 72.

Always reset CMOS (as described at “Restoring the default CMOS settings” on page 72) before replacing a system board to resolve a problem. This practice allows you to determine if a corrupted CMOS is the source of the trouble. A corrupted CMOS can cause unpredictable problems.

Appendix. System specifications and planning information

This appendix provides information on power subsystems, and environmental requirements.

Physical specifications and dimensions

The SurePOS 500 Series physical specifications are described in Table 16.

Table 16. Height, weight and depth of the SurePOS 500 Models 545 and 565

4846	Weight	Height: Tablet at 15 degrees	Height maximum	Depth: Tablet at 15 degrees	Depth: Tablet at 60 degrees	Width
Tower and 12-in. tablet	11.3 kg (25 lbs)	357.9 mm (14.0 in.)	374.1 mm (14.7 in.)	316.8 mm (12.5 in.)	385.8 mm (15.2 in.)	307.9 mm (12.12 in.)
Tower and 15-in. tablet	12.2 kg (27 lbs)	381.8 mm (15.0 in.)	393.6 mm (15.5 in.)	324.4 mm (12.8 in.)	405.8 mm (15.9 in.)	369 mm (14.5 in.)
Tower and 17-in. tablet	14.51 kg (32 lbs)	404.5 mm (15.93 in.)	414.6 mm (16.32 in.)	335.2 mm (13.2 in.)	423.9 mm (16.7 in.)	402.3 mm (15.83 in.)

Table 17. Weights of integrated, distributed displays and MSR

Component	Weight
Integrated 2x20 display	0.2 kg (0.38 lbs)
Distributed 2x20 display	0.5 kg (1.2 lbs)
Distributed APA display	0.7 kg (1.6 lbs)

Table 17. Weights of integrated, distributed displays and MSR (continued)

Component	Weight
MSR (three-track or JUCC)	0.16 kg (0.41 lbs)

Dimensions with trays

Table 18 provides the dimensions shown by measurements A and B in Figure 53, Figure 54 on page 83, and Figure 55 on page 83.

Note: The tablet is shown at 15 degrees.

Table 18. SurePOS 500 Models 545 and 565 dimensions. See Figure 53 and Figure 54 on page 83 to locate Measurement A and B

Product with 12 in. tablet and the following:	Measurement A	Measurement B
Counter top tray	382.4 mm (15.1 in.)	478.6 mm (18.8 in.)
Cash drawer tray	493.5 mm (19.4 in.)	480.9 mm (18.9 in.)
Retail tray	527.4 mm (20.8 in.)	489.2 mm (19.2 in.)
Product with 15 in. tablet and the following:		
Counter top tray	406.2 mm (15.9 in.)	509.2 mm (20.0 in.)
Cash drawer tray	517.3 mm (20.4 in.)	511.4 mm (20.1 in)
Retail tray	551.1 mm (21.7 in.)	519.7 mm (20.5 in.)
Product with 17 in. tablet and the following:		
Counter top try	428.9 mm (16.9 in.)	525.9 mm (20.7 in.)
Cash drawer	540 mm (21.3 in.)	528.1 mm (20.8 in.)
Retail tray	573.8 mm (22.6 in.)	536.4 mm (21.1 in.)

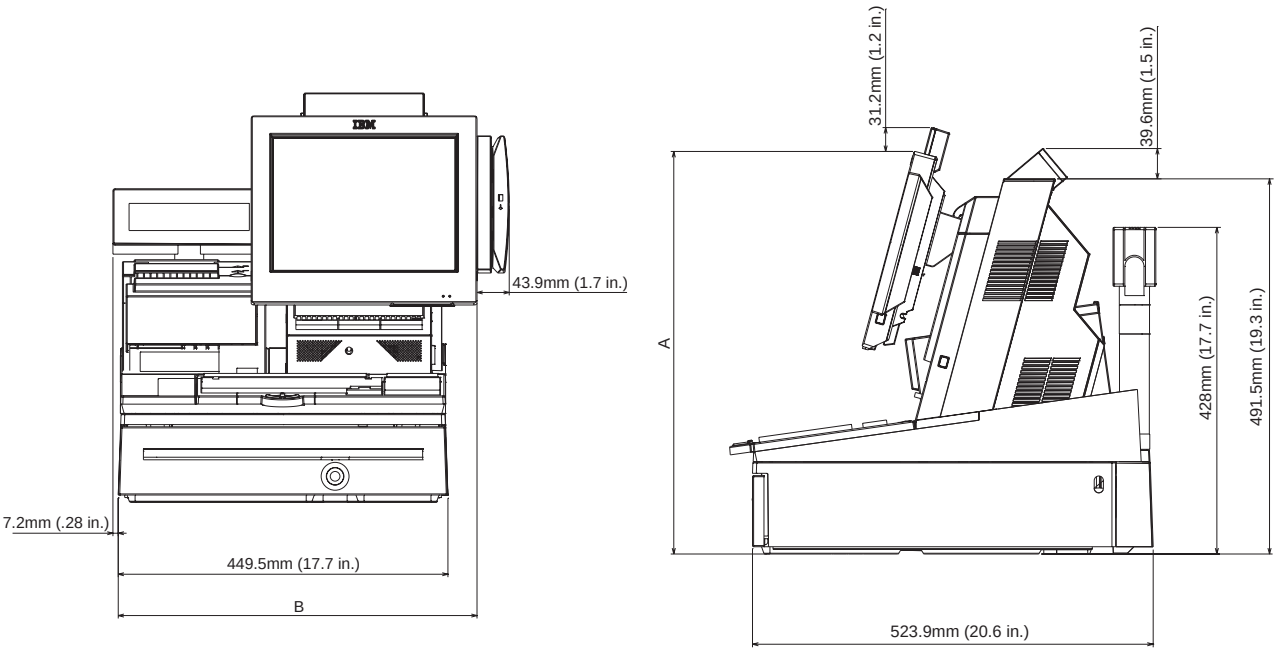


Figure 53. Dimensions of SurePOS Models 545 and 565 with retail tray. The tablet is shown at 15 degrees.

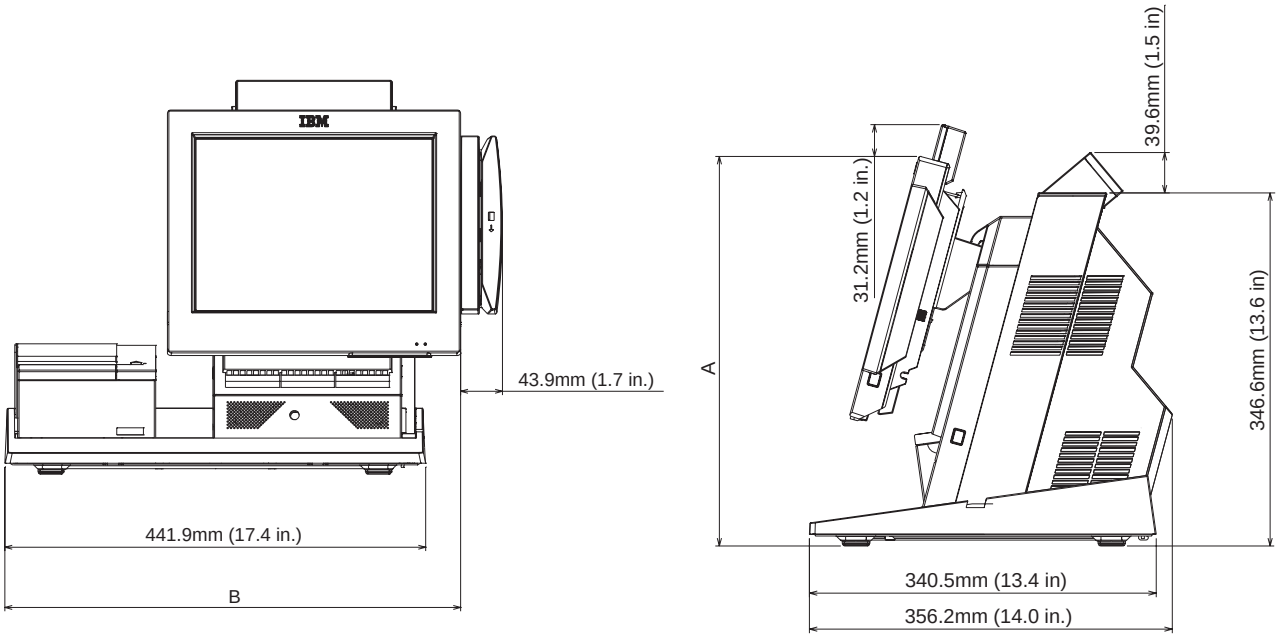


Figure 54. Dimensions of SurePOS Models 545 and 565 with counter top tray. The tablet is shown at 15 degrees.

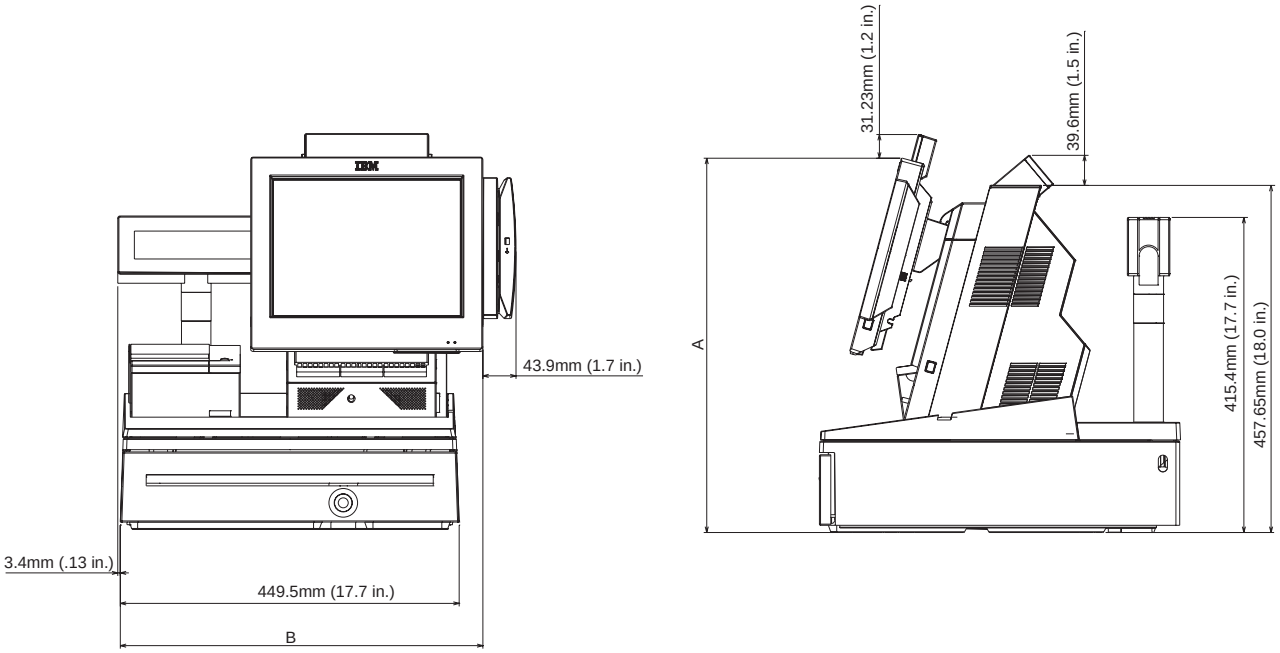


Figure 55. SurePOS Models 545 and 565 with cash drawer tray. The tablet is shown at 15 degrees.

Dimensions of unit with 12-inch display

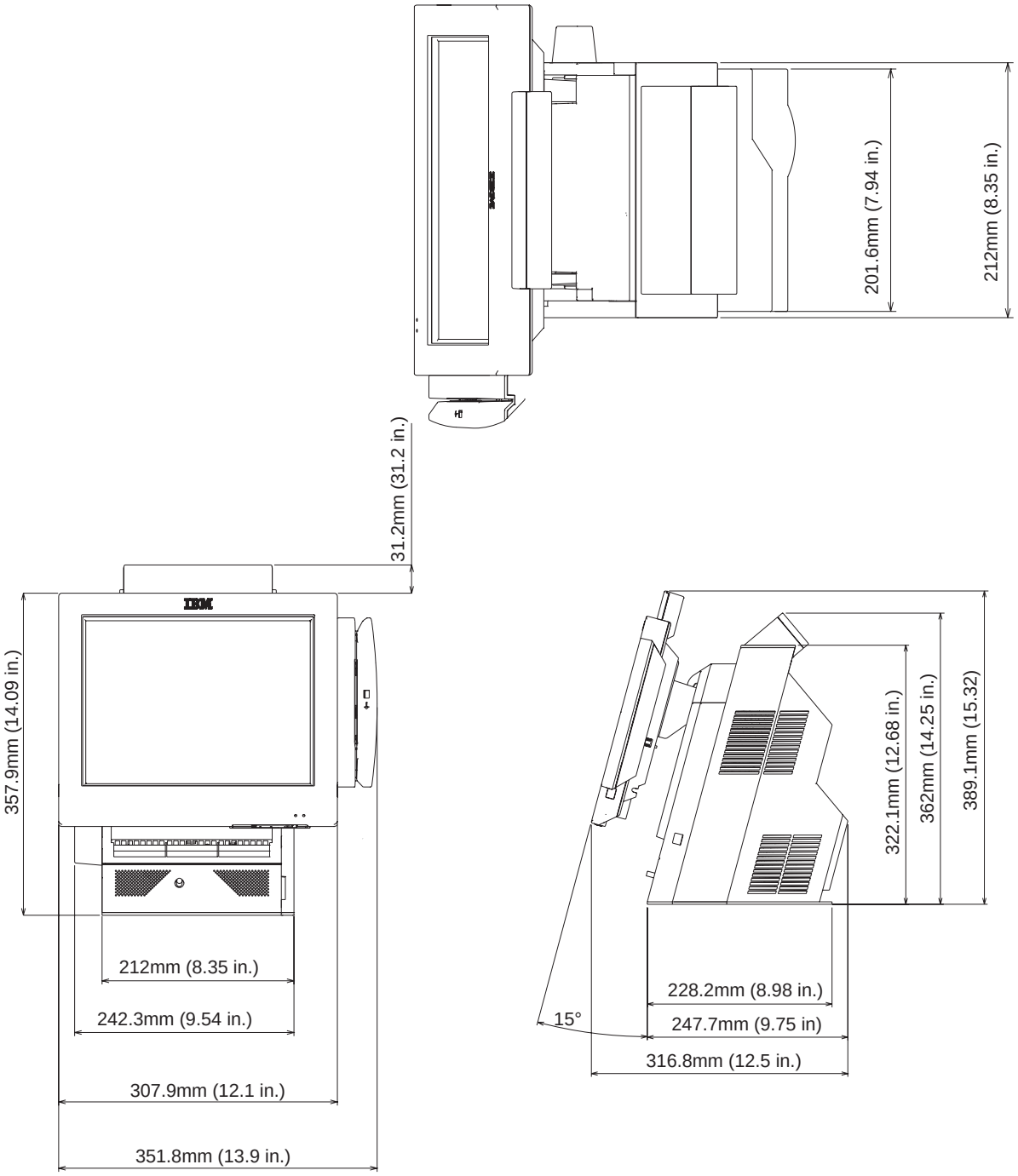


Figure 56. Dimensions of unit with 12-inch display

Dimensions of unit with 15-inch display

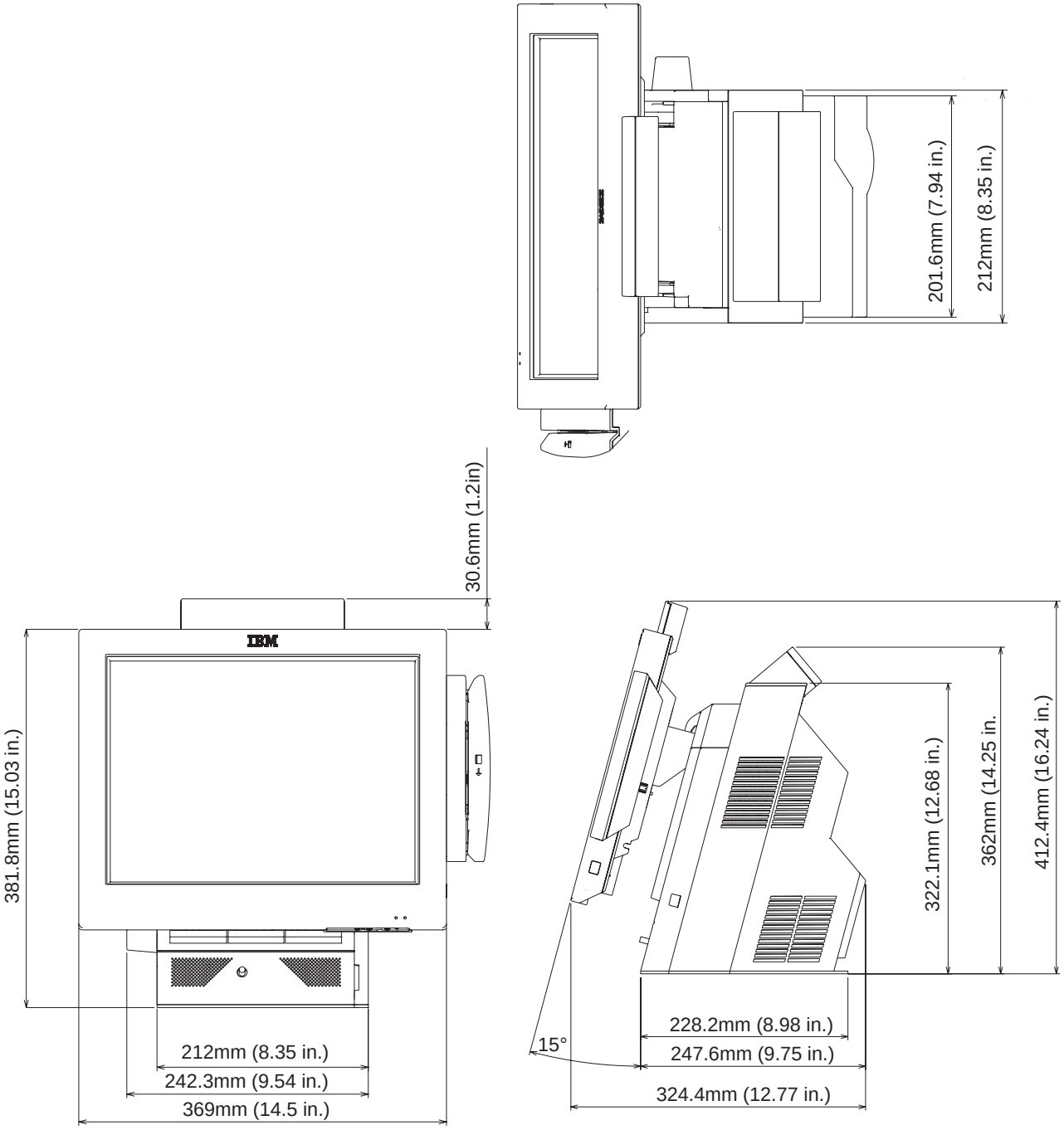
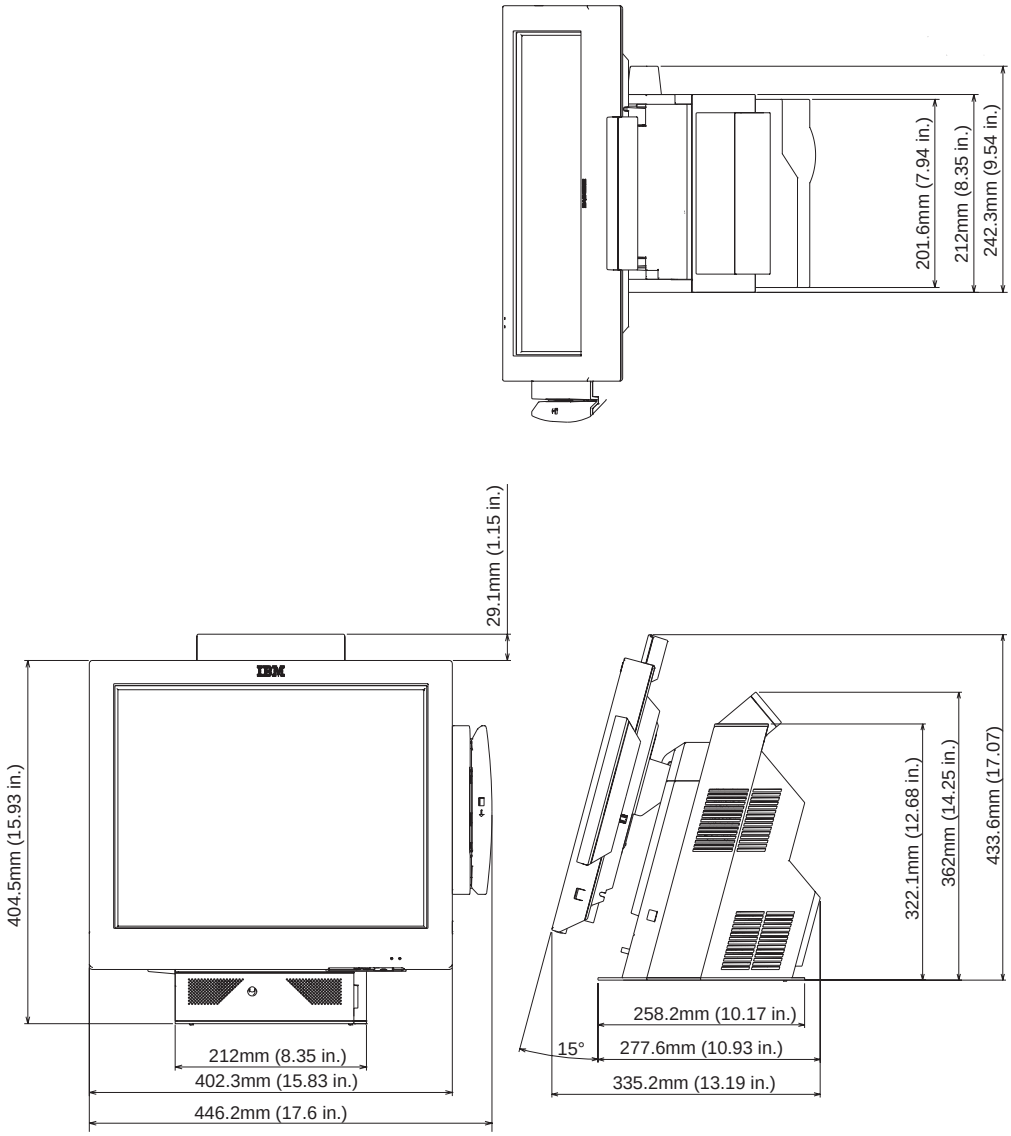


Figure 57. Dimensions of unit with 15-inch display

Dimensions of unit with 17-inch display



Power requirements and consumption

This section describes the power requirements and power consumption of the SurePOS 500 Series.

Power

Table 19. Input voltage, frequency

Input	Frequency
100 – 127 V AC	50 or 60 Hz
200 – 240 V AC	50 or 60 Hz

Table 20. SurePOS 500 Series Models 545 and 565 power supply

Nominal output voltage	Tolerance	Rated Current
+5.0 V AUX	±5%	2.0 A
+5.0 V MAIN	+5/-4%	8.0 A
+12.0 V	±5%	12.0 A
+3.3 V	±5%	6.0 A
-12.0 V	±10%	0.3 A
+25.3 V	±4%	3.0 A

Table 21. Power consumption

State:	Usage:
Off	4 W
Standby	80 W
Suspend	Not supported
On (idle, no I/O)	120 W
On (idle, I/O: cash drawer, MSR, 2/20, printer)	125 W
On (max, printing)	170 W
Input	100 - 127, 200 - 240 V AC (nominal), 50 or 60 Hz (+/- 3 Hz)
Voltage/Frequency	Sinusoidal, trapezoidal, or square wave inputs
Maximum kVA	0.3
AC Input	IEC 320 C14, unshielded right angle type
Connector/Cable leakage current	3.5 ma maximum
Inrush	< 30 A (peak, first cycle)

Port power ratings

- Only one cash drawer may be activated at any instance in time.
- Hot plugging of powered USB devices, especially printers, is not supported. Some powered USB devices create surge currents that may cause the system power supply to initiate over-current shut down.

  Note: All ports provide protection against power surges.

Table 22. Port current ratings

Port/Name	Port Voltage Ratings	Maximum Current
Distributed VFD/Serial	5 V	0.95 A
	12 V	0.65 A
USB (x6)	5 V	0.5 A
USB Plus Power	5 V	0.5 A
	12 V	1.5 A
	24 V	3.0 A continuous
		5.0 A peak
Keyboard and Mouse	5 V	0.6 A
3A, 3B/cash drawer	24 V	1 A for 200 msec

Connector-pin assignments

This following sections list the connector-pin assignments for the external and internal connectors.

External connectors

The following sections show the connector-pin assignments for external connectors.

Speaker connector

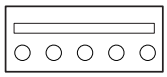


Table 23. Speaker connector-pin assignments

Pin	Connect
1	+12 V AC
2	Ground
3	Line Left
4	Line Right
5	Ground

MSR connector

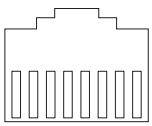


Table 24. MSR connector-pin assignments

Pin	Connector
1	+5 V dc
2	Serial data out
3	Serial data in

Table 24. MSR connector-pin assignments (continued)

Pin	Connector
4	Ground
5	KBD enable
6	Keyboard data
7	Keyboard clock
8	Ground

USB port connectors

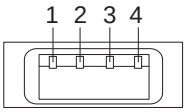


Table 25. USB port connector-pin assignments

Unpowered USB	
Pin	**Connector**
1	5 V bus
2	−Data
3	+Data
4	Ground

Note: Tablet USB ports are USB 1.1 compliant; side and back USB ports are USB 2.0 compliant.

Table 26. USB port connector-pin assignments

Powered USB	
Pin	**Connector**
Shell	Shield
1	5 V Vbus
2	−Data
3	+Data
4	Ground
5	Ground
6	Vplus (12 V or 24 V)
7	Vplus (12 V or 24 V)
8	Ground

Keyboard connector

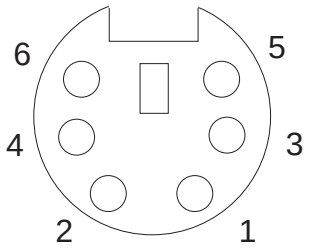


Table 27. Keyboard and mouse connector-pin assignments

Pin	Signal	I/O	Pin	Signal	I/O
1	Keyboard data	I/O	4	+5 V Main	I/O
3	Ground		5	Keyboard clock	

Mouse connector

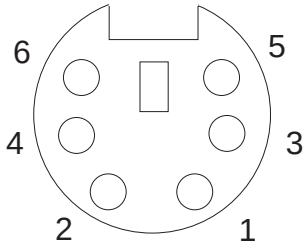


Table 28. Keyboard and mouse connector-pin assignments

Pin	Signal	I/O	Pin	Signal	I/O
2	Mouse data	I/O	4	+5 V Main	I/O
3	Ground		6	Mouse clock	

Microphone connector

The microphone connector is on the tower, at the lower left, below the side connector panel.

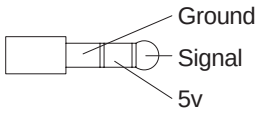


Table 29. Microphone connector-pin assignments

Pin	Signal
Tip	Signal
Ring	+5 V dc
Base	Ground

Headphone connector

The headphone connector is on the tower, at the lower left, below the side connector panel, with the microphone connector.

Table 30. Headphone connector-pin assignments

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

Serial connectors

RJ-45 Connectors (3):

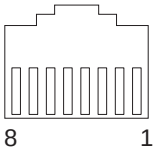


Table 31. RJ-45 connector-pin assignments

Pin	Signal	Pin	Signal
1	DSR	5	RXD
2	CD	6	TXD
3	DTR	7	CTS
4	Ground	8	RTS

15-pin serial connector: The 15-pin serial connector is a female connector.

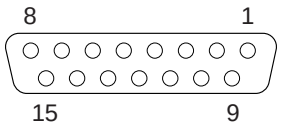


Table 32. Assignments for 15-pin serial connector

Pin	Connector	Pin	Connector
1	Carrier detect	8, 9	+12 V dc at 0.5 A maximum
2	Receive data	11	Distributed display present
3	Transmit data	12	Data set ready
4	Data terminal ready	13	Request to send
5	Ground	14	Clear to send
6	Ground	15	Ring indicate
7, 10	+5 V dc at 0.5 A maximum		

Ethernet connector

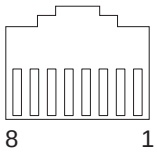


Table 33. Ethernet connector-pin assignments

Pin	Signal	I/O	Pin	Signal	I/O
1	TxD+	O	5	Ground	
2	TxD−	O	6	RxD−	I
3	RxD+	I	7	Ground	
4	Ground		8	Ground	

External video connector

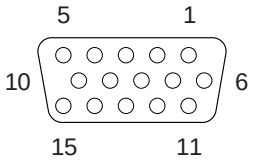


Table 34. Assignment of external-video connector pins

Pin	Connector	Pin	Connector
1	Red	9	No connection
2	Green	10	Ground
3	Blue	11	No connection
4	No connection	12	Monitor ID1
5	Ground	13	Horizontal sync
6	Red ground	14	Vertical sync
7	Green ground	15	Monitor ID3
8	Blue ground		

Cash drawer connector (2)

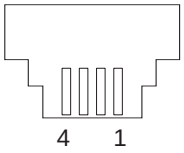


Table 35. Assignment of cash drawer connector pins

Pin	Connector
1	Ground
2	Sensor
3	Open signal
4	+24 V dc

Integrated customer display connector

To access this connector, you must remove the rear cover.

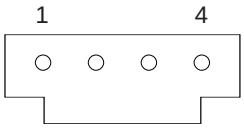


Table 36. Assignment of integrated customer-display connector pins

Pin	Connector
1	+5 V dc at 0.5 A maximum
2	Transmit data
3	Integrated customer display present
4	Ground

Temperature, humidity, and altitude limits

Table 37. Temperature, humidity, altitude limits

Condition	Temperature limits (dry bulb)	Relative Humidity	Maximum wet bulb temperature
Operating	5 to 40° C.	8 to 80 %	27° C.
Power Off	0 to 52° C.	5 to 95 %	27° C.
Storage	0 to 60° C.	5 to 100%	29° C.

This product is designed to operate up to 3050 m (10,000 ft.).

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Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM 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 aux normes d'Industrie Canada

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

European Union (EU) Mark of Conformity Statement

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Germany

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richlinie 89/336).

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

Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die IBM Deutschland Informationssysteme GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 50082–1 und EN 55022 Klasse A.

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden:

″Warnung: dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maβnahmen durchzuführen und dafür aufzukommen.″

EN 50082–1 Hinweis:

″Wird dieses Gerät in einer industriellen Umgebung betrieben (wie in EN 50082–2 festgelegt), dann kann es dabei eventuell gestört werden. In solch einem Fall ist der Abstand bzw. die Abschirmung zu der industriellen Störquelle zu vergrößern.″

Anmerkung:

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

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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

Japanese Voluntary Control Council for Interference (VCCI) Statement

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中华人民共和国“A 类”警告声明

声 明

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Taiwanese Class A warning statement

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Taiwan contact information

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台灣國際商業機器股份有限公司
台北市松仁路7號3樓
電話：0800-016-888

IBM Taiwan Product Service Contact Info:
IBM Taiwan Corporation
3F, No 7, Song Ren Road, Taipei Taiwan
Telephone: 0800-016-888

Note: Cable ferrites are required to suppress radiated EMI emissions and shall not be removed.

Taiwan recycle statement

Waste batteries, please recycle.

廢電池請回收

Electrostatic Discharge (ESD)

Attention: 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.

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