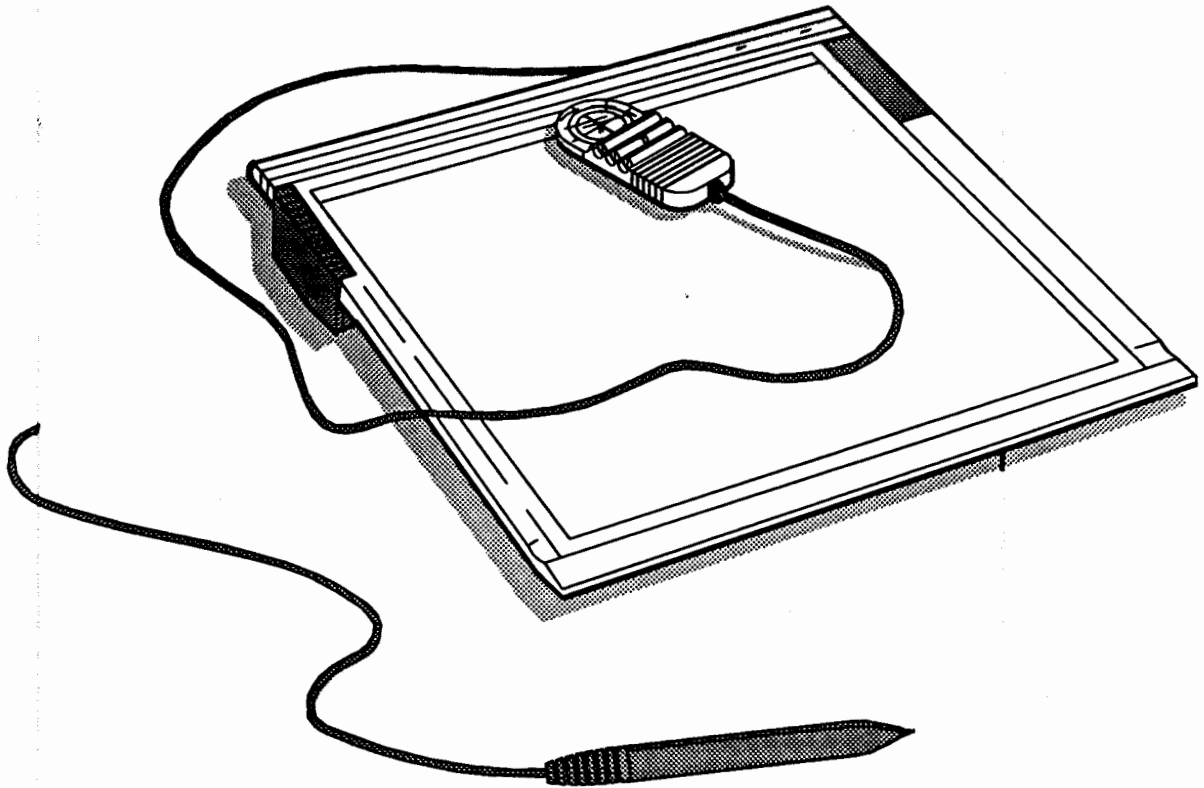


HEWLETT-PACKARD

HP SketchPro Tablet User's Guide



HP Computer Museum
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HEWLETT-PACKARD

Configuring the Hewlett-Packard SketchPro Tablet

You must perform the following two steps before you can use SketchPro with your CAD software.

1. Set the switches on the back of SketchPro as shown below for your software. *Turn off the tablet before setting the configuration switches; otherwise, SketchPro will not read your selections.*
2. When configuring your software program, you will be asked to select the tablet being used. Select the 'HP SketchPro' tablet if it is listed on the computer screen. Otherwise, select the tablet listed below for your software.

ANVIL-1000MD (version 1.2A)



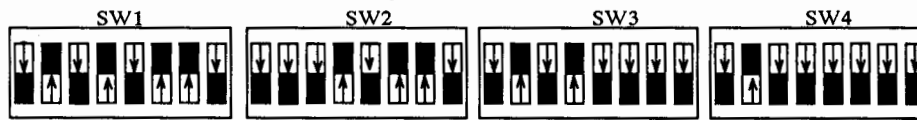
Select HITACHI 1111B

AutoCAD (version 2.62) AutoCAD is a U.S. trademark of Autodesk, Inc



Select the Hitachi HICOMSCAN HDG Series, Model 1111

AutoSketch (version 1.01)



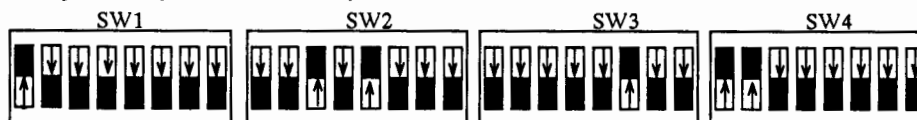
Select Microsoft Mouse *

CADKEY (version 3.01)



Select SUMMA/GTCO

EasyCAD (version 1.10)



Select Hitachi Tiger

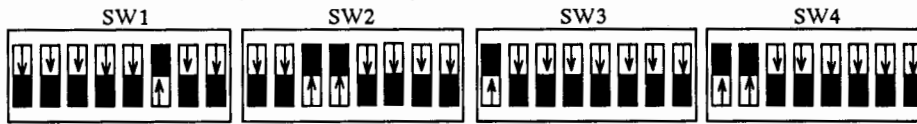
FastCAD (version 1.10)



Select Hitachi Tiger Tablet

* Drivers for the Microsoft Mouse are contained on the floppy disc provided with the tablet. Refer to the *HP SketchPro Tablet User's Guide* for installation.

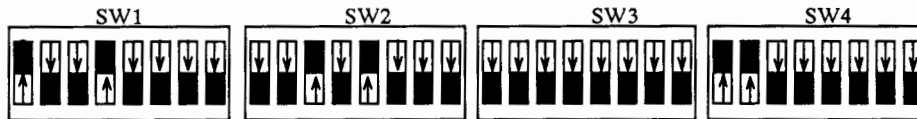
Generic CADD (version 3.0)



Select HITACHI
TIGER Digitizer

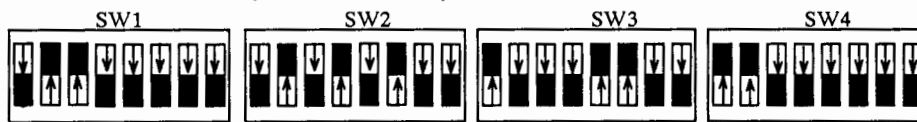
P-CAD PC-CAPS (version 1.35)

PC-CAD and PC-CAPS are trademarks of Personal Cad Systems, Inc.



Select Hitachi Tablet
Digitizer HDG-1111
IHDG1111.DRV

ROBO-CAD-PC2 (version 3.3F)



Select Hitachi 1111

VersaCAD (version 5.2)

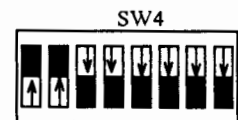
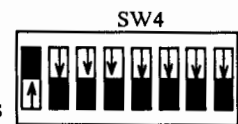


Select Summagraphics
MM1103

If Your Software Is Not Listed Above

If your CAD software is not listed above in these Software Configuration Instructions:

1. Determine if your software supports the Summagraphics Bit Pad 2 (MM1103). If so, configure SketchPro switch banks SW1, SW2, and SW3 to the settings given in the software manual for the Summagraphics Bit Pad 2. For switch bank SW4, set SW4-1 on (up) and all the other SW4 switches off (down), as shown in the illustration to the right.
2. Determine if your software supports the Hitachi HDG-1111B. If so, configure SketchPro switch banks SW1, SW2, and SW3 to the settings given in the software manual for the Hitachi HDG-1111B. For switch bank SW4, set SW4-1 and SW4-2 on (up) and all the other SW4 switches off (down), as shown in the illustration to the right.



NOTE: If your software supports both tablets, select the Summagraphics Bit Pad 2.

If the Summagraphics Bit Pad 2 or the Hitachi HDG-1111B are supported by your software, but switch settings are not given, refer to the *HP SketchPro Tablet User's Guide* appendix for a description of switch functions during emulation. Using either the table for Summagraphics emulation or the table for Hitachi emulation, determine the function of each switch (baud rate, handshaking, etc.) and set the switch to the specifications provided by the software vendor.

Direct questions about your software package to the software manufacturer. Direct questions about the HP SketchPro Graphics Tablet to your nearest Hewlett-Packard dealer.

HP SketchPro Tablet User's Guide



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16399 W. Bernardo Drive, San Diego, CA 92127-1899

Part No. 07060-90002

Printed in Singapore

First edition — September 1987

Warranty Statement

One-Year Limited Hardware Warranty

Except when used as part of an HP system, Hewlett-Packard warrants your graphics peripheral hardware product against defects in materials and workmanship for a period of one year from receipt by the end user. If HP receives notice of such defects during the warranty period, HP will either, at its option, repair or replace products which prove to be defective.

Should HP be unable to repair or replace the product within a reasonable amount of time, customer's alternative exclusive remedy shall be a refund of the purchase price upon return of the product.

If this product was purchased as part of an HP system in a coordinated shipment or as a system add-on, it is warranted against defects in material and workmanship during the same period as the HP system.

Exclusions

The above warranty shall not apply to defects resulting from: improper or inadequate maintenance by customer; customer-supplied software or interfacing; unauthorized modification or misuse; operation outside of the environmental specifications for the product; or improper site preparation and maintenance.

Obtaining Warranty Service

No warranty registration card is supplied. To obtain warranty service, customer must supply proof of the purchase date. Products must be returned to a service facility designated by HP. HP may repair on-site at the option of the customer. Customer is responsible for travel charges when on-site repair is requested.

Warranty service for products purchased as part of a system will be subject to service in accordance with the system support services.

Customer shall prepay shipping charges for products returned to HP for warranty service and HP shall pay for return of the products to customer. However, customer shall pay all shipping charges, duties, and taxes for products returned to HP from another country.

Warranty Limitations

HP makes no other warranty, either expressed or implied, with respect to this product. HP specifically disclaims the implied warranties of merchantability and fitness for a particular purpose. Some states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion may not apply to you. However, any implied warranty

merchantability or fitness is limited to the one-year duration of this written warranty.

This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state, or province to province.

Exclusive Remedies

The remedies provided herein are customer's sole and exclusive remedies. In no event shall HP be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Obtaining Service During or After Warranty

During the Warranty Period

If your hardware should fail during the warranty period, follow the test procedures in the system manuals, then bring the failed piece of equipment to an Authorized HP Personal Computer Dealer Repair Center — or send the equipment to one of the HP Field Repair Centers listed in the directory sent with your product. (HP may repair on-site at your option, in which case you are responsible for travel charges.)

After the Warranty

If your hardware should fail after the warranty period, follow the test procedures in the system manuals, then bring the failed piece of equipment to an Authorized HP Personal Computer Dealer Repair Center or call your HP Sales and Service Office for details of the services available.

If you are uncertain about which unit to return, call your Authorized HP Personal Computer Dealer or a Field Repair Center for assistance.

Returning Your Tablet for Service

If you need to ship your tablet, be sure it is packed in a protective carton. We recommend that you save the original shipping container for this purpose. In-transit damage is not covered by the warranty, so it is best to always insure shipments.

List the serial number of the tablet and the exact configuration at the time of malfunction, including the interface cable, computer, peripherals, and software (program) in use. Include a description of the symptoms for service personnel. If purchased through an HP dealer, include a copy of the sales slip or other proof of purchase to establish the warranty coverage period. You should also include your name, address, and a phone number where you can be reached during the day.

How to Use This Manual

This User's Guide contains the information you need to set up your tablet, connect it to a computer, and use a graphics software program. A brief description of the manual's contents follows.

- Chapter 1 Getting Started** gives you basic information about your tablet such as identifying the features and accessories of the tablet. It also tells you how to clean the tablet.
- Chapter 2 Installing Your SketchPro Tablet** discusses the procedure for configuring your tablet and connecting it to a computer.
- Chapter 3 Using the HP Overlay Softkeys** tells you how to use the tablet features provided on the HP overlay. This chapter also tells you how to use your tablet as a mouse.
- Appendix A Technical Information** gives you the technical specifications of your tablet, including the meanings of the configuration switches in their different emulation modes.

Manual Terms and Conventions

We've tried to minimize the use of technical terms in this manual. Refer to the glossary whenever you are unfamiliar with a word. Explanations of a special type and some abbreviations follow.

- SMALL BOLDFACE TYPE** Denotes lights, buttons, or softkeys found on the tablet, such as **ON/OFF**.
- lpi** Lines per inch. Used in terms of tablet resolution.
- lpmm** Lines per millimeter. Used in terms of tablet resolution.
- RS-232-C** A serial interface. All references to RS-232-C interface in this manual apply equally to RS-232-C and CCITT V.24 interfaces. The term RS-232-C is used for simplicity.

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Getting Started

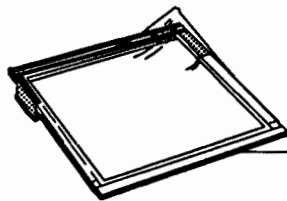
Welcome to Hewlett-Packard's SketchPro Tablet, a valuable addition to your computer-aided-design (CAD) system. The tablet is a data entry device that converts a physical location on the tablet's surface into digital values. This process is known as digitizing.

With the help of a compatible CAD software package, you can pick items from a tablet overlay menu and position your screen cursor to create schematics and engineering drawings. You can also trace documents and create freehand sketches. Additionally, you can use the tablet software menu applications.

This chapter familiarizes you with your SketchPro Tablet and its accessories, and how to clean your tablet.

Initial Inspection

Compare your accessories with those listed below.



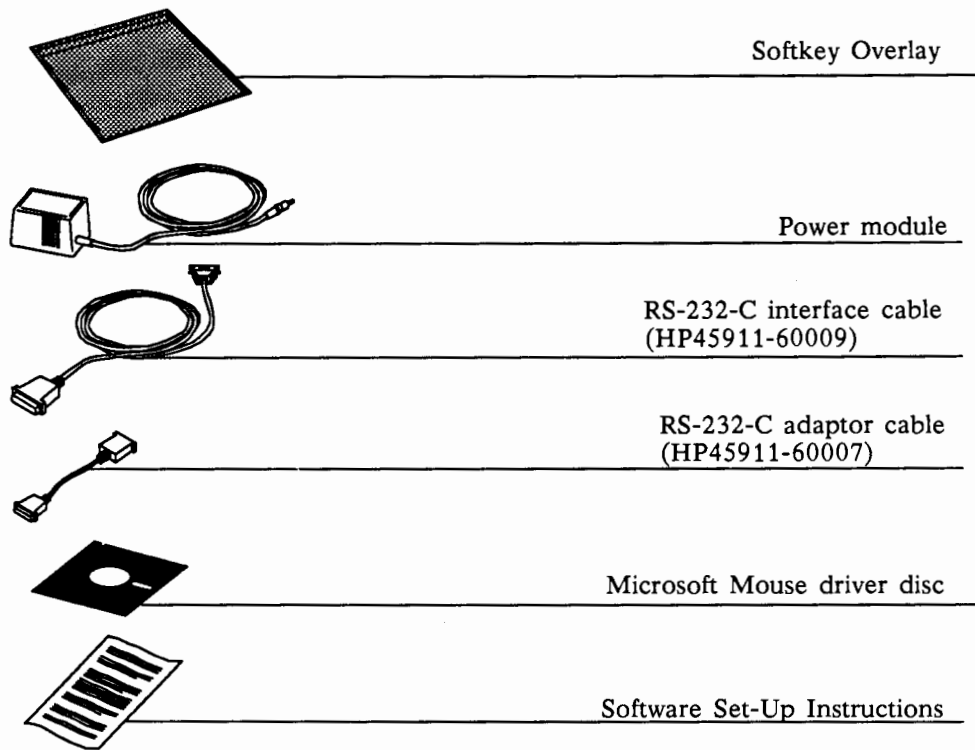
SketchPro tablet



Four-button cursor



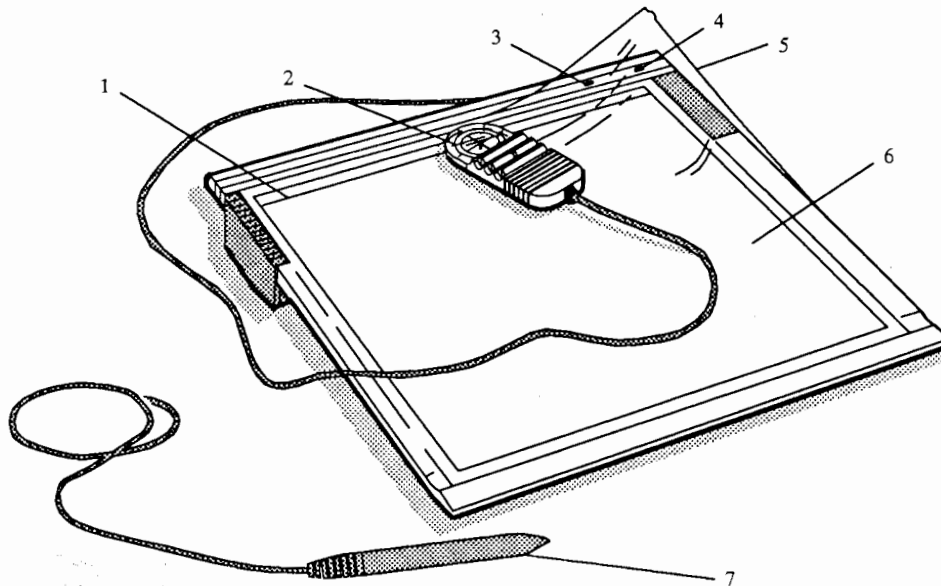
Stylus



The SketchPro Tablet and its accessories were inspected before being shipped and should be in good operating order. If any parts are missing, contact the dealer or HP Sales and Support Office where you purchased the tablet. Save the original packing materials and carton in case you ever need to ship your tablet. Carefully inspect the tablet and accessories for any physical damage sustained in transit. If you receive the unit in damaged condition, notify the dealer or HP Sales and Support Office, and file a claim with the carrier.

Tablet Features

Look at the front of your tablet and identify the features numbered in the following illustration.



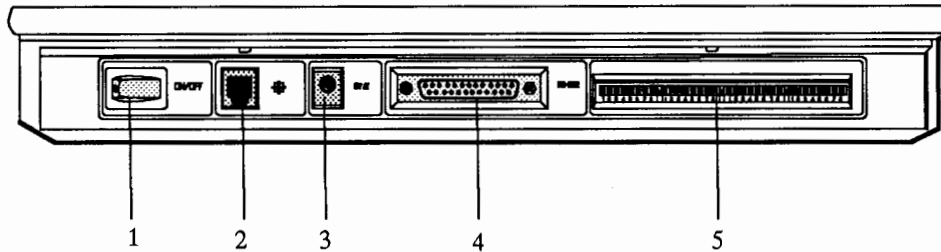
SketchPro Tablet (Front View)

1. **Overlay Softkeys** — Provide additional graphics functions when selected.
2. **Four-Button Cursor** — Interacts with the tablet for defining points to be digitized and for selecting and performing software functions. Your software may let you assign functions of your choice to some of the four buttons (refer to your software documentation).
3. **Power Light** — Indicates whether the power is on (lighted) or off.
4. **Digitize Light** — Indicates whether the stylus is digitizing a point (lighted) or is waiting for additional user input (flashing) to complete a function.
5. **Overlay Protector** — Holds down and protects any tablet overlay you use.

6. **Platen** — Provides an active digitizing area for drawing or selecting softkey or menu items.
7. **Stylus** — Interacts with the tablet for defining points to be digitized and selecting and performing software functions.

The Rear Panel

Look at the rear of your tablet and identify the features numbered in the following illustration.



SketchPro Tablet (Rear View)



1. **ON/OFF Switch** — Turns the tablet on and off.
2. **Four-button Cursor/Stylus Connector** — Accepts the modular jack on the cursor or stylus cable.
3. **Power Module Connector** — Accepts the plug from the power cable.
4. **RS-232-C Interface Connector** — Accepts the serial cable used to connect the tablet to a computer.
5. **Configuration Switches** — Configure the tablet for use with a particular graphics software package.

Using the Tablet Accessories

The tablet comes with a four-button cursor and a stylus; you can use either one to start digitizing immediately. Attached to the tablet is a clear-plastic overlay protector. The following sections discuss how to use each of these accessories.

The Four-Button Cursor

The four-button cursor has four buttons located on its top. The cursor also has a cross-hair on a clear plastic extension at the front edge of the cursor. This cross-hair represents the 'pick point.' Position the cross-hair directly over a point on the tablet and press any of the four buttons, the cursor transmits the location and proximity of the pick point to the computer.

The software you are using may allow you to assign functions to each of the four buttons. Your software and/or the settings of the configuration switches on the rear panel of the tablet determines the functions or methods of operation that can be assigned to the four-button cursor.

The Overlay Protector

The clear overlay protector provided with the tablet not only protects the softkey overlay, but prevents static build-up when using the stylus. Static build-up can result in the loss of accuracy. We recommend that you cover every overlay you use with the overlay protector to ensure the integrity of your data points.

NOTE: The overlay has been designed to work in normal room-temperature conditions (less than 50° C, 122° F). Do not expose the overlay to extreme temperatures. ■

The Stylus

The stylus is a pen-like input device. In most CAD software, the stylus is directed to send a continuous stream of data or coordinate groups to the computer. Your CAD software and/or the settings of the configuration switches on the rear panel of the tablet determines the functions or methods of operation that can be assigned to the stylus.

Inside the stylus is a switch. When you press the tip of the stylus against the platen until you hear and feel a click, you close the switch. It is the closing of the switch that sends the digitized location to the computer either establishing a point on the surface of the platen or performing a function indicated by the software template. When you release the pressure on the stylus, you should hear and feel the switch click open.

NOTE: When you click the stylus, the **DIGITIZE** light at the top of the tablet turns on indicating that the location of the stylus is being sent to the computer. When you release the stylus, the point is digitized, and the **DIGITIZE** light turns off. The **DIGITIZE** light is on only when you digitize a point. ■

Your CAD software monitors the location of the stylus on the tablet and whether the stylus switch is on or off. You can use the stylus for drawing in the same manner that you use a pen. The stylus' position is sent to the tablet regardless of the stylus' angle of tilt.

Cleaning the SketchPro Tablet

Tablet maintenance is limited to a thorough cleaning—no other maintenance is required. Periodically clean the tablet using the following instructions.

WARNING

Unplug the tablet power module before cleaning. Do not allow water to run inside the tablet as this may create a shock hazard.

NOTE: Do not use abrasive cleaners or so-called ‘mild’ cleaners on the digitizing surface. Abrasive cleaners can scratch or mar the digitizing surface. Mild cleaners can contain chemicals that damage the tablet surface. ■

1. Wipe or brush away dust from the tablet, overlay, and overlay protector with a cloth or soft brush.
2. Wipe the tablet surface, template, and overlay with a damp sponge or soft cloth. If necessary, clean with a 50-50 solution of isopropyl alcohol and water. Wipe with water to rinse off any residue.
3. Dry with a soft, lint-free cloth.

2

Installing Your SketchPro Tablet

This chapter describes how to connect the tablet to your computer and configure it to your software. The following steps are required to install the tablet.

- Configure the tablet to your software.
- Connect the tablet to your computer.
- Configure your software to the tablet.

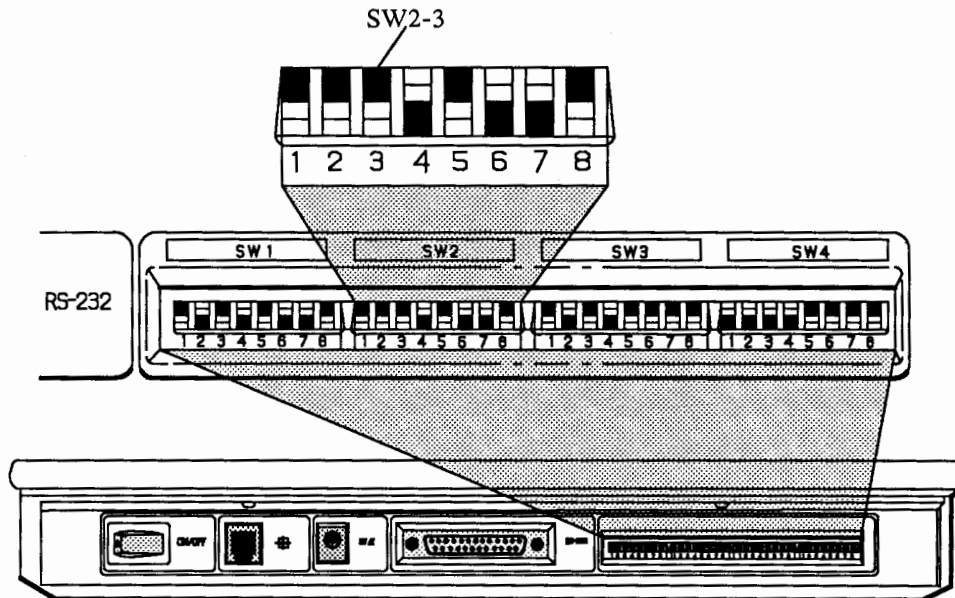
This chapter includes specific instructions for connecting your tablet to the following computers.

HP Vectra PC
IBM AT
IBM PC/PC-XT

If your computer is not listed, you can probably still connect your tablet to your computer if it is compatible with one of those listed above.

Setting the Configuration Switches

On the rear of the tablet are four sets of configuration switches. The sets are labeled SW1, SW2, SW3, and SW4. In this manual, we refer to individual switches by listing the set number followed by the number of the switch. For example, 'SW2-3' indicates the third switch on the set labeled SW2.

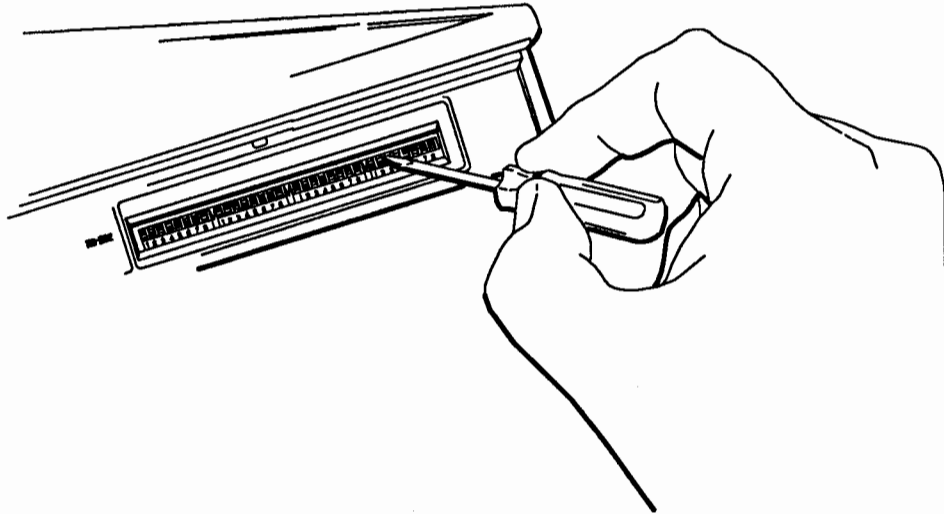


Setting Configuration Switches

2-2 Installing Your SketchPro Tablet

The software you use determines how the configuration switches must be set. Use the following instructions to change a switch setting.

1. Turn off the tablet.
2. Use a small-tipped object like a screwdriver or pen to push the switch to the required position.



3. Turn on the tablet. The new switch settings are now in effect.

Your tablet checks the switch settings only when you turn it on, so be sure the tablet is turned off *before* resetting the switches. Set the tablet configuration switches before turning on the tablet or connecting it to your computer.

Configuring the Tablet to Your Software

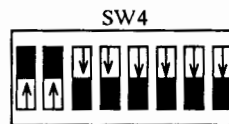
The software configuration instructions supplied with the tablet tell you how to set the configuration switches for most major CAD software packages.

Use the software configuration instructions and the following general procedure for setting the configuration switches.

1. Set the configuration switches as described in the software configuration instructions (provided with the tablet) for your software package.
2. If your software is not listed in the software configuration instructions, use the following procedure.
 - a. Determine if your software supports the Summagraphics Bit Pad 2 (MM1103). If so, refer to your software documentation and set the switches for SW1, SW2, and SW3 as shown for the Summagraphics Bit Pad 2. Set the tablet for Summagraphics emulation by setting SW4-1 up (on); all the other switches on SW4 should be down (off). Refer to the following illustration for SW4.



- b. Determine if your software supports the Hitachi HDG-1111B. If so, refer to your software documentation and set the switches for SW1, SW2, and SW3 as shown for the Hitachi. Set the tablet for Hitachi emulation by setting SW4-1 and SW4-2 up (on); all the other switches on SW4 should be down (off). Refer to the following illustration for SW4.



If the Summagraphics Bit Pad 2 or the Hitachi HDG-1111B are supported by your software, but switch settings are not given, refer to Appendix A for a description of switch functions during emulation. Using either the table for Summagraphics emulation or the table for Hitachi emulation, determine the function of each switch (baud rate, handshaking, etc.) and set each switch to the specifications provided by the software vendor.

When both tablets are listed, we recommend that you select to emulate the Summagraphics Bit Pad 2 (MM1103).

3. When you have finished setting the configuration switches on the tablet, use the following section to connect the tablet to your computer.

Connecting Your Tablet to Your Computer

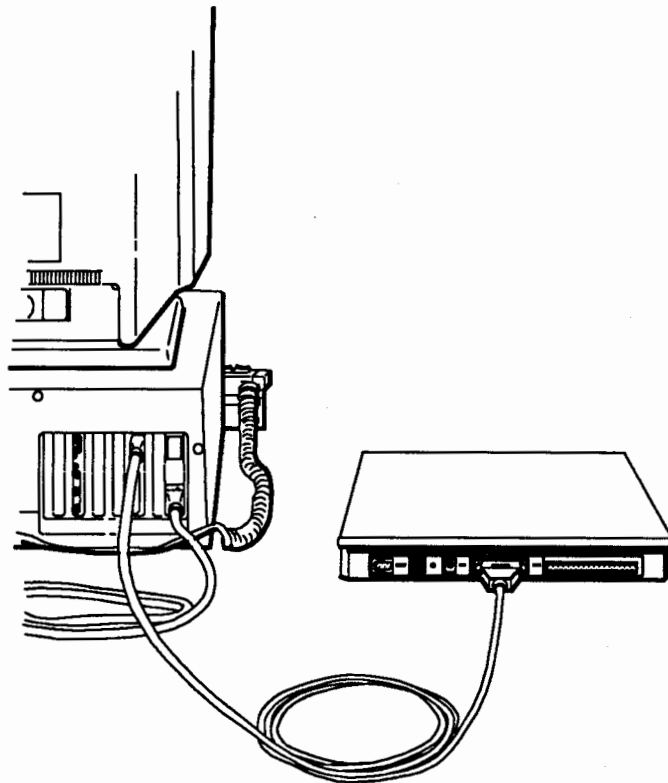
The following sections list required equipment and describe how to connect SketchPro to three different computers: the HP Vectra, the IBM AT, the IBM PC/XT and the IBM PC. You can also use the setup instructions for most compatible computers. The cable(s) you need for connecting the tablet to the computer are supplied with the tablet.

NOTE: Most software packages require that you connect the tablet to either serial port COM1 or COM2. Connect the tablet to the port that best suits your needs. ■

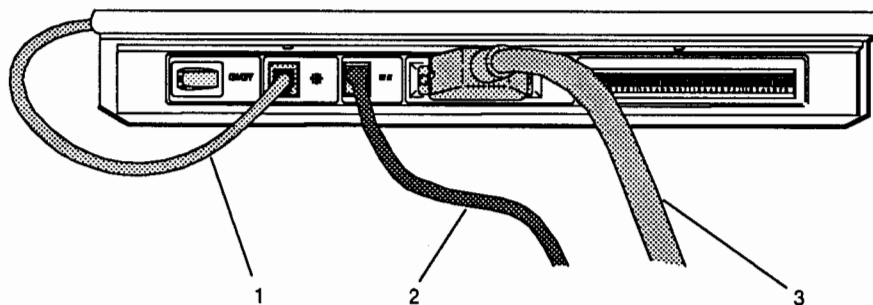
HP Vectra Personal Computer

Computer Equipment	Tablet Equipment
HP Vectra PC Graphics monitor Disc drive HP Serial/Parallel Interface Card (HP 24540A) <i>or</i> HP Dual Serial Interface Card (HP 24541A)	HP SketchPro Tablet HP 45911-60009 cable (supplied with the tablet)

1. With your equipment turned off, connect the tablet to the computer using the HP 45911-60009 cable as shown below.



2. Connect the modular jack from either the four-button cursor or the stylus into the proper connector on the back of the tablet.
3. Connect the round plug from the power connector into the connector on the back of the tablet.
4. Plug the power module into a wall socket or power strip.
5. Turn on your computer and peripherals including the tablet. The tablet has a **POWER** light at the top of the tablet to let you know whether or not the tablet is receiving power.

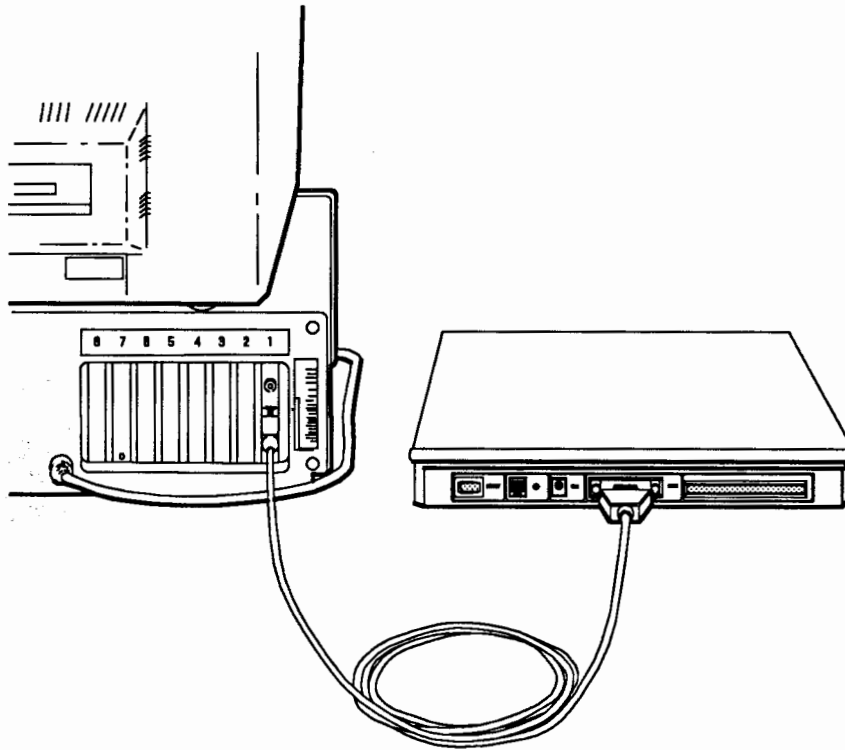


1. *Four-Button Cursor/Stylus Cable*
2. *Power module cable*
3. *Interface cable (45911-60009)*

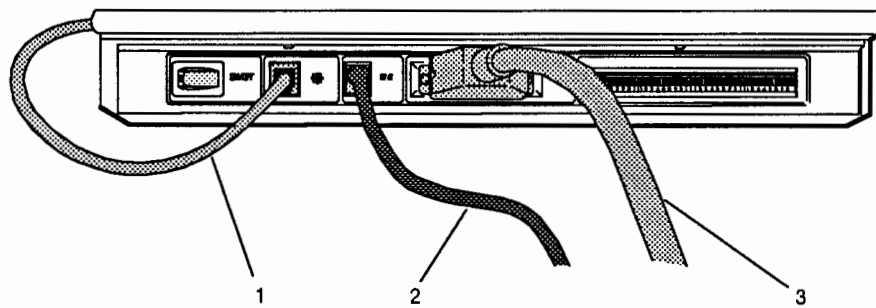
The IBM AT Personal Computer

Computer Equipment	Tablet Equipment
IBM AT system unit Graphics monitor (color or B & W) IBM color/graphics monitor adapter Disc drive IBM serial/parallel adapter	HP SketchPro Tablet HP 45911-60009 cable (supplied with the tablet)

1. With your equipment turned off, connect the tablet to the computer using the HP 45911-60009 cable as shown below.



2. Connect the modular jack from either the four-button cursor or the stylus into the proper connector on the back of the tablet.
3. Connect the round plug from the power connector into the connector on the back of the tablet.
4. Plug the power module into a wall socket or power strip.
5. Turn on your computer and peripherals including the tablet. The tablet has a **POWER** light at the top of the tablet to let you know whether or not the tablet is receiving power.



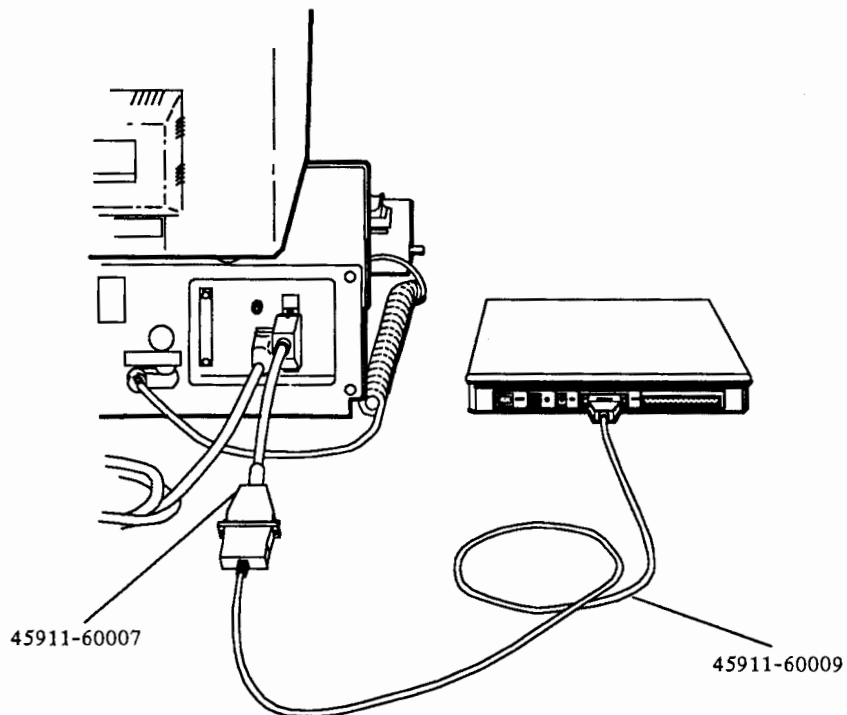
1. *Four-Button Cursor/Stylus Cable*
2. *Power module cable*
3. *Interface cable (45911-60009)*



The IBM PC and PC-XT Personal Computer

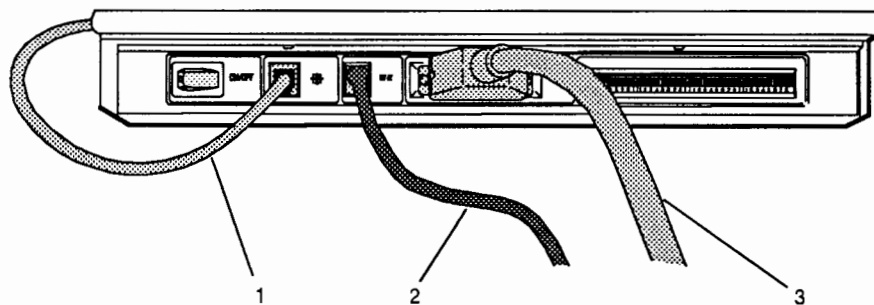
Computer Equipment	Tablet Equipment
IBM system unit Graphics monitor (color or B & W) IBM color/graphics monitor adapter Disc drive Asynchronous Communications Adapter (standard on the IBM PC-XT)	HP SketchPro Tablet HP 45911-60009 cable (supplied with the tablet) HP 45911-60007 adaptor cable (supplied with the tablet)

1. With your equipment turned off, attach the 45911-60009 cable to the tablet.
2. Attach the 9-pin connector of the cable adapter (45911-60007) to the 45911-60009 cable and connect the 25-pin connector of the adapter cable to the computer as shown below.



2-10 Installing Your SketchPro Tablet

3. Connect the modular jack from either the four-button cursor or the stylus into the proper connector on the back of the tablet.
4. Connect the round plug from the power connector into the connector on the back of the tablet.
5. Plug the power module into a wall socket or power strip.
6. Turn on your computer and peripherals including the tablet.
The tablet has a **POWER** light at the top of the tablet to let you know whether or not the tablet is receiving power.



1. *Four-Button Cursor/Stylus Cable*
2. *Power module cable*
3. *Interface cable (45911-60009).
(The adapter cable (45911-60007)
connects this cable to the
computer.)*

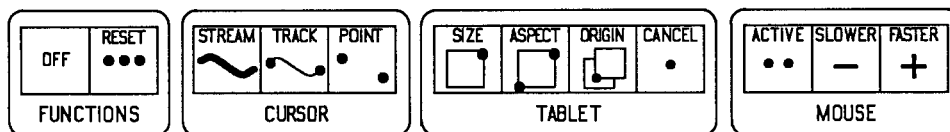
Configuring Your Software to SketchPro

After you set the configuration switches on the tablet and connect the tablet to your computer, you must configure your software to your computer and its peripherals.

Your software package will probably support several tablets; these will be listed in the software configuration menu. For each tablet, the software uses a unique set of instructions to control the transmission of data between the tablet and the computer. This set of instructions is generally referred to as a driver. The software configuration instructions supplied with SketchPro tell you which tablet driver to select when configuring most major software packages.

Using the HP Overlay Softkeys

The top half-inch of the HP overlay provided with the tablet is allocated for softkeys. From left to right, the first twelve softkeys are predefined; they provide functions not always available through software programs.



Use these predefined softkeys whenever your software program does not already perform the functions provided by the softkeys.

The Program Softkeys, P1-P10, are provided for software vendors. When supported, these programmable softkeys will provide additional functions. Refer to your software documentation.

Using the Softkeys

Throughout this chapter, the phrase 'press the **SOFTKEY**' (where **SOFTKEY** is one of the twelve predefined softkeys shown above) indicates that you should position the cross-hair on the softkey function you want to use and press any button on the four-button cursor. When using the stylus, position the stylus on the softkey and click and release the stylus.

Note that you must press some softkeys more than once before they are activated; for example, you must press **RESET** three times and the Mouse **ACTIVE** softkey twice. Refer to the individual softkey descriptions that follow for more details.

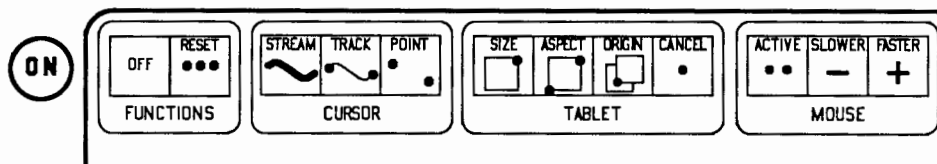
Turning On the Softkeys

The tablet is shipped with the softkeys deactivated. If you press **ON** when the softkeys are not active, the **DIGITIZE** light at the top of the tablet will not light and the softkeys will remain inactive.

If your software package does not use the softkeys on the softkey overlay or if your software overlay uses the active area occupied by the softkeys, do not activate the softkeys. This ensures that the softkey functions do not interfere with the features provided on your software overlay.

If your software package requires the use of the HP overlay's softkeys, or if you want to use the HP overlay's softkey functions with a software package that does not already provide those functions, turn on the softkeys as described below.

The **ON** button is outside the tablet's active area.



Use the following procedure for turning on the softkeys.

1. Set configuration switches SW4-3 and SW4-4 up (on). The softkeys are active *only* when configuration switches SW4-3 and SW4-4 on the back of the tablet are on.
2. Press the **ON** button using the four-button cursor or the stylus.

Unless otherwise noted, *all* instructions in this chapter assume that the softkeys have been activated properly.

NOTE: You must turn the tablet power switch off and then on for the tablet to register the new configuration switch settings. For more information, refer to *Setting the Configuration Switches* in Chapter 2. ■

The Function Softkeys

Use the first two softkeys, **OFF** and **RESET**, to control the functions of all the softkeys.



The **OFF** softkey turns off the softkeys. To turn the softkeys on again, press **ON** to the left of the softkeys.



To return the tablet to the configuration on the dip switches, press **RESET** *three* times.

The Cursor Softkeys

Use the three cursor softkeys, **STREAM**, **TRACK**, and **POINT**, to determine the way data is sent from the tablet to the computer. Each method is described below.

STREAM 

Use this mode to digitize points continuously without pressing any button on the four-button cursor or clicking the stylus. The location is continuously transmitted to the computer as the four-button cursor or stylus is moved on the tablet. The screen cursor always reflects the true location of the cross-hair or stylus on the tablet.

TRACK 

To move the cursor in this mode, you must hold down a button on the four-button cursor or click the stylus without releasing. The tablet sends the cross-hair location to the computer only while the button is pressed. If you release the button, the tablet no longer transmits its location, and the screen cursor stops moving.

POINT 

In this mode, the cross-hair location is sent to the computer only when you press and release a button on the four-button cursor or click and release the stylus.

The Tablet Softkeys

Use these softkeys to change or move the active area on the tablet. You can also use these softkeys to change the aspect ratio of your screen image.



Use **SIZE** to change the size of the active area of the tablet.

1. Press **SIZE**, the digitizing light starts blinking; this indicates the tablet is waiting for another point to be digitized.
2. Locate the point on the tablet that you want to be the new upper right corner of the active area.
3. Press any button on the four-button cursor or click and release the stylus; the digitize light will stop blinking.

The digitized point plus the origin determines the new size of the tablet. (The origin is usually the lower left corner of the tablet; but you can change the origin location with the **ORIGIN** softkey.)

The **SIZE** softkey lets you shrink the tablet to a small area at the lower left corner. Points formerly located at the far right side are now situated closer to the center of the tablet.



Use **ASPECT** to change the aspect ratio of your screen image, to correct a distorted image. For example, a circle drawn on the tablet should appear as a circle on the monitor, rather than an ellipse.

To test the aspect of your graphics system, activate the freehand mode in your CAD software. Then, using a template of a circle, trace a circle on the tablet. If the resulting figure on your com-

puter is circular, your system aspect is correct. If the figure is not circular, perform the following steps.

1. Activate the **ASPECT** softkey.
2. Place an outline of a square on the computer screen, or use the grid marks in your software.
3. Digitize the lower left corner of the square and then the upper right corner. The tablet will automatically adjust the aspect.



Use the **ORIGIN** softkey to define the tablet origin, or (0,0) coordinates. The default origin location is at the lower left corner of the tablet. Use the following instructions to move the origin to another location.

1. Press the **ORIGIN** softkey.
2. Locate a point on the tablet and press any cursor button or click the stylus. This digitized location now becomes the tablet origin (0,0).

You can use the **ORIGIN** softkey in combination with the **SIZE** softkey to move the active area to any part of the tablet. Use **SIZE** to define the upper right corner; use **ORIGIN** to move the lower left corner.



If you press **SIZE**, **ASPECT**, or **ORIGIN** and then change your mind, you can press **CANCEL** to reset the softkey to its previous condition.

The Mouse Softkeys

Use the three mouse softkeys, **ACTIVE**, **SLOWER**, and **FASTER**, only when you want the four-button cursor and tablet to act like a Microsoft Mouse. To use the mouse mode, you *must* have already installed the Microsoft Mouse driver, as described in *Using Mouse Mode*.



Use **ACTIVE** to turn on the Microsoft Mouse emulation mode. You must press **ACTIVE** *twice*.



Use these softkeys to change the speed that the cursor moves on the screen in relation to the movement of the four-button cursor or stylus on the tablet.

Select **SLOWER** to move the screen cursor a short distance in relation to your movement of the four-button cursor or stylus.

Select **FASTER** to move the screen cursor a greater distance on the screen with less movement of the four-button cursor or stylus.

You can increment the change in speed by pressing either **SLOWER** or **FASTER** more than once.

Using Mouse Mode

You can use the tablet as a Microsoft Mouse. This is useful if you want to exit your CAD software and use graphics or desktop publishing software that does not support the tablet, but does support the Microsoft Mouse. If you already have a Microsoft Mouse, the tablet's mouse emulation mode eliminates the inconvenience of disconnecting the tablet and connecting the mouse.

Copying the Mouse Driver Files

You must first copy the mouse driver files onto your hard disc before you can use the tablet in mouse emulation mode.

CAUTION

If you already have mouse driver files on your hard disc, note that these may not be fully compatible with this tablet. Make a backup copy of any mouse driver files on your hard disc before copying the new files from the disc provided with this tablet. If necessary, you can restore the old files later.

NOTE: The Mouse Driver disc supplied with this tablet is an original disc. Refer to your computer system's documentation for making a backup copy of the Mouse Driver disc. After you make a backup copy of the Mouse Driver disc, place the master disc in a safe storage area with your other original software discs. ■

Use the following instructions to copy the mouse driver files, MOUSE.COM and MOUSE.SYS, from the Mouse Driver disc (provided with the tablet) to your hard disc.

1. Insert the Mouse Driver disc into your floppy disc drive and close the drive door.
2. At your system prompt, enter the following command.

COPY f:MOUSE.* h:

(Where 'f' is the letter designation ('A' or 'B') of your floppy disc drive and 'h' is the letter designation (usually 'C') of your hard disk drive.)

Press the RETURN key. This copies the files MOUSE.COM, and MOUSE.SYS to your hard disc.

3. When the copy procedure is complete, remove the Mouse Driver disc and place it in a safe storage area.

Loading the Mouse Driver

If you are setting up the tablet for mouse emulation mode for the first time, use the following instructions. These instructions assume that you have not turned on your HP overlay's softkeys. **It is important that you follow the procedure as given below;** otherwise the mouse emulation mode will not function.

1. Turn off the tablet.
2. Turn on (up) configuration switches SW4-3 and SW4-4 on the back of the tablet.
3. Turn on the tablet. (The tablet reads the configuration settings only when the power is turned on.)
4. Press the `ON` button.
5. Press the mouse `ACTIVE` softkey *twice*.
6. From your computer keyboard, enter the command

MOUSE /C_n

(where 'n' is the number—1 or 2—of the COM port to which the tablet is connected) and press the `RETURN` key. Refer to the messages on your computer screen to determine whether the mouse driver is installed properly.

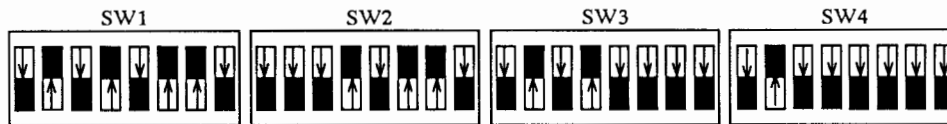
If the driver does not install properly, check that you followed steps 1—6 in the order given.

7. Load your software program. The software program will not recognize the mouse unless the mouse is properly installed.

Using SketchPro in Mouse Emulation Mode Only

Use the following instructions only when you will *always* use the tablet as a Microsoft Mouse. **Do not** use the following instructions if your software package supports tablets like the HP SketchPro, Summagraphics Bit Pad 2 (MM1103), or Hitachi HDG-1111B.

1. Refer to the following illustration and set the configuration switches on the back of the tablet as shown.



2. Load the mouse driver.

NOTE: You can automatically load the mouse driver each time you turn on your computer by placing a statement in either your AUTOEXEC.BAT or CONFIG.SYS file.

If you already have a mouse statement in either your AUTOEXEC.BAT or CONFIG.SYS file, you must edit the file so that the mouse statement is exactly like the statement given in this manual; otherwise, your mouse driver will not be installed and your tablet will not work.

Both methods are described below; use one method only. Use the method with which you are the most comfortable.

NOTE: When using either the AUTOEXEC.BAT or the CONFIG.SYS files to load the mouse driver automatically, be sure that you have set the configuration switches as shown above and turned the tablet on *before* you turn on your computer. ■

- To load the mouse driver from the AUTOEXEC.BAT file, place the following line in the batch file.

MOUSE /Cn

(where 'n' is the number—1 or 2—of the serial port to which the tablet is connected). For information on creating and/or editing batch files, refer to your computer documentation.

- Alternatively, to load the mouse driver from the CONFIG.SYS file, you can place the following statement in the file.

DRIVER=MOUSE.SYS/Cn

(where 'n' is the number—1 or 2—of the serial port to which the tablet is connected). For information on creating and/or editing batch files, refer to your computer documentation.

Refer to the messages on your computer screen to verify whether the mouse driver was properly installed. If the driver does not install properly, be sure you have specified the correct serial port in either the AUTOEXEC.BAT or CONFIG.SYS (depending on the method you chose).

A

Technical Information

This appendix contains the following technical information.

- functional specifications
- physical specifications
- environmental specifications
- cable schematics
- power module options
- configuration switch settings for emulation modes



Functional Specifications

Overall size	325 x 343 x 50 mm (12.8 x 13.5 x 2 in.)
Active area	278 x 278 mm (11 x 11 in.)
Resolution	maximum 48 lpmm (1219 lpi)
Accuracy	± 0.5 mm (0.02 in.)
Repeatability	± 0.25 mm (0.01 in.)
Proximity	2.5 mm (0.098 in.)
Jitter	none
Stylus tilt	any angle less than 90 degrees

Environmental Specifications

Temperature	-40° to 70° C, nonoperating 0° to 55° C, operating
Relative Humidity	15 to 95% relative humidity,
Shock	½ Sine shock pulse <3 ms duration 160 in./s Δ Velocity, nonoperating trapezoidal pulse, 30 g, 292 in./s Δ Velocity

Physical Size

Depth	343 mm (13.5 in.)
Width	325 mm (12.8 in.)
Height	50 mm (2 in.)
Weight	2 kg (4.4 lb.s)
Shipping Weight	3 kg (6.6 lb.s)

Power Specifications

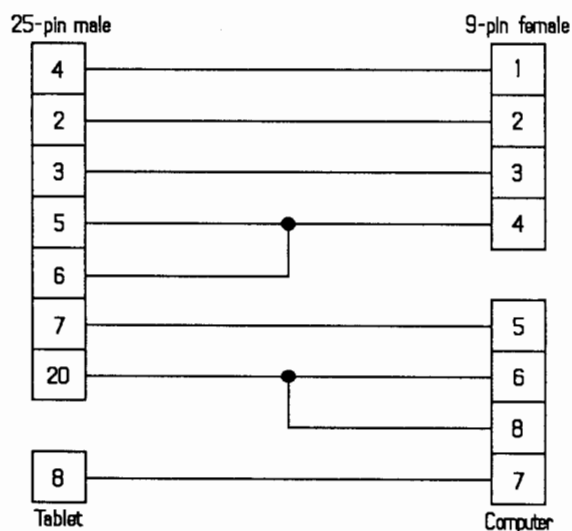
Source	100–120 V or 230–240 V, de- pending on the country
Frequency	60 Hz or 50 Hz depending on country
Consumption	4.1 watts

Cable Schematics

Two cables are supplied with SketchPro. Use the HP 45911-60009 cable to connect the tablet to the HP Vectra PC and IBM AT computers and their compatibles. Use both cables (45911-60009 and 45911-60007) when connecting the tablet to the IBM PC and PC-XT computers and their compatibles. Refer to Chapter 2 for more detailed interconnection instructions.

The HP 45911-60009 Cable

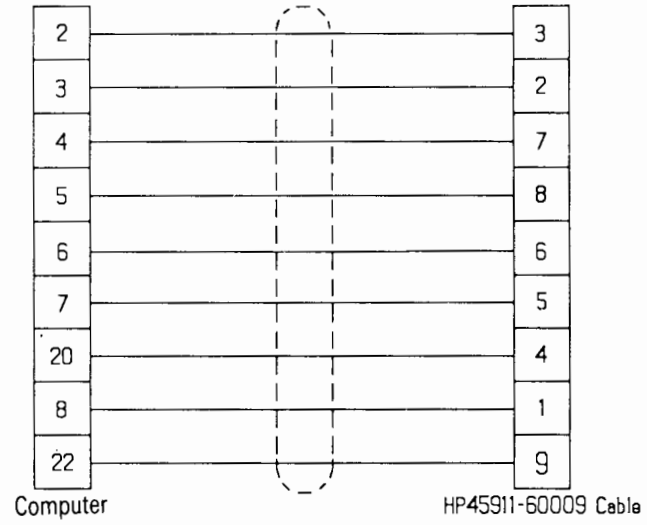
This is the only cable needed to connect the tablet to the HP Vectra PC and IBM AT computers and their compatibles. Connect the 9-pin female end to the computer. Connect the 25-pin male end to the tablet.



NOTE: This 1.5 meter cable is pin compatible with the 3 meter HP 24542G cable, available from your local HP dealer. ■

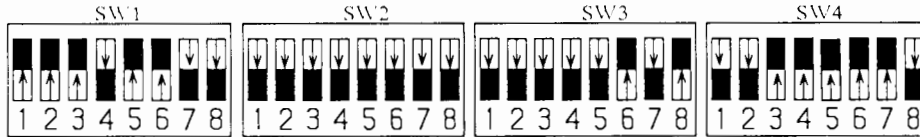
The HP 45911-60007 Adapter Cable

When connecting the tablet to the IBM PC and PC-XT computers, connect the HP 45911-60009 cable and HP45911-60007 adapter cable together, as shown in Chapter 2.



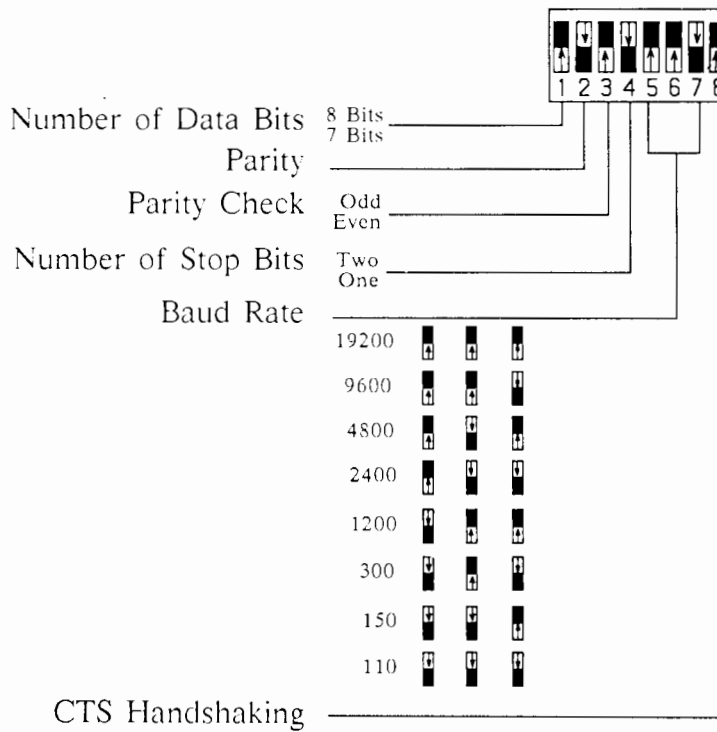
HP Mode Switch Settings

The following settings make the most use of the tablet's features. Refer to your software documentation to determine if these features are supported. Your software may require different switch settings than those shown here.



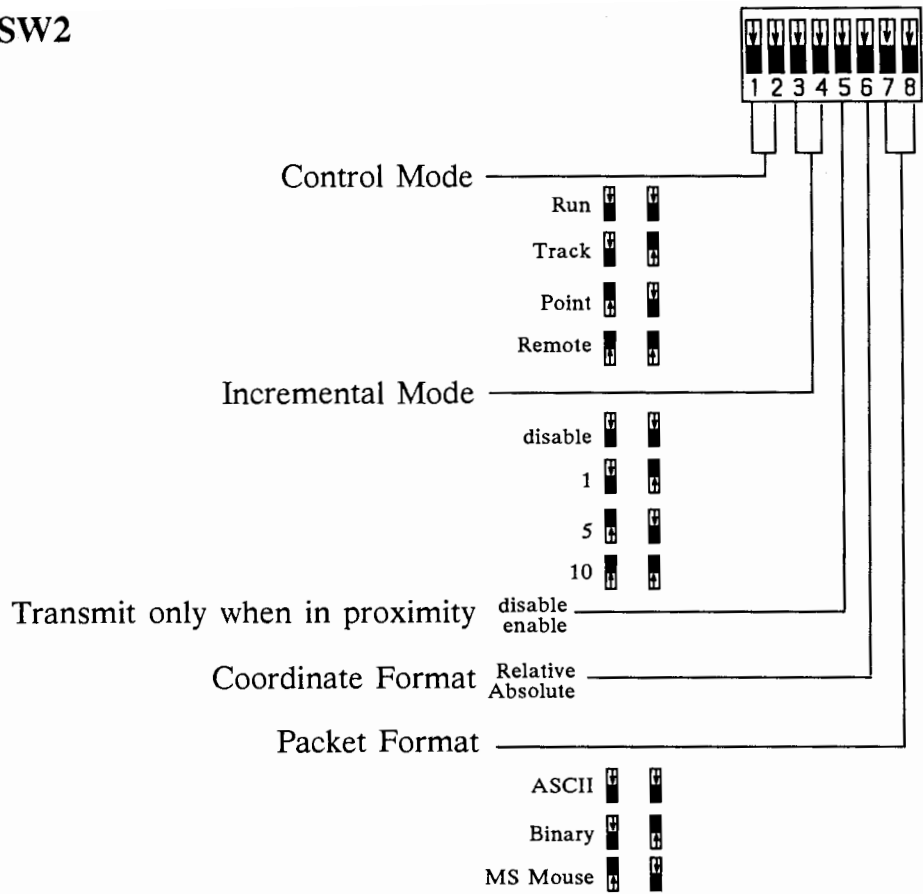
The following illustrations explain the switch settings in the Hewlett-Packard mode.

SW1



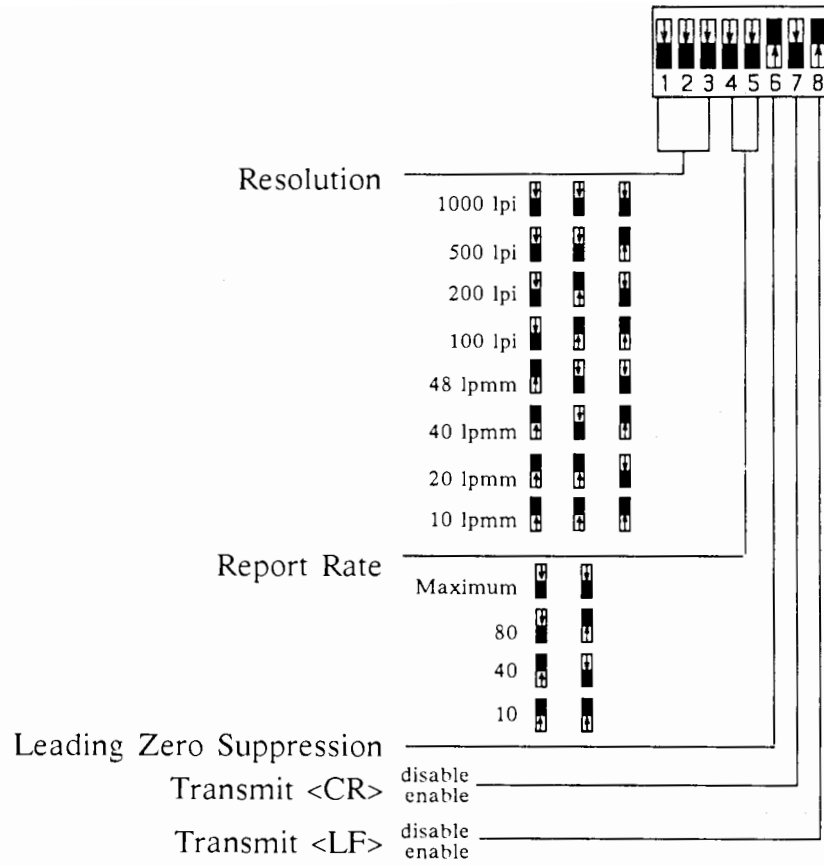
HP Mode Switch Settings

SW2

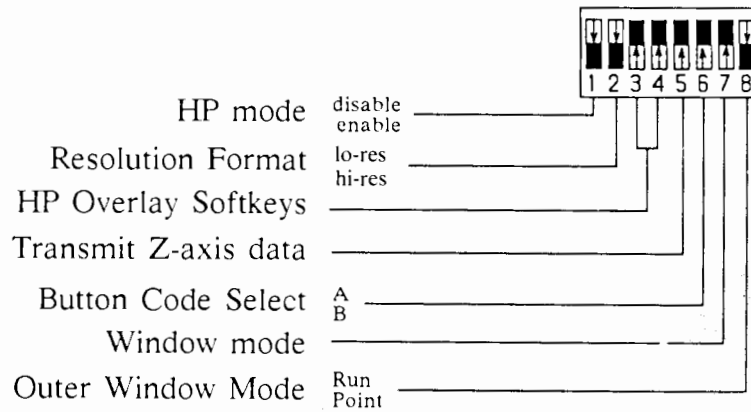


HP Mode Switch Settings (Cont.)

SW3



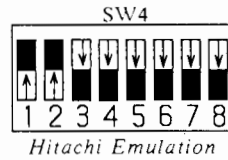
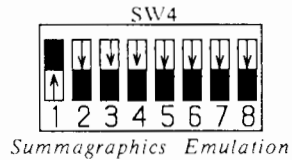
SW4



HP Mode Switch Settings (Cont.)

Emulation Mode Switch Settings

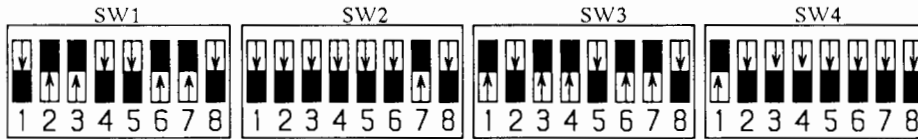
The SketchPro tablet can emulate a Summagraphics Bit Pad 2 (MM1103), Hitachi HDG-1111B, and a mouse. The emulation is determined by the positions of SW4-1 and SW4-2 on the back of the tablet as shown in the following illustration.



If your software package supports the HP SketchPro tablet, then set the switches according to your software documentation. The following sections show how to set the configuration switches for each of the tablets mentioned and describes each of the switches in the Summagraphics and Hitachi emulation modes.

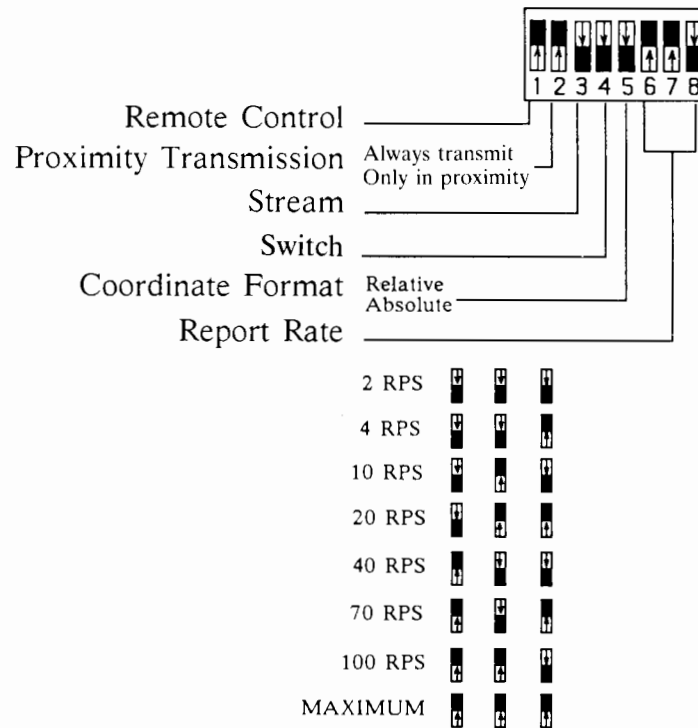
Summagraphics Bit Pad 2 (MM1103) Emulation

Use the following configuration switch settings to emulate a Summagraphics Bit Pad 2 (MM1103) tablet.



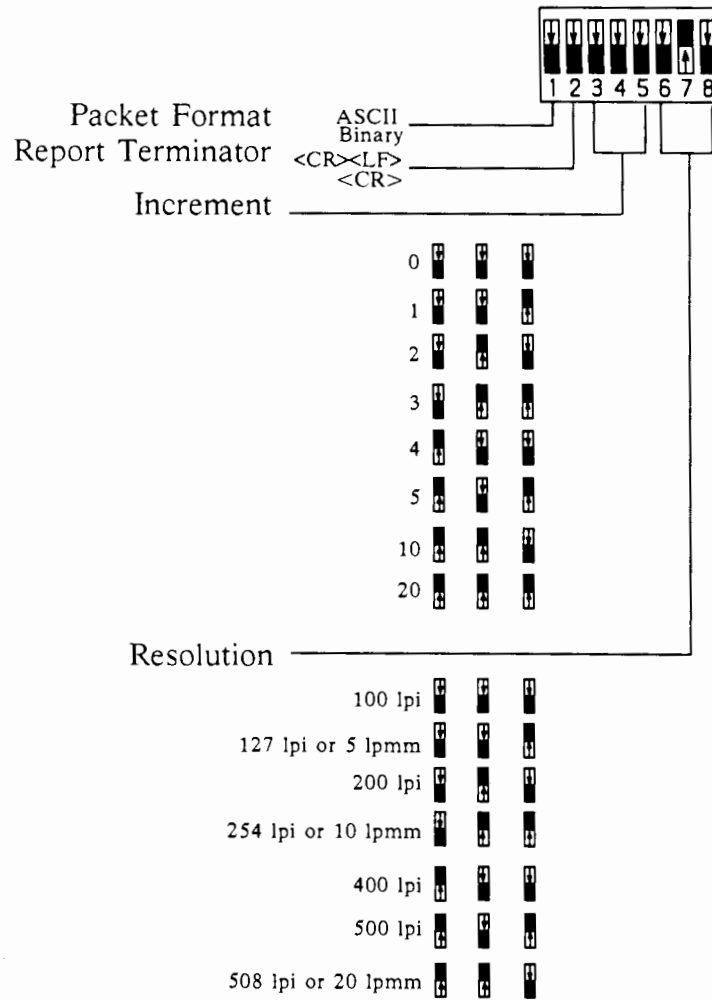
The following illustrations explain the switch settings in the Summagraphics Bit Pad 2 emulation mode.

SW1



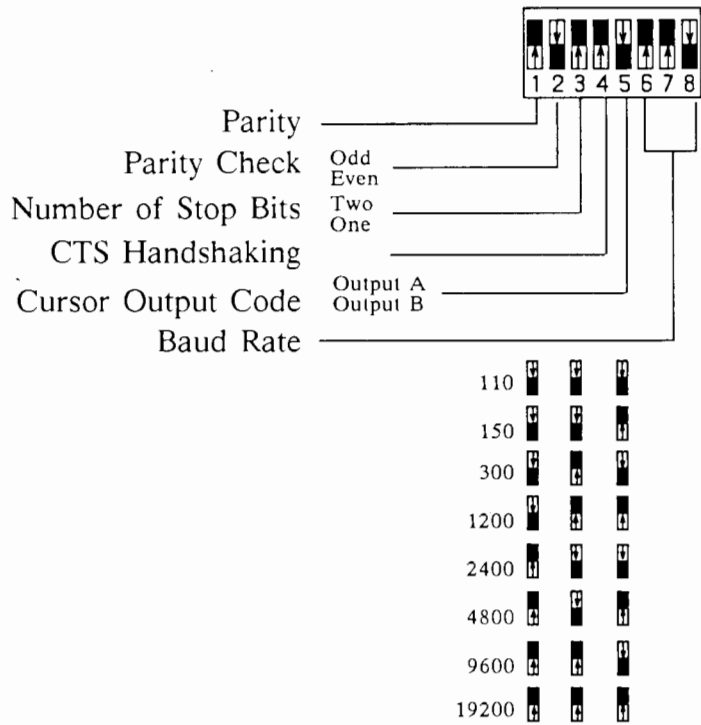
Summagraphics Bit Pad 2 Emulation Switch Settings

SW2

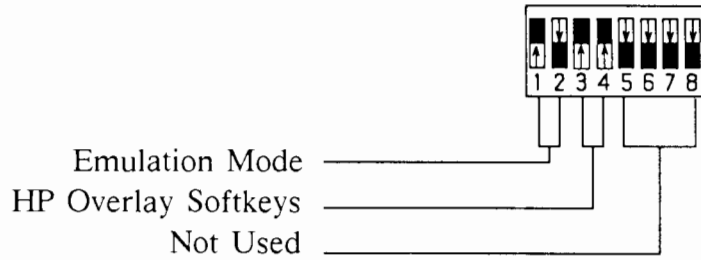


Summagraphics Bit Pad 2 Emulation Switch Settings (Cont.)

SW3



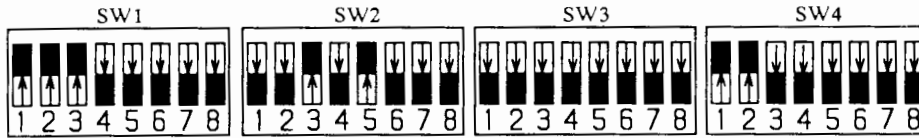
SW4



Summagraphics Bit Pad 2 Emulation Switch Settings (Cont.)

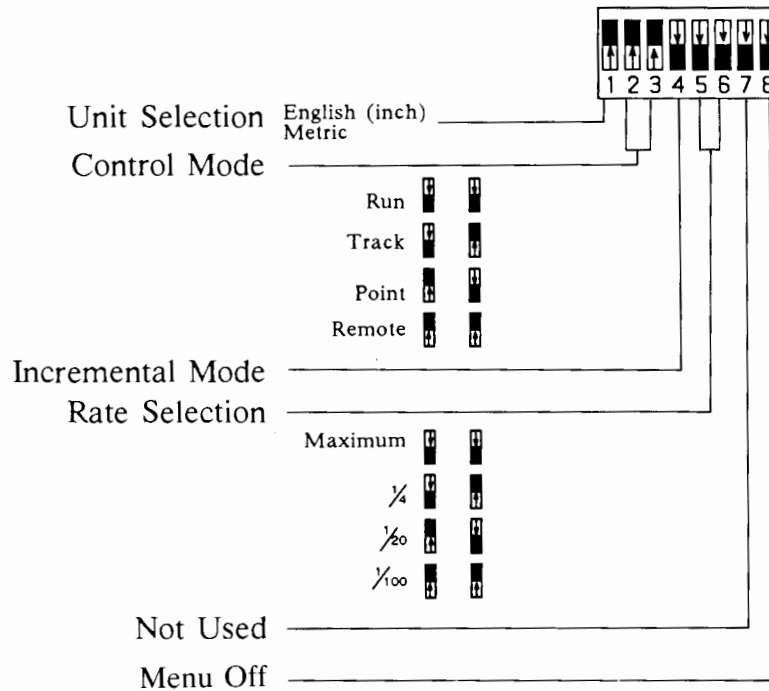
Hitachi HDG-1111B Emulation

Use the following configuration switch settings to emulate a Hitachi HDG-1111B tablet.



The following illustrations explain the switch settings in the Hitachi HDG-1111B emulation mode.

SW1

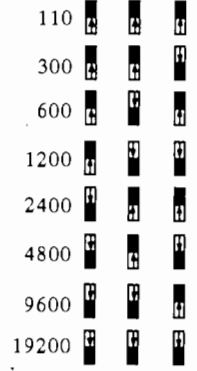


Hitachi HDG-1111B Emulation Switch Settings

SW2



Baud Rate



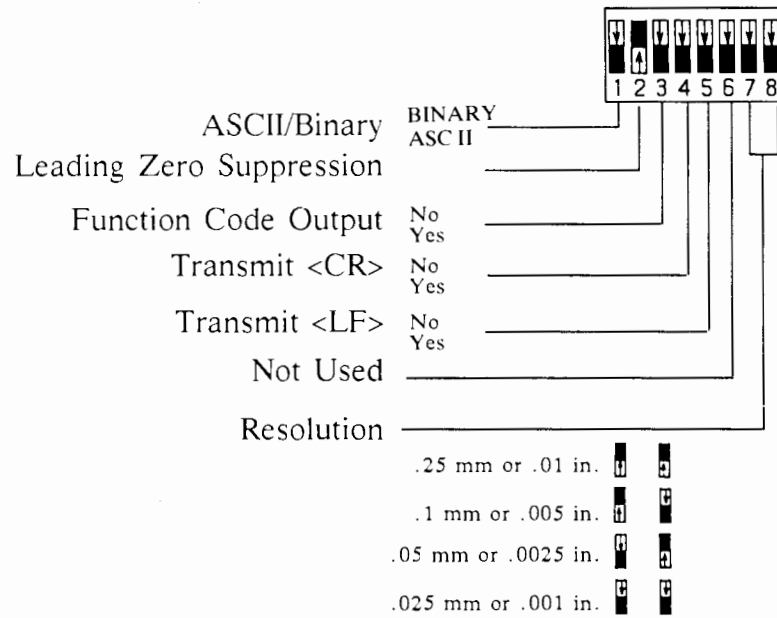
RS-232-C Word Composition



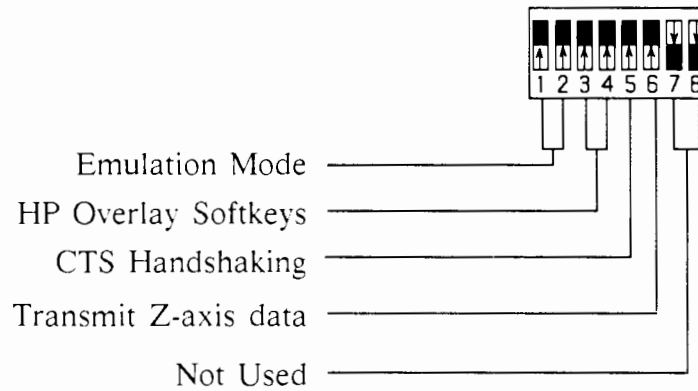
Off
Off

Hitachi HDG-1111B Emulation Switch Settings (Cont.)

SW3



SW4



Hitachi HDG-1111B Emulation Switch Settings (Cont.)

Mouse Emulation

Use the following configuration switch settings to emulate a mouse. Use these switch settings only when your software package does not support the HP SketchPro, Summagraphics Bit Pad 2 (MM1103), or Hitachi HDG-1111B tablets.



Note that you must first have installed the mouse driver files as described in Chapter 3. (The mouse driver files are located on the disc provided with the tablet.)

Glossary

Accuracy	Freedom from error; how closely the digitized point matches the physical location of the pointing device on the tablet.
Active Area	The area on the tablet that detects the position of the pointing device. The active area of SketchPro is the 11" X 11" portion defined by the inner border on the tablet's overlay.
Aspect Ratio	The ratio between a horizontal unit and a vertical unit on the screen.
Baud Rate	For an RS-232-C interface, the data transmission rate between a computer and a peripheral. Is sometimes, but not always, the same as bits per second.
Configuration	The way in which computer equipment and software is interconnected and set up to operate as a system. The tablet is configured using the switches on the back of the tablet. The software is configured to the tablet in the installation portion of the software.
Configuration Switches	The switches on the rear panel of the tablet that configure the tablet for different software programs.

Cursor	1. A position indicator displayed on the computer screen to indicate a location at which data is to be entered. 2. A mouse-like pointing device; a four-button cursor.
Data	The information which travels between various elements of a computer system.
Digitize	To convert x,y coordinate data to digital data, which is sent to the computer.
Driver	Configuration data used by software packages to control input and output between the computer and a peripheral device (e.g., a tablet).
Emulate	To imitate. For example, SketchPro can emulate a Microsoft Mouse.
Four-button Cursor	A pointing device used to draw or select menu items. On the device are four buttons that your software uses for preprogrammed functions. Your software may allow you to program some of the buttons for your own most-used functions.
Interface	1. To join components of a computer system so they function in a compatible manner. 2. A term applied to hardware used to do this (e.g., interface cable). 3. Standards that allow systems to connect to each other (e.g., RS-232-C interface).
Interface Cable	The data transmission cable used to connect a peripheral device to a computer. The cable's wiring depends on the computer, device, and interface standard (e.g., RS-232-C) being used.

Overlay	Software menu sheet for use on the tablet. Always cover the overlay with the overlay protector.
Parity	For RS-232-C, an error-checking method for information transfer between a computer and a peripheral device. Parity can be used to check the accuracy of a binary data byte (character).
Peripheral (device)	A device separate from, but used with a computer. For example, a tablet, plotter, or printer.
Pixel	A graphic unit as reproduced on the monitor. A means of expressing the resolution of the monitor (e.g., 640 x 350 pixels).
Platen	The flat surface of the tablet.
Pointing Device	The device which is used to draw or select menu items on the tablet (e.g., four-button cursor or stylus).
Repeatability	The ability of the tablet to report identical X,Y coordinates when the same point is digitized repeatedly.
Resolution	The smallest increment of pointing device movement that can be detected by the tablet, expressed in lines per inch (lpi) or lines per millimeter (lpmm).
RS-232-C Interface	A serial interface standardized by the Electronic Industries Association.
Serial Interface	A serial interface uses a single data line to transfer data bits sequentially between devices.

Softkeys

The top half inch of the HP overlay which is divided into twenty-two half-inch squares. Always cover the overlay with the clear protector.

Stylus

A pen-like pointing device used to draw. You can perform most CAD software functions by clicking the stylus. The phrase 'click the stylus' means that you should press the stylus against the platen until you hear and/or feel the internal stylus switch click. The software function you are performing determines when you should release the pressure on the stylus.

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**HEWLETT
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