

MINDSET

Operation Guide

Personal
Computer
System

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Introduction

Setting Up the Mindset
Personal Computer
System Unit

The System Keyboard

System Configuration

Section 1

Introduction

Welcome to the Mindset™ Personal Computer System.

This Operation Guide is your key to getting the most from your Mindset Personal Computer. By following the simple instructions in the guide, you will quickly be able to use the advanced features and capabilities of the Mindset Personal Computer to run programs for business, communication, education, and entertainment purposes.

How to Use this Guide

Including this introduction, this Operation Guide consists of seven sections, an appendix, a glossary, and an index. If you are a new computer user, we suggest that you read all seven sections in the order presented.

Section 2, "Setting Up the Mindset Personal Computer System Unit", helps you identify the system components and shows you how to attach them to the System Unit. This section also shows you where to connect any options you may have purchased with the system.

Section 3, "The System Keyboard", describes the keyboard, including the standard keys, the special keys, and where to attach input devices.

Section 4, "System Configuration", explains how to arrange or "configure" your system, including how to set up the system for either a television or a monitor and how to set other operation parameters.

Section 5, "Using Cartridges", describes cartridges and how to use them.

Section 6, "Enhancing Your System", lists some of the popular applications that your Mindset Personal Computer can perform and describes options and accessories you can use with your system.

Section 7, "Solving Problems", introduces you to some troubleshooting techniques to help you diagnose any problems you may encounter. Section 7 also includes a list of the error messages which the system may display during operation.

The appendix lists the system specifications. The glossary includes useful computer terminology.

Other Mindset Guides and Manuals

Mindset offers a number of system options for expanding your Mindset Personal Computer. Each option comes with its own operation guide to show you how to use that option with your Mindset Personal Computer.

Mindset also offers the MS™-DOS operating system as an option for the Mindset Personal Computer. This option comes with an introductory guide and a reference manual to help you learn MS-DOS quickly.

Documentation Conventions

To demonstrate a procedure or a program, this guide occasionally instructs you to type something on the keyboard. To distinguish between what you type and what the system may reply, what *you* type appears in **bold** letters.

Names of keys which appear in examples are shown in uppercase and are boxed, for example:

RETURN

When the instructions tell you to type something, make sure that you type all the characters and spaces as they appear. In addition, press the RETURN key after every line. (Do not type the word RETURN.)

For example, an instruction to type:

10 PRINT "Hello"; RETURN

means that you type 10, a space, the word PRINT, a space, and "Hello"; then press the RETURN key.



Section 2

Setting Up the Mindset Personal Computer System Unit

The modular design of the Mindset Personal Computer makes it easy to set up. This section shows you how to prepare the components of your system for operation.

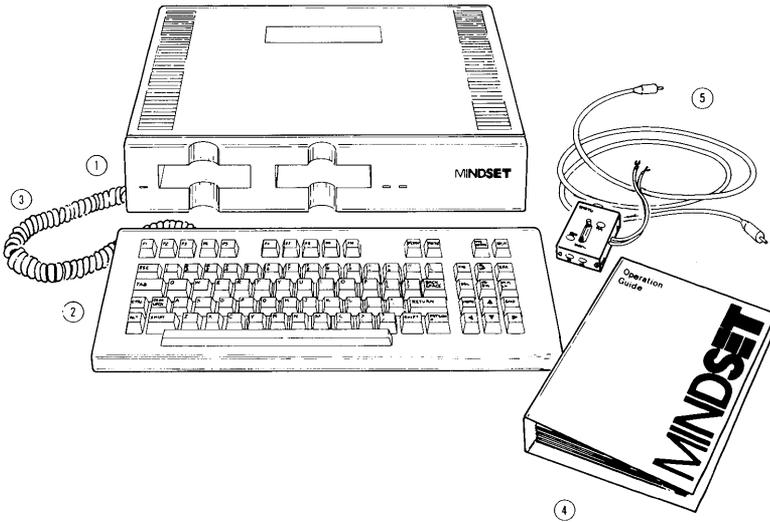
Identifying the System Components

The heart of your Mindset Personal Computer is the System Unit. Included with the System Unit are a keyboard and a keyboard cable, an antenna switch box, and a cable for connecting the System Unit and the antenna switch box to a television.

Before you connect any of the components, check Figure 2-1 to ensure that you have received each of these items:

Note: If you purchased any options for your Mindset Personal Computer, install those options after you set up the System Unit. Section 5, "Using Cartridges", describes how to install cartridges; Section 6, "Enhancing Your System", explains how to install modules.

Because you may need to transport your system, save the packing materials that your system came in.



1. System Unit
2. Keyboard
3. Keyboard cable (coiled)
4. Operation Guide
5. Antenna switch box and cable

Figure 2-1: Components of the Mindset Personal Computer

Plugging In Your System

The compact size of your Mindset Personal Computer makes it easy to place anywhere in your home or office. However, keep these considerations in mind:

1. Place your system on a level surface with enough room around the system to provide adequate air circulation.
2. Locate your system near a power outlet.

Note:

- The power outlet should not be a switched outlet.
 - When you turn the system off, it must remain plugged in to the outlet to maintain the correct time on its internal clock and to recharge the batteries in the cartridges.
3. The System Unit comes with an integral power cord attached to the rear of the unit. After you have located a place for your System Unit and keyboard, plug the power cord into the outlet.

Setting Up the System Keyboard

The System Keyboard is designed to be connected to the System Unit directly by a cable.

When you first set up your system, attach the keyboard to the System Unit. Attaching the keyboard cable enables the System Unit and the keyboard to communicate.

Attaching the System Keyboard

Locate the keyboard cable. Then find the keyboard cable connector at the left rear corner of the keyboard, and insert one end of the cable into this connector. Because the connectors on both ends of the cable are identical, it doesn't matter which end of the cable you attach first.

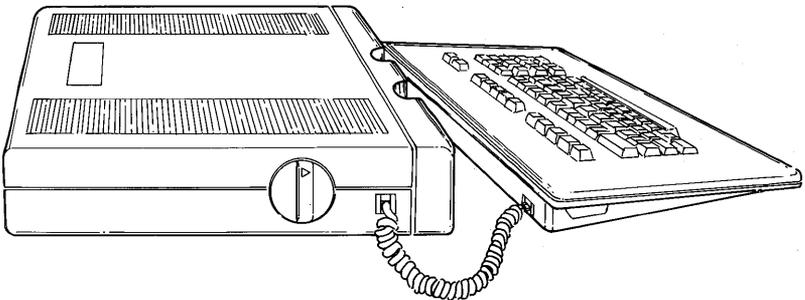


Figure 2-2: Keyboard cable attached to the keyboard and the System Unit

Insert the other end of the cable into the keyboard connector at the left side of the System Unit. Figure 2-2 shows the proper attachment of the keyboard cable to the two cable connectors.

Identifying the Front-Panel LEDs and Cartridge Ports

The front panel of the System Unit has three indicator lights (LEDs) and two cartridge ports (see Figure 2-3).

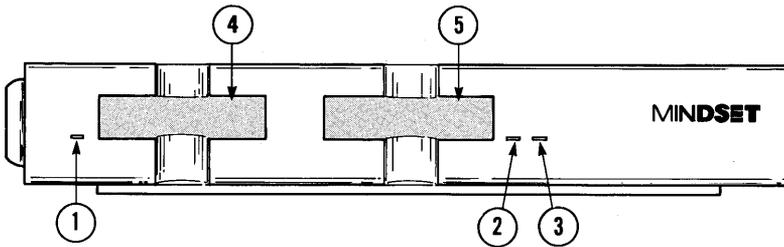


Figure 2-3: Front panel of the System Unit

The indicator LEDs have the following functions:

- Left This red LED (1 in Figure 2-3) lights when you turn on the system; it remains on as long as the system stays on.
- Center This yellow LED (2 in Figure 2-3) lights at different times depending on the application software used. It generally indicates that the system requires some attention from you. For example, a lit yellow LED light might mean that there is a message waiting for you.
- Right This green LED (3 in Figure 2-3) is also application dependent. It generally indicates that the system is performing a task or process. For example, the green light might be programmed to come on while your system is actively communicating with another system.

You insert the cartridges into the two cartridge ports. Cartridge port 1 (4 in Figure 2-3) is on the left and cartridge port 2 (5 in Figure 2-3) is on the right. See Section 5, "Using Cartridges", for a description of their use.

Identifying the Back-Panel Connectors

The back panel of the System Unit contains ports and connectors for input/output (I/O) options. With these I/O ports and connectors you can expand and enhance your system. They enable the system to accept information from you or another device (input) or to transmit information to another device (output).

The following list describes the I/O ports and connectors found on the back of the System Unit. Refer to Figure 2-4 for the location of these ports and connectors.

I/O Module Ports

Double-width I/O module port—Accepts a double-width module, such as the Modem Module 1200, or two single-width modules.

Single-width I/O module port—Accepts single-width modules such as the RS-232-C Module, the Printer Interface Module, or the Stereo Sound Module.

Connectors

AC cord—Provides power to the System Unit.

AUDIO LEFT—Connects to an amplifier for audio output.

COMP VIDEO connector—Connects to a composite video monitor for black-and-white or color video display.

TV/RF connector—Connects to a color TV for color video display and sound.

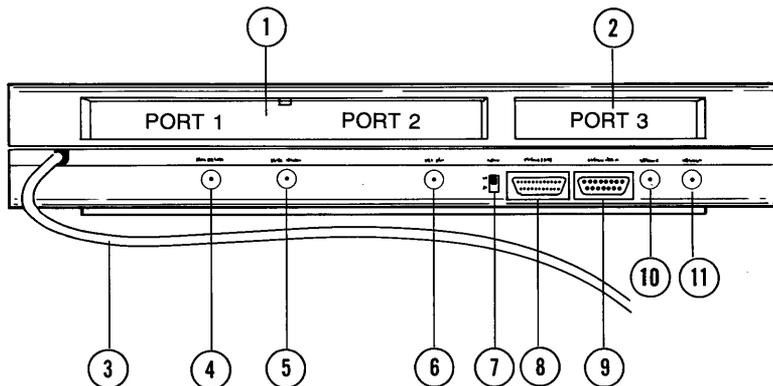
CHAN 3/4 switch—Enables you to select either channel 3 or 4 for video display on a TV.

RGB VIDEO connector—Connects to an RGB (red, green, blue) monitor for color video display.

EXT SYNC connector—For future enhancement options.

AUX IN connector—For future enhancement options.

AUX OUT connector—For future enhancement options.



- | | |
|---------------------------------|------------------------|
| 1. Double-width I/O module port | 7. CHAN 3/4 switch |
| 2. Single-width I/O module port | 8. RGB VIDEO connector |
| 3. AC cord | 9. EXT SYNC connector |
| 4. AUDIO LEFT | 10. AUX IN connector |
| 5. COMP VIDEO connector | 11. AUX OUT connector |
| 6. TV/RF connector | |

Figure 2-4: Back-panel connectors and I/O module ports

Attaching a Display Device to the System Unit

You can connect your Mindset System Unit to a television set, to an RGB monitor, or to a composite video monitor.

Before connecting your system to a TV set, you must first determine whether your antenna cable is the flat 300-ohm type or round 75-ohm coaxial-type cable.

Connecting the System Unit to a 300-Ohm TV Input

To connect the Mindset System Unit to a 300-ohm TV input, follow these procedures:

1. Attach one end of the TV cable to the TV/RF connector on the back panel of the System Unit (1 in Figure 2-5).
2. Attach the other end of the cable to the antenna switch box connector marked "COMPUTER" (2 in Figure 2-5).

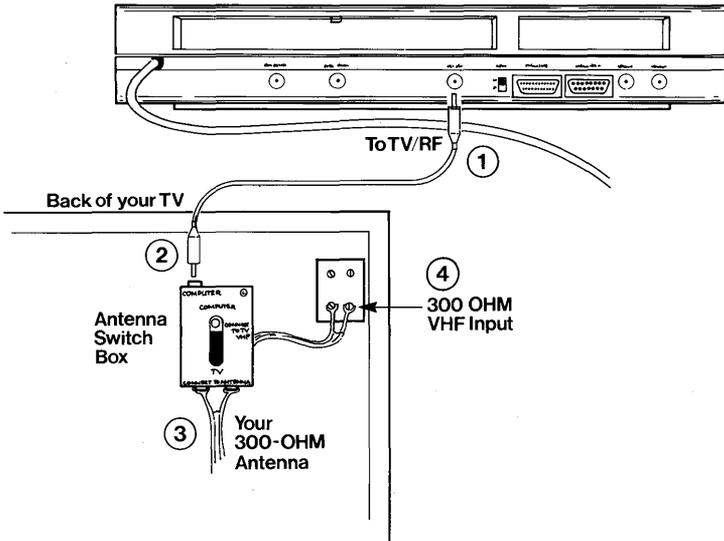


Figure 2-5: Connecting the System Unit to a 300-ohm TV input

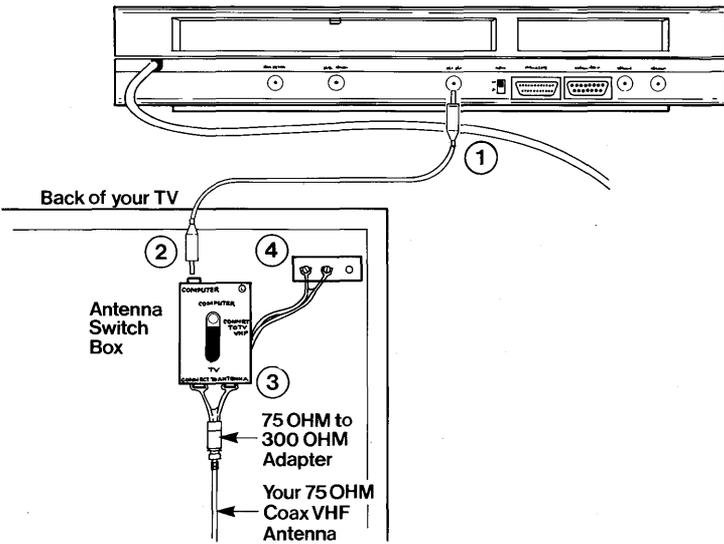


Figure 2-6: Connecting the System Unit to a 75-ohm TV input

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3. Next, disconnect the VHF antenna from your TV set.
 4. Connect your flat twin-lead 300-ohm antenna cable to the screw terminals on the switch box (3 in Figure 2-5).
 5. Connect the output cable of the antenna switch box, marked "TV", to the VHF antenna terminals on your TV set (4 in Figure 2-5).
 6. Set your TV VHF tuner to either channel 3 or 4. Select channel 4 unless there is a local channel 4 in your area. Otherwise, select channel 3.
 7. Set the CHAN 3/4 switch on the back panel of the System Unit to the TV channel you selected (3 or 4).

Connecting the System Unit to a 75-Ohm TV Input

To connect the System Unit to a 75-ohm TV input, follow these procedures:

1. Attach one end of the TV cable to the TV/RF connector on the back panel of the System Unit (see 1 in Figure 2-6).
2. Attach the other end of the cable to the antenna switch box connector marked "COMPUTER" (2 in Figure 2-6).
3. Next, disconnect the VHF antenna from your TV set.
4. To connect your 75-ohm coaxial cable to the switch box, you need a 75-ohm coaxial to 300-ohm twin-lead adapter (3 in Figure 2-6). This adapter is available from your TV or electronics dealer. Screw the round coaxial 75-ohm antenna cable into the 75-ohm connector on the adapter.
5. Next, connect the flat twin-leads of the adapter to the screw terminals on the switch box.
6. Connect the output cable of the antenna switch box, marked "TV", to the VHF antenna terminals on your TV set (4 in Figure 2-6). If your TV does not have a 300-ohm twin-lead connector, you need to use a 300-ohm to 75-ohm adapter to connect the switch box to your TV. This adapter is available from your TV dealer.
7. Set your TV VHF tuner to either channel 3 or 4. Select channel 4 unless there is a local channel 4 in your area. Otherwise, select channel 3.

8. Set the CHAN 3/4 switch on the back panel of the System Unit to the TV channel you selected (3 or 4).

Connecting the System Unit to an RGB Color Monitor

Your dealer can direct you to the correct video cable you need to purchase for your RGB monitor.

To connect the System Unit to an RGB monitor, follow these steps:

1. Insert one end of the video cable into the video input connector on your monitor.
2. Insert the other end of the video cable into the RGB VIDEO connector on the back panel of your System Unit (1 in Figure 2-7).

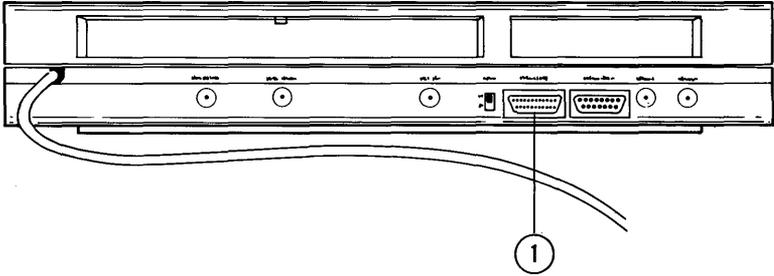


Figure 2-7: Connecting the video cable

Connecting the System Unit to a Composite Video Monitor

Your dealer can direct you to the correct video cable you need to purchase for your composite video monitor. If your composite video monitor is equipped with a built-in speaker, you may also need to connect a second cable to carry the audio signals. Your dealer can supply the proper cable.

To connect the System Unit to a composite video monitor, follow these steps:

1. Attach one end of the composite video cable into the video input connector on your monitor.

2. Attach the other end of the video cable into the COMP VIDEO connector on the back panel of your System Unit (1 in Figure 2-8).
3. If you need to connect an audio cable to your monitor, attach one end of the cable to the audio input connector on your monitor. Then attach the other end of the cable to the AUDIO LEFT connector on the back panel of your System Unit (2 in Figure 2-8).

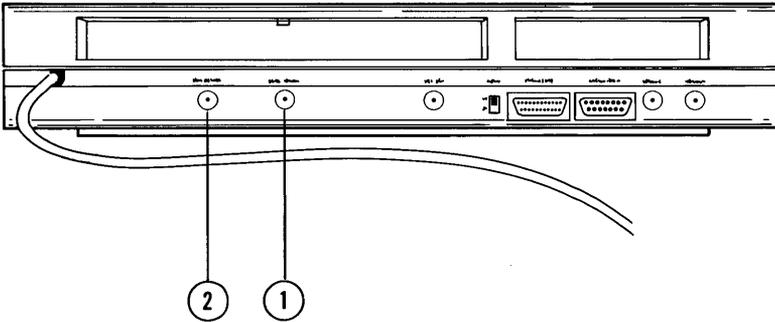


Figure 2-8: Connecting the composite video cable

Turning On the System Unit

After you have attached the keyboard and a monitor or TV to the System Unit, turn on the monitor or TV. You are now ready to turn on your system.

The ON/OFF power switch for the System Unit is a horizontal rocker switch located at the right rear corner of the keyboard.

Press the switch to the ON position indicated by a red dot, to power up the System Unit. The red indicator LED on the front of the System Unit lights up.

Note: The yellow and green indicator LEDs do not light up at this time (refer to Figure 2-3).

Attention: You must wait 5 seconds after turning off the power before you power up the system again.

Next, the Mindset power-up screen appears (see Figure 2-9).

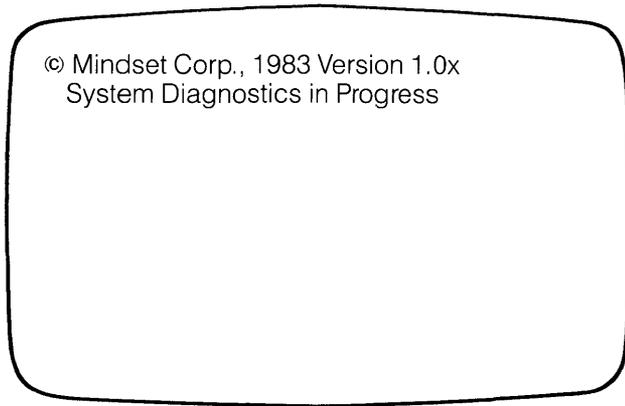


Figure 2-9: The Mindset power-up screen

After several seconds, the three-dimensional Mindset logo appears. Then, after 10 to 15 seconds, the logo begins to rotate.

The power-up screen and the logo screen indicate that the System Unit has successfully completed a series of self-diagnostics and is ready for operation.

If the red indicator LED does not light up, the power-up or logo screens do not appear, or another message appears, refer to Section 7, "Solving Problems", for a summary of troubleshooting techniques.

The next section of this guide introduces you to the Mindset Keyboard. When you become acquainted with the keyboard, you can proceed to Section 4, "System Configuration", which explains how to set some operating characteristics before you begin using the Mindset Personal Computer.



Section 3

The System Keyboard

The System Keyboard is your primary means of communicating with the system. Its low-profile design enables you to rest your hands in a comfortable position.

Getting Acquainted with the Keyboard

The Mindset Personal Computer Keyboard looks much like the keyboard of a typewriter (see Figure 3-1).

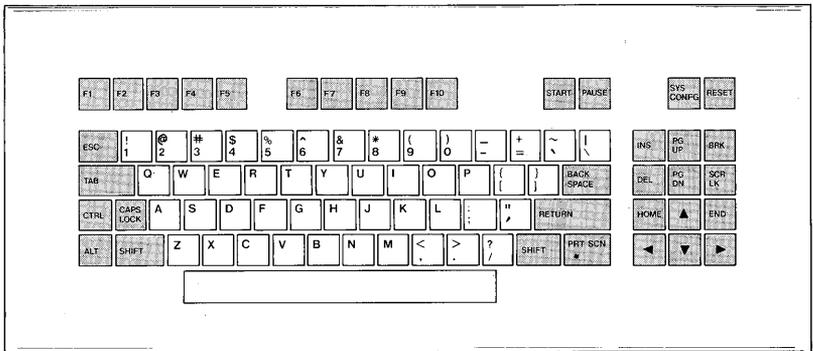


Figure 3-1: The Mindset Keyboard

Many of the keys have the same function as typewriter keys; other keys have special functions on the Mindset Personal Computer, some of which depend on the software you are using. This feature enables the keyboard to be "customized" for a particular application, making the program easier to operate.

Standard Keys

The following keys work like typewriter keys:

ALPHABETIC AND NUMERIC KEYS

These keys appear in the same positions and operate the same as they do on a standard typewriter keyboard.

SPACE bar

Produces a space character.

RETURN

Tells the system to enter into the system memory the line of information you just typed, and to position the cursor at the beginning of the next line. Some application programs refer to this key as ENTER or use the  symbol

SHIFT

Produces uppercase letters, special characters, and upper symbols.

CAPS LOCK

Affects alphabetic keys only. Pressing the CAPS LOCK key causes the keyboard to produce uppercase characters for all alphabetic keys. Pressing this key a second time causes the alphabetic keys to again produce lowercase characters. When pressed, this key stays depressed until you press it again.

BACK SPACE

This key enables you to move the cursor to the left one character at a time to erase one or more characters you just typed. Some application programs use the  symbol to refer to this key.

TAB

Moves the cursor to the right several character positions. Some application programs use the symbol  to refer to this key.

Special Keys

The following keys are system keys and are unique to a personal computer keyboard.



When pressed along with the ALT key, the SYS CONFIG (system configuration) key causes the Mindset Personal Computer to display the configuration menu on the screen, from which you select the system operating parameters or characteristics.



When pressed along with the ALT key, the RESET key tells the system to load a program from a cartridge or disk.

Whenever you are instructed to press the RESET key, always press the ALT key at the same time.



The PRT SCN (print screen) key produces a *. When pressed with the SHIFT key, the PRT SCN key copies the text displayed on the screen to the system printer.

The following six keys are called cursor control keys. You use these keys to move the cursor around the screen. Their operation is application dependent. That is, the function of each key depends on the program you are using.



Moves the cursor up one line.



Moves the cursor down one line.



Moves the cursor right one character.



Moves the cursor left one character.



Moves the arrow to the top left corner of the screen.



Moves the arrow to the bottom left of the screen.

The following keys are also application dependent:



The CTRL (control) key performs a specific command or function when pressed with another key, depending on the program you are using. You use this key like the SHIFT key. You hold it down while you press another key.



The ALT (alternate shift) key performs a specific command or function, depending on the program you are using. Hold it down while you press another key such as SYS CONFIG and RESET.

ESC	The ESC (escape) key performs a specific command or function, depending on the program you are using.
START	Begins the operation of certain programs.
PAUSE	Temporarily halts the operation of certain programs.
INS	The INS (insert) key enables you to insert characters without overwriting existing text.
PG UP	The PG UP (page up) key displays the preceding page of text on the screen.
BRK	The BRK (break) key halts program operation.
DEL	The DEL (delete) key deletes a character.
PG DN	The PG DN (page down) key displays the next page of text on the screen.
SCR LK	The SCR LK (scroll lock) key performs functions defined by the program you are using.

Like some electric typewriters, some of the keys on the keyboard have a repeat-action function. That is, if held down, the key generates that character continuously. The following keys have a repeat-action function:

Alphabetic and numeric keys

BACK SPACE

PRT SCN
*

SPACE bar



Attaching Input Devices to the System Keyboard

The System Keyboard is your primary input device. In addition, you may want to use other input devices with your system depending on the software you are using.

The System Keyboard has connectors on each side to enable you to attach input devices such as a mouse or a joystick.

Attaching other input devices is easy. Simply insert the cable from the device into either of the connectors on the right or left side of the keyboard (see Figure 3-2).

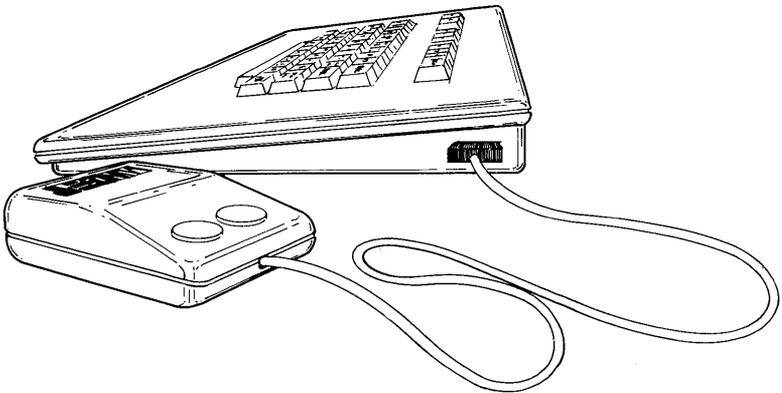


Figure 3-2: Right-hand input device connector with a mouse attached



Section 4

System Configuration

You use system configuration to set several different system parameters and to “tailor” aspects of the system’s operation to your needs. For example, you can choose the following parameters:

- Monitor or television operation.
- The ON or OFF status of the audio prompt or “beeper”.
- The order (“load priority”) in which the system tries to access a program from the cartridges or a diskette.
- The screen orientation for operation with a television or monitor.
- The time and date for the system clock.

Once you set the configuration parameters, the selections you make are retained for as long as the system remains plugged in or until you modify them. Turning off the Mindset Personal Computer won’t change these selections.

Viewing the Configuration Screen

Pressing the SYS CONFIG key along with the ALT key causes the system to display the configuration screen (see Figure 4-1). This screen contains a menu from which you select different parameters.

The HOME key moves the arrow back to the first selection on the menu. You can press this key at any time.

Selecting Television or Monitor Display Mode

Your system sends different color information to an RGB monitor than to a TV or composite video monitor. You need to “tell” your system what type of display device you are using.

When the configuration screen first appears, the arrow is at the first line, the “TV/Monitor/Beeper” line. This line enables you to select the video display option and the ON/OFF mode of the speaker. If this is the first time you are configuring your system, “TV” (the default for this item) appears highlighted.

If you connected your System Unit to a TV or a composite video monitor, then “TV” is the correct selection. If you connected your system to an RGB monitor, press the SPACE bar. “Monitor” appears highlighted. Pressing the SPACE bar toggles between “TV” and “Monitor” selections. When you have the correct selection highlighted, press the RETURN key to advance to the “Beeper” selection.

Turning the Beeper On or Off

The Mindset Personal Computer has extensive sound generation capabilities. The output can be played through the speaker in your television or monitor (if it is equipped with a speaker), or through an amplifier connected to the AUDIO LEFT connector on the back of the System Unit.

In addition, the Mindset Personal Computer has a built-in “beeper” available for application programs that issue audio prompts or warnings to users. If your system is not connected to an external speaker (through a TV, a monitor with a speaker, or the AUDIO LEFT output), the audio prompts issued by application programs can be generated through the beeper.

To turn the beeper on, press the SPACE bar until “ON” appears next to the word “Beeper”. If your system is connected to an external speaker

and you do not need the beeper, press the SPACE bar until the word "OFF" appears.

Now press the RETURN key to move the arrow to the next parameter on the configuration screen, the Program Load Priority.

Setting the Program Load Priority

The system can use programs from any of three sources: a cartridge in port 1 or port 2, or a diskette in a disk drive (part of the Mindset Expansion Unit). The second line of the configuration menu enables you to select the "load priority" for programs. The load priority defines the order in which the system will access a program from cartridge ports and disk drives.

The default load priority is:

1. Use a program from cartridge port 1 if possible.
2. Use a program from cartridge port 2 if there is no cartridge in port 1.
3. Use a program from the diskette in the left-hand drive if there are no cartridges installed in the cartridge ports.

If you load programs primarily from cartridge port 2, then you should specify cartridge port 2 as the first device in the program load priority. If you then place a diskette-based program in the disk drive and press RESET, the system checks the highest-priority device (cartridge port 2) first before it tries to load the program from the disk drive.

To practice changing the priorities, make sure that the arrow is positioned under the number just before the words "Cart 1". Use the RETURN key if necessary to reposition the arrow.

Next, press the SPACE bar until the chosen priority (1, 2, or 3) shows above the arrow.

Press RETURN to position the arrow under the number just before the words "Cart 2". Press the SPACE bar until the chosen priority (1, 2, or 3) shows above the arrow.

The priority for cartridge 2 may be either of the two priorities not selected for cartridge 1. The diskette is automatically assigned whatever priority wasn't selected for cartridges 1 and 2.

In most cases, the default setting will work best. You may want to start off using the default setting so that the load priority is cartridge 1 first, cartridge 2 second, and diskette third. It's easy to change later if you need to.

Adjusting the Screen

Sometimes the display on a TV or monitor screen is not properly aligned, resulting in the display being skewed to the right or left, or high or low.

You can use the cursor keys (▲, ▼, ►, ◀) to center the display within the surrounding border on a TV or monitor screen for maximum visibility.

To center the screen, press RETURN, which positions the arrow to the left of the words "Adjust Screen Position". Then use the cursor keys to move the screen up, down, left, or right.

When the screen position is satisfactory, press the RETURN key to move to the Date and Time field. (If you do not wish to reset the date and time, press the RESET key to exit from the configuration screen.)

Setting the Date and Time

Your system has its own internal clock which, once set in the configuration menu, keeps track of the date and time. Some application programs take advantage of this convenient feature.

Use the RETURN key to position the arrow below the item to be set on the date and time line (called the "Time" line on the screen). Then use the cursor keys to change the values of the items. Notice that the time clock stops when you position the arrow below any item on the Time line. This feature enables you to set a new date and time precisely.

The first item on the Time line is the day of the week. To set the day of the week, press the ▲ or ▼ key. A three-letter abbreviation for each of the seven days appears as you press these keys.

Next, press the RETURN key to move to the date. The month, day, and year appear as 01/01/01. Press the ▲ or ▼ cursor key until you see the current month. Press RETURN again to move to the day of the month and use the cursor keys to change this number. Repeat this procedure for the year value.

Press RETURN again to move the cursor to the time values. The values for hour, minutes, and seconds started as 01:01:01. Use the RETURN and ▲ and ▼ keys to set these values.

Last, press RETURN to position the cursor under am or pm. Use the ▲ or ▼ cursor key to change these values.

Press the RESET or RETURN key to complete setting the date and time.

Until you move the arrow away from the Time line, the date and time remain fixed. Therefore, as soon as you set the time, press the RETURN or RESET key.

Note that the Mindset Personal Computer does not check that the date set falls on the day of the week selected or that there is such a date in the month selected (for example, February 30th).

The Power Fail Message

The words "Power Fail" in the lower right corner of the configuration screen tell you that the system has lost AC power since it was last used. This message means that the date and time settings are probably inaccurate and that the system has returned to the default values for the other configuration settings. Therefore, you need to reset the configuration settings to the desired values and to update the date and time.

Quantity of RAM Addressed

The configuration screen also indicates how much system RAM (Random-Access Memory) is being addressed. The number in the lower left corner of the screen shows how many thousand bytes of RAM are being addressed at any time. It is an easy way to verify that your system is addressing all available RAM.

Using Cartridges

Enhancing Your System

Solving Problems

Specifications

Section 5

Using Cartridges

Cartridges are an integral part of your system. They are a convenient way to add software to the system and can also be used to store your own programs and data.

Types of Cartridges

There are several types of cartridges. The following types of cartridges are available for your system:

ROM Cartridges

ROM stands for Read-Only Memory. These cartridges contain pre-programmed software. ROM-based programs extend your system's memory and save it for more flexible operation. The GW BASIC language cartridge is a ROM cartridge. You can't erase information from ROM cartridges.

NVRAM Cartridges

NVRAM cartridges contain Non-Volatile Random-Access Memory. The RAM in your System Unit is volatile and loses its information when you turn off the power. An NVRAM cartridge enables you to retain information when you turn off the power because the cartridge contains a small battery. An NVRAM cartridge provides less storage room than a diskette, but it is more convenient to use for some applications. You can change or erase information in NVRAM cartridges.

ROM/NVRAM Cartridges

These cartridges combine application software in ROM with NVRAM so that you can store data. For example, a telecommunications cartridge might have application software in ROM as well as NVRAM where you could store frequently dialed telephone numbers or access codes.

Inserting and Removing Cartridges

Before you can insert a cartridge into a cartridge port in the System Unit, you need to remove the port protector from the port. Installed before shipment, these port protectors shield the cartridge ports from dust and foreign objects. Retain these protectors to protect the cartridge ports from foreign objects and to give your system a more complete look when you aren't using cartridges.

Your System Unit is equipped with a unique latching device that securely locks both cartridges in place and ensures a good connection. This latch is located on the left side of the System Unit.

To remove a cartridge or a port protector, turn the cartridge latch counterclockwise to the unlocked position (see Figure 5-1) and pull the cartridge or port protector out. You should not attempt to remove a cartridge or port protector without unlocking the cartridge latch.

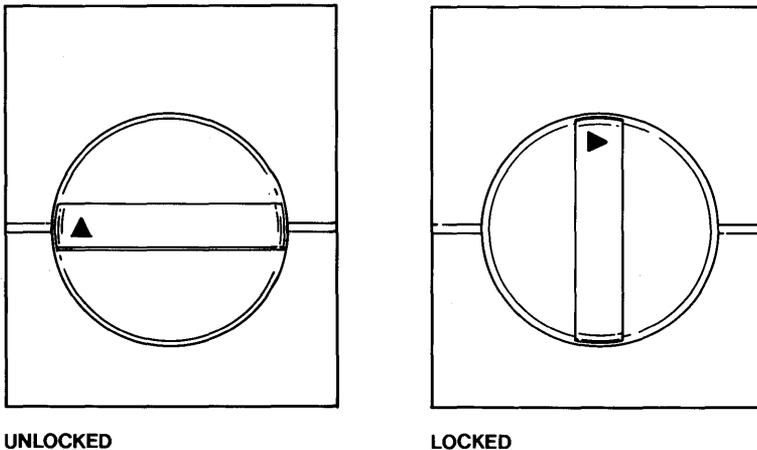


Figure 5-1: Cartridge latch in unlocked and locked position

To insert a cartridge, follow these three steps:

1. Hold the cartridge with the label facing up and your thumb in the round thumb depression.
2. Slide the cartridge into the port until the cartridge is flush with the front panel of the System Unit (see Figure 5-2).

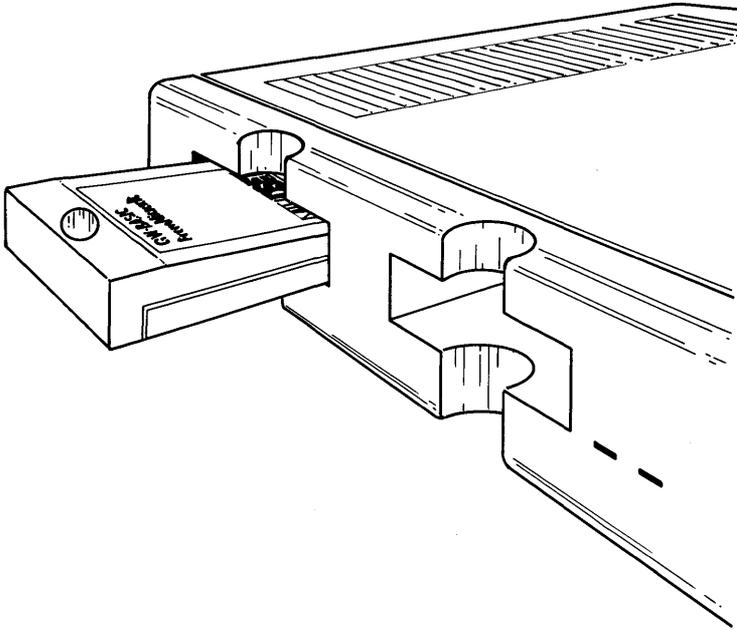


Figure 5-2: Inserting a cartridge

Note: Do not try to force the cartridge into the cartridge port if the cartridge latch is in the locked position. You may damage the cartridge or internal mechanisms of the cartridge port.

3. Turn the cartridge latch clockwise to the locked position (see Figure 5-1).

To remove a cartridge, first turn the system off. Turn the cartridge latch to the unlocked position and pull the cartridge out. Never attempt to remove a cartridge without unlocking the cartridge latch.

Note that you can insert cartridges when the system power is on. However, the system should be turned off before removing cartridges.

Using the Dual-Cartridge Capability

The System Unit contains ports for two cartridges. You may wish to use two cartridges at once for some applications. For example, you can insert the GW BASIC cartridge in the left port (port 1) and an NVRAM cartridge in the right port (port 2). Then, when you finish entering and editing your BASIC program, you can store it on the cartridge in port 2.

Section 6

Enhancing Your System

There are a number of ways you can expand and enhance your system's capabilities. The modular design of the Mindset Personal Computer makes this easy to do. In addition, this design gives you the capability to adapt your system for specific tasks.

Enhancement Options

Figure 6-1 shows an example of a system that has been enhanced with several options.

The following is a list describing some of the enhancements available for the Mindset Personal Computer:

Expansion Unit—Increases system memory, provides additional module ports, and includes one or two disk drives for additional data storage.

RS-232-C Interface Module—Provides the communications capability to connect the Mindset Personal Computer to printers, plotters, and other serial-interface devices.

Printer Interface Module—Enables the Mindset Personal Computer to support an industry-standard parallel-interface printer for hard-copy output.

Modem Modules—Combined with telecommunications software, enable you to access other computer systems and information utilities.

Stereo Sound Module—Adds a second audio channel which, together with the built-in audio channel, enables the Mindset Personal Computer to produce stereo sound.

Non-Volatile RAM (NVRAM) Cartridges—Provide a convenient, interchangeable data-storage medium.

These and other options come with documentation which you can conveniently place under the OPTIONS tab of this guide.

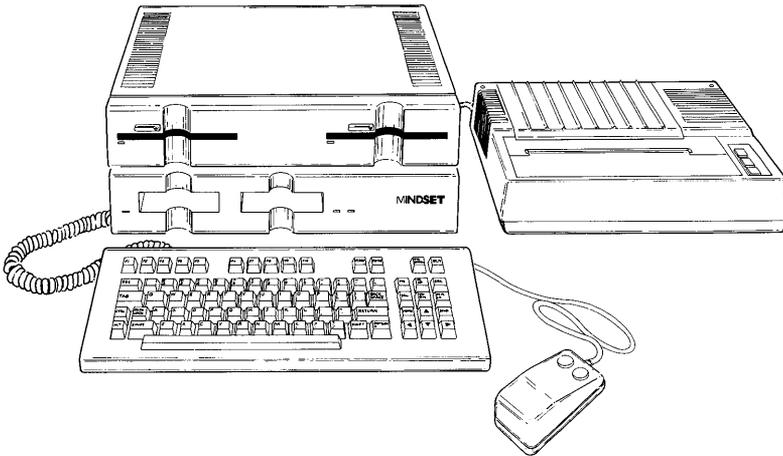


Figure 6-1: An enhanced Mindset Personal Computer System

Using Modules

The easiest way to expand your system is by using System Modules. System Modules are single- or double-width plastic enclosures that contain the interface circuitry necessary to connect your system to other devices (see Figure 6-2). Modules can be easily inserted into the back of your System Unit or the optional Expansion Unit.

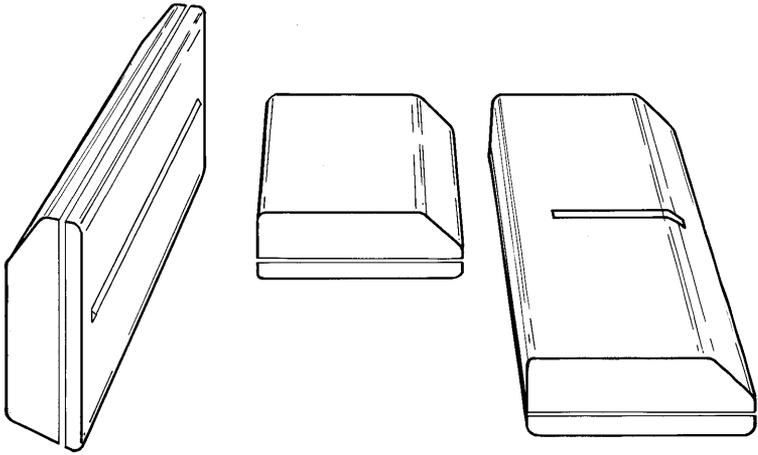


Figure 6-2: Single-width and double-width System Modules

A connector along the narrow edge of the module joins with the circuitry inside your system when you plug the module in. An I/O connector on the rear edge of the module receives a cable from an external device (peripheral).

Installing and Removing System Modules

Inserting modules is very easy. To install a module, follow these five steps:

1. If the System Unit is on, turn it off.
2. Using a screwdriver or knife edge, remove the plastic module port protector (see Figure 6-3). You can insert a single-width module into ports 1, 2, or 3 (1, 2, and 3 in Figure 6-3) or one double-width module into ports 1 and 2.

Note: Don't discard the port protector. Keep it in a safe place with your other system accessories. Replace the port protector if you remove the module for any reason. The port protector shields the module port from dust and small objects.

3. Insert the module into the module port, the narrow edge first (1 in Figure 6-4), so that the module label faces down (2 in Figure 6-4).

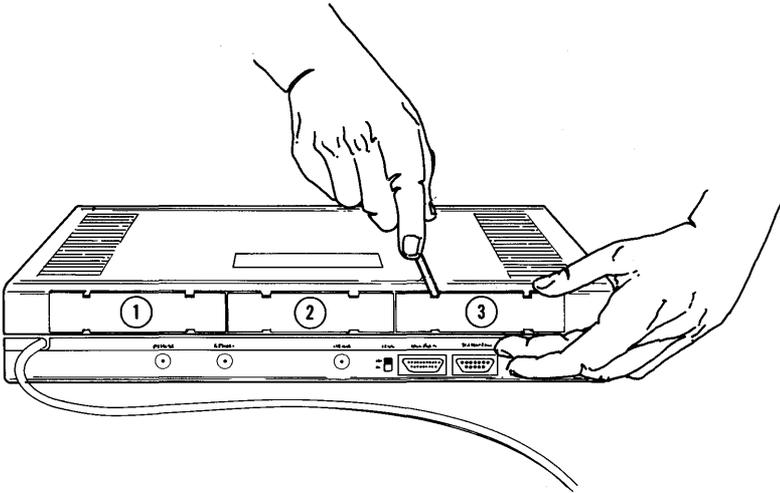


Figure 6-3: Removing the module port protector

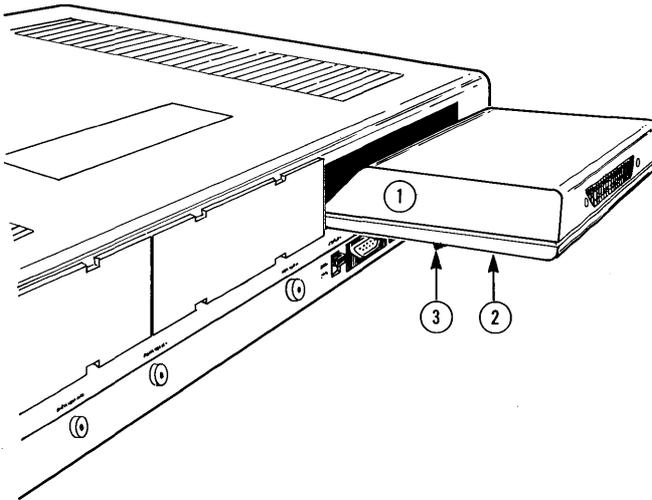


Figure 6-4: Inserting a System Module

Gently push the module until the plastic lip (3 in Figure 6-4) on the bottom of the module snaps into place.

4. Next, attach the device cable for whatever peripheral device you want to connect to your system.
5. Turn on the system.

To remove a module, follow this procedure:

1. Turn off the System Unit.
2. Disconnect the device cable from the module.
3. Remove the module by gently lifting the module and pulling it out of the port.
4. Replace the module port protector.



Section 7

Solving Problems

With proper care and handling, your Mindset Personal Computer should give you trouble-free operation. However, when problems do occur you can use the procedures below to identify many of the sources of the problems yourself. This section also includes system error messages that may appear on your video screen.

Diagnosing Your Problems

The following section lists some of the problems that may occur during operation of the System Unit. Try all the suggestions listed before you contact your dealer for assistance.

The Red LED Doesn't Light on Power-Up

1. Check that you plugged the power cord on the System Unit into a working wall outlet.

Note: Do not plug the System Unit into a switched outlet. A switched outlet could be inadvertently turned off.

2. Ensure that you connected the keyboard cable to both the keyboard and the System Unit.
3. Look at the ON/OFF rocker switch at the back of the keyboard. The switch should be in the ON position (the red dot should be pushed in).

No Picture on the Display

1. Check the display power cord.
2. Check that the System Unit power cord is plugged in and that the keyboard cable has been properly connected.
3. Ensure that the ON/OFF switch is ON.
4. Check for proper connection of the video cable (see the procedures for attaching a TV or monitor to the System Unit in Section 2, "Setting Up the Mindset Personal Computer System Unit").
5. If you connected a TV, check the antenna switch box for the proper TV and antenna cable connections. Also check that the TV is turned on and is tuned to the correct channel.
6. Make sure you moved the switch on the antenna switch box to the "COMPUTER" position.

No Response to Keyboard Input

1. Check that the red LED on the front of the System Unit is lit.
2. Check your monitor or TV for the proper connections to your System Unit (see Section 2, "Setting Up the Mindset Personal Computer System Unit").

ON/OFF Switch Has No Effect

1. Unplug the system from the AC outlet and wait 5 to 10 seconds before plugging the system back in.
2. Turn the system on.

Interference on a Television from a Nearby TV Station

Set the CHAN 3/4 switch on the back of the System Unit to the other channel (3 or 4), and be sure to change the television station selector to the new channel (3 or 4).

The Mindset Logo Screen Appears After You Install a ROM Cartridge

1. Make sure the cartridge is flush with the front of the System Unit.
2. If you can't insert the cartridge all the way into the cartridge port, make sure the cartridge latch is unlocked, and try inserting the cartridge again.

-
3. Make sure you turn the cartridge lock to the locked (clockwise) position after inserting a cartridge.
 4. Press the RESET key.

Inoperable Peripheral

1. Check that you plugged the power cord on the System Unit into a working wall socket.
2. Make sure that you plugged the peripheral into a working socket and that the peripheral has been properly connected to the module. Consult the operation guide for the peripheral to determine if you connected it properly.

System Error Messages

An error message indicates that your system has encountered a problem while performing a test or function. If one of the following error messages appears on your video screen your system may still be operable. Press any key to continue. If your system does not operate, contact your dealer for assistance.

System RAM Test Failed

System ROM Test Failed

Bad Cartridge in Slot "x"

Display RAM Test Failed

Expansion RAM Test Failed

System Timer Test Failed

DMA Controller Test Failed

Printer Module Test Failed

RS-232-C Module Test Failed

continued on next page

System Error Messages, *cont.*

Real Time Clock Test Failed

Modem Module Test Failed

Graphics Coprocessor Test Failed

Display Processor Test Failed

Appendix

Specifications

Physical Characteristics

Width	16.0 inches
Depth	12.2 inches
Height	2.8 inches
Weight	Approximately 6.0 pounds

The System Unit can support up to 25 pounds.

Power Requirements

Voltage	110 VAC
Power requirements	50 watts

Functional Characteristics

CPU	Intel 80186, 16 bit microprocessor
System RAM	64K bytes (32K processor RAM, 32K graphics RAM)
System ROM	32K bytes

Keyboard

Width	16.0 inches
Depth	7.0 inches
Angle of inclination	9 degrees
Weight	Approximately 3.0 pounds

Glossary

Glossary

Application dependent—Determined by the software program being used. The functions of several keys on the Mindset Personal Computer are application dependent.

BASIC—An acronym for Beginner's All-purpose Symbolic Instruction Code. BASIC is the programming language most frequently used with personal computers.

Baud—The speed in bits per second that information is transported across communication channels. You can usually divide the baud rate by 10 to calculate the equivalent number of characters per second.

Bit—An abbreviation for binary digit. A bit is a unit of information that equals one (1) or zero (0).

Byte—A basic unit of information that a computer processes. A byte represents approximately 1 character and consists of 8 bits.

Cartridge—A plastic enclosure containing memory circuits which store programs or data.

Command—An instruction used to tell a computer to start, stop, or continue an operation.

Composite video monitor—A television monitor that takes a composite video signal as input. A composite video signal combines the video information and synchronization signals so that they can be carried along a single coaxial cable. A composite video monitor can be either black-and-white or color.

Cursor—A position indicator such as a blinking square that appears on the TV or monitor to indicate where the information you type next will appear.

Data—A general term for information that can be processed by a computer.

Default—The choice of options a computer makes when not instructed otherwise.

Disk drive—A device which moves across the surface of a diskette to read and record information.

Diskette—A magnetic recording medium that stores information for fast retrieval. The Mindset Personal Computer uses 5¼-inch diskettes.

Disk operating system (DOS)—A disk-based program that controls hardware and software operations in a computer.

File—A collection of information stored under a specific name.

Function keys—The reprogrammable keys on a keyboard. By pressing one or more of these keys, you can issue more than one command so that your computer can perform specific functions, depending on the applications software program used. The function keys on the Mindset Keyboard are labeled F1 through F10.

Hardware—The electric, electronic, and mechanical equipment that is part of a computer, including external devices such as printers and monitors.

Input—The information that the computer receives for processing.

I/O—An abbreviation for input/output. I/O refers to interface devices that transmit information to and from a computer.

Joystick—An input device consisting of a lever that can be tilted in different directions to tell the computer to move an object displayed on a TV or monitor.

LED—An abbreviation for light-emitting diode. An LED is an indicator light that informs you of how a device is operating.

Load—The entering of information to the computer memory from an external storage device such as a diskette or a cartridge.

Load priority—The order in which the computer checks different storage devices to find a program which it can use.

Macro—A group or string of frequently used instructions or commands that can be accessed by a single command.

Memory—A device into which you can copy and store information, and from which you can retrieve the information at a later time.

Modem—A device that converts computer signals into tones and converts tones back into signals. This device enables computers to communicate with each other over telephone lines.

Mouse—A small, hand-held input device that you move around on your desk to control the position of the cursor or other objects displayed on a TV or monitor.

NVRAM—An acronym for Non-Volatile Random-Access Memory. The Mindset NVRAM cartridge contains this type of memory. It is termed non-volatile because the information stored on the cartridge is retained in memory by a battery within the cartridge.

Output—The information that a computer sends to external devices connected to it (for example, a monitor, printer, plotter, or telephone). Output also refers to the results of programs.

Parallel communication—The transmission and reception of data in groups of bits, each group representing a character.

Parameter—A specific value or characteristic that determines how a component performs.

Peripheral—An external input or output device that can be connected to a computer.

Program—A set of instructions telling a computer how to solve a problem or perform a task.

RAM—An acronym for Random-Access Memory. Information in RAM is not permanent. That is, RAM can not only be “read”, but it also can be “written” into and erased. (Compare with ROM and NVRAM.)

RGB monitor—A color monitor that takes separate red, green, and blue (hence RGB) signals to create color images on the screen.

ROM—An acronym for Read-Only Memory. Information in ROM is permanent and can be “read” but not altered or erased. Mindset ROM cartridges contain this type of memory. (Compare with RAM and NVRAM.)

RS-232-C—An Electronic Industries Association (EIA) standard interface for transmitting encoded information. (See serial communication.)

Sector—A portion of a track on a diskette.

Serial communication—The transmission and reception of characters one bit at a time.

Software—The programs that are used with a computer.

Syntax—The rules governing the statement structure of the programming language instructions presented to a computer.

Track—A single circle in the pattern of concentric circles on a diskette that is written on or “read” by a disk drive.

Utilities—A group of “housekeeping” programs provided with an operating system as standard software. These programs perform duties such as program checking, file editing, and word processing.

Write-protect—A means of preventing information from being written onto a storage medium. A diskette can be write-protected by the placement of foil tape over the write-protect notch in the protective cover.

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PURCHASER REGISTRATION

Name _____

Occupation _____ Phone _____

Address _____

City _____ State _____ Zip _____

Date of purchase _____ Serial number _____

Store name and city _____

Is your computer owned by:

Self Company Other _____

I learned about this product through:

Dealer Advertisement
 Another User Other _____

I use my Mindset Personal Computer for:

Office Home and Office Other _____
 Home School _____

I also own the following Mindset options:

- Expansion Unit
- RS-232-C Module
- Printer Interface Module
- Modem Module 1200
- Modem Module 300
- Stereo Sound Module
- NVRAM Cartridge

Clip, fold, seal with tape, and mail this form to us. Your cooperation is greatly appreciated.

(Please tape; postal regulations prohibit the use of staples.)

Place
stamp
here

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