ATARI® XE™ SYSTEM

Owner's Manual

IMPORTANT INFORMATION

The ATARI XE game system uses and produces radio frequency energy. If not installed and used according to the instructions in this manual, the equipment may cause interference with your radio and TV reception.

If you experience interference while using the equipment, switch it off. If interference stops, the equipment is probably at fault. With the equipment switched on, try to correct the problem using the following measures:

• Adjust the position of the radio or TV antenna.
• Reposition the equipment in relation to the radio or TV.
• Move the equipment away from the radio or TV.
• Plug the equipment into a different electrical outlet so the equipment and radio or TV are connected to separate branch circuits.

Consult your Atari dealer or an experienced radio-TV technician for additional suggestions.

A helpful resource is *How to Identify and Resolve Radio-TV Interference Problems*, prepared by the Federal Communications Commission and available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

WARNING: This equipment is certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of the FCC rules. These rules are designed to provide reasonable protection from interference when the equipment is used in a residential setting. However, there is no guarantee that interference will not occur in a particular home or residence. Only those computing devices that are certified to comply with the Class B limits may be attached to this equipment. Operation of noncertified devices with this equipment is likely to result in interference with radio and TV reception. Shielded cables (except the Atari joystick, light gun, and keyboard cables) must be used on all I/O connectors; otherwise, radio emissions may exceed Class B limits.

ⅯATARI®

ATARI® XE™ SYSTEM

Owner's Manual

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INTRODUCTION

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Welcome to the ATARI XE Game System!

The ATARI XE game system is made for you, the serious game player. Its expansive memory capability (64 kilobytes) easily handles the most exciting and complicated games with a variety of great action features. And you can control the game any way you want—with a joystick, Trak-Ball®, light gun, mouse, or from the keyboard. The XE comes with two game controller ports so you can share the fun with a friend (or opponent).

The XE game system starts you out with Missile Command™, its own built-in game. As a bonus, the system also contains the programming language ATARI BASIC™ in ROM, its permanent memory. With the XE keyboard connected to your system, you can access BASIC and begin writing your own computer programs.

Once you become familiar with your XE, you'll want to expand your system with a number of peripherals. By attaching a disk drive you'll be able to store the programs you write with BASIC, or the documents you create with other programs. Adding a printer or modem to your system lets you publish your work and take advantage of outside databases, bulletin boards, and other computers. And don't forget the large library of cartridge, disk, and cassette games available to you once you have the add-ons.

The ATARI XE game system is compatible with most software and hardware from both the ATARI XE and ATARI XL™ computer lines.

Using This Manual

Operating your XE game system is easy, and you'll get the best results if you connect and operate it correctly from the start. This manual explains how to do that in clear, nontechnical language.

Chapter 1: Getting Started explains how to set up your system and begin using it. Later sections of the chapter tell you how to expand your system by adding peripheral devices.

Chapter 2: Helpful Information tells you how to maintain your system in top operating condition, and what to do in case of problems. XE game system owners in the United Kingdom should refer to the additional set-up instructions in this chapter when connecting their systems.

Index helps you locate terms and procedures explained in the manual.

Paragraphs marked **Note** or **Warning** appear throughout the manual. Notes contain useful hints and other information relevant to the topic being discussed. Warnings alert you to potential problems and suggest ways to avoid them.

CHAPTER 1
GETTING STARTED

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Setting Up Your XE System

Your ATARI XE game system should be set up in a roomy work-space that's both healthy for the system and enjoyable for you. When setting up your system, choose a location that has a sturdy, level surface close to an electrical outlet. There should be plenty of room for airflow around the XE console and your video display (either a color TV or color monitor). Don't set up the system where it will be exposed to dust, grease, extreme temperatures, direct sunlight, or high humidity. An environment that works well for a TV or stereo system should suit your XE game system just fine.

Take a moment to look at your XE console. The top of the console holds the [Power] key, four function keys, the cartridge port, and an air vent.

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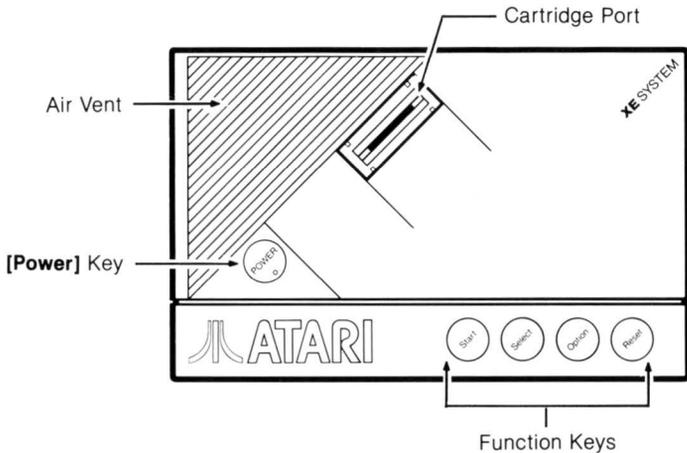
The right side of the console holds the game controller ports; the left side contains the keyboard port.

Right Side   **Left Side**
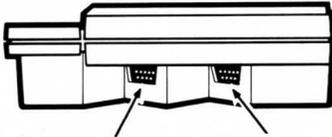
👆 Controller Port 1 👆 Controller Port 2   Keyboard Port
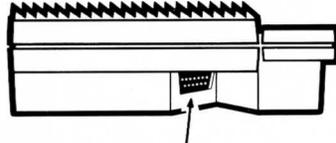
The XE console's back panel contains the connectors for attaching a video display device (either a TV or monitor). It also holds the power jack and the SIO port for connecting peripherals.

TV Channel Selector   ⎓ Power Jack

2 3

👆 Monitor Audio Jack   👆 TV Jack

👆 Monitor Video Jack   SIO Peripheral Port
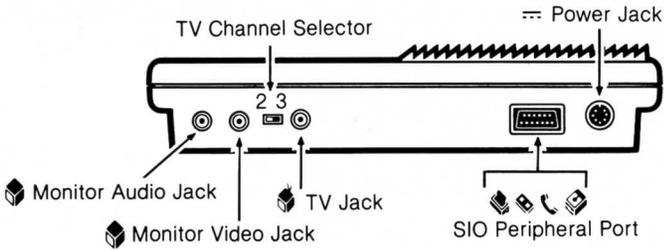
To connect a monitor, follow the instructions in the manual supplied with the monitor. To connect a TV, follow the instructions in the next section.

Connecting the TV Switch Box

Note: The TV Switch Box may not be included in the XE SYSTEM sold outside The United states.

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If you're using a TV as your video display, you'll need to connect the TV switch box supplied with your XE game system. Follow these steps:

1. Disconnect your present VHF antenna cable or cable TV line from the VHF terminal on the back of your TV.

2. If the cable or line has a flat twin-lead connector, attach it directly to the screw terminals on the bottom of the TV switch box. Use a flat-bladed screwdriver to secure the leads to the switch box.

   If the cable or line has a round screw-on connector, attach it to an adapter and then attach the adapter to the screw terminals on the bottom of the TV switch box. (You can buy an adapter at most TV and electronics stores.)
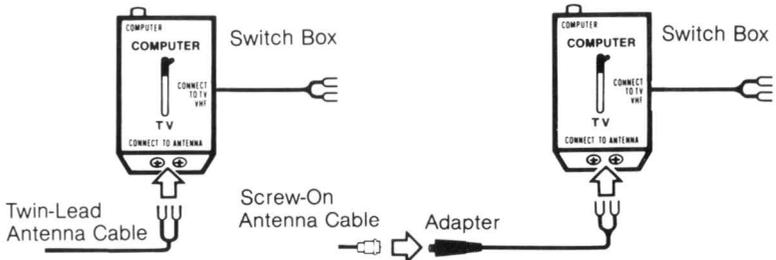
3. Connect the switch box's twin-lead cable to the VHF terminal on the back of your TV. If the VHF terminal has two screws, attach the switch box cable directly to the screws, using a flat-bladed screwdriver to tighten the connection.

   If the VHF terminal has a screw-in connector, attach a VHF adapter to the switch box's twin-lead connector. Then attach the adapter to the VHF terminal. (A VHF adapter is usually supplied with your TV; if not, you can buy one at a TV or electronics store.)
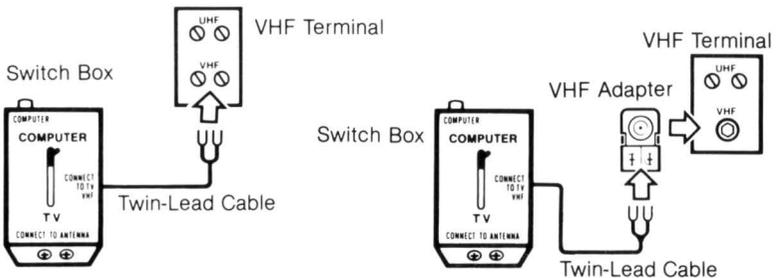
Note: If the VHF terminal connections on your TV are different from those shown here, refer to your TV manual or contact a TV service center.

4. If you like, pull the cover off the adhesive square on the back of the switch box, then stick the switch box securely to your TV.

Setting Up the XE Console

To get the XE console set up and ready to work, follow these steps:

1. Connect the console to the TV switch box. Plug one end of the TV cable supplied with your system into the jack labeled "COMPUTER" on the switch box. Plug the other end of the cable into the jack labeled "Television" on the back of the console. Move the sliding switch on the switch box to the COMPUTER position.

TV Cable

VHF Adapter

VHF Terminal

XE Console

Switch Box
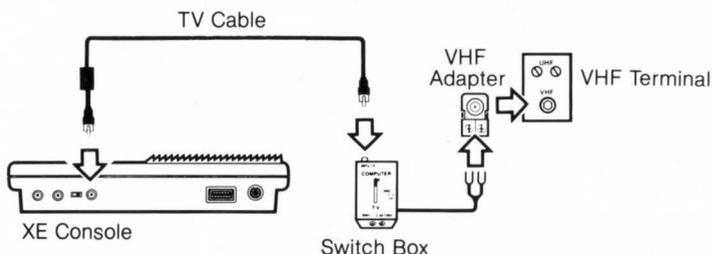
2. Insert the round plug of the power adapter cable into the port labeled "Power" on the back of the console. Plug the other end of the cable into a grounded electrical outlet or power strip.

XE Console
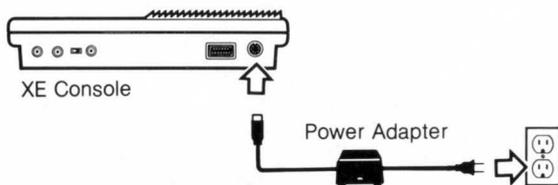
Power Adapter

Note: If the **[Power]** key's indicator light comes on when you plug in the power adapter cable, your console is turned on. For now, press the **[Power]** key to turn off the console.

3. Connect the joystick supplied with your system. Plug its cable into controller port 1 on the right side of your console.

Controller Port 1
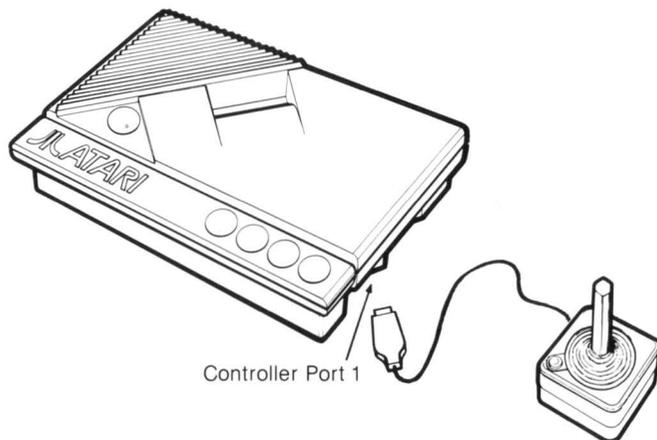
Turning Your System On and Off

When you turn on your XE system, its built-in game Missile Command will appear on screen ready for you to begin play. Make sure you have connected a joystick, then follow these steps:

1. Turn on your TV or monitor. If you're using a TV, select channel 2 or 3, whichever is weaker in your area. Set the channel selector on the back of your XE console to the same channel.

Channel Selector
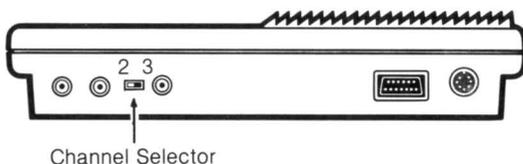
2. If you have connected any other peripherals (such as a disk drive) to your system, turn those on now.

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3. Press the **[Power]** key to turn on the console. (Always turn on the console last.) The indicator light on the key comes on, and in a few seconds the Missile Command title screen appears on your video display. Adjust the controls on your TV or monitor to clearly tune in the sound and picture.


```
    MISSILE COMMAND
COPYRIGHT 1981 ATARI
 1PLAYER SKIP0 BONUS
```

4. To begin game play, press the **[Start]** key on the console. (The **Missile Command Game Manual** supplied with your XE game system gives complete instructions on how to play the game.)

5. To turn off the XE system, press **[Power]**. The indicator light goes off. Then turn off your video display and any other peripherals you may have connected to your system. If you're using a TV, move the sliding switch on the TV switch box to the TV position.

Sliding Switch →

COMPUTER

COMPUTER

CONNECT TO TV VHF

TV

CONNECT TO ANTENNA
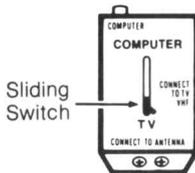
Function Keys

The top of your XE console has four colored function keys which are used to start and operate games and programs. The following sections give general information about each key.

[Start] Key   [Option] Key

[Select] Key

[Reset] Key
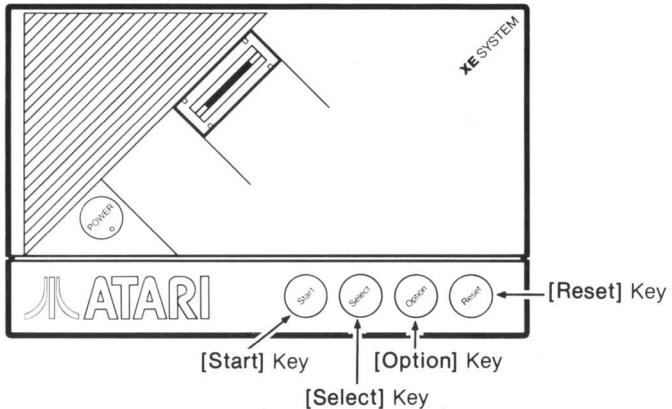
Note: Key functions may change from one program to another. The manual supplied with each program will give the best information on how a function key operates within that program.

Start

Pressing the [Start] key generally starts the operation of a game or program.

Select

Pressing the [Select] key generally selects a particular part of a program or game for operation. For example, when conducting the XE's diagnostic tests (described later in this chapter), you use [Select] to choose which test to run. [Select] may also be used to select a game variation. For example, in Missile Command you use [Select] to select the number of players.

Option

Pressing the [Option] key generally selects a program option. For example, in Missile Command you use the [Option] key to turn the BONUS game option on and off.

Reset

Pressing the [Reset] key generally stops a program in progress and returns you to the program's opening screen. This function is similar to turning the XE system off and on, except that the program you're using remains on screen.

Plugging In a Cartridge

Many game and applications programs for the XE system are contained on cartridges. To plug in a cartridge, first make sure the XE console is turned off. Hold the cartridge slotted-end down with its label towards you and firmly push it into the cartridge port on the top of the console.


When you turn on your system now the cartridge program will load instantly. To change cartridges, turn off your system. Remove the first cartridge and plug in the new one before turning on your system again.

Warning: Never remove or insert cartridges while the XE is turned on. Doing so can damage both the XE and the cartridge.

Setting Up the XE Keyboard

With a keyboard connected to your system you can use the XE's built-in programming language ATARI BASIC as well as play the games that use keyboard control. First make sure the XE console is turned off, then plug the XE keyboard cable into the keyboard port on the left side of the console.

XE Console

XE Keyboard

Keyboard Port
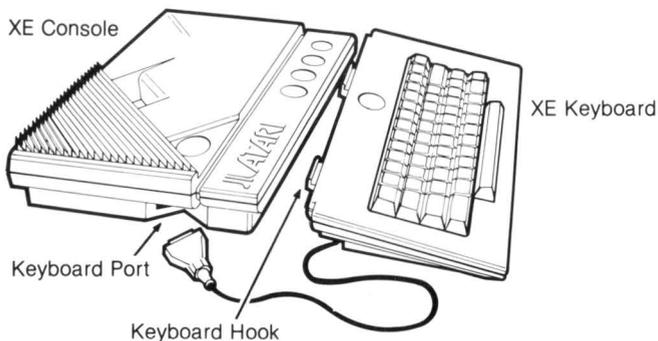
Keyboard Hook

If you like, you can connect the keyboard and console to form one unit. The back of the keyboard has wide hooks, and the front of the console has corresponding slots. Tip the keyboard and engage the hooks into the slots under the front edge of the console.

Running BASIC and Missile Command from the Keyboard

Once you've connected a keyboard, you can use either of the XE's two built-in programs, ATARI BASIC and Missile Command. To run BASIC, simply turn on your console. With the keyboard connected, the XE loads BASIC instead of Missile Command and displays it on screen:

```
READY
■
```
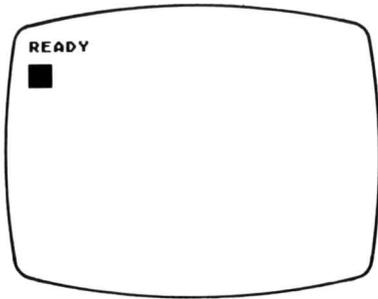
Note: For complete information on using your keyboard and ATARI BASIC, see the **XE Keyboard Owner's Manual** supplied with your XE keyboard.

To load Missile Command, hold down the **[Select]** key when you turn on the console. The Missile Command title screen will appear.

Using Game Controllers

The joystick, light gun, mouse, and Trak-Ball controllers offer different ways to control game action or operate applications programs. All controllers plug into the controller ports on the right side of the XE console. To connect a controller, plug it into controller port 1. For games with two players you can plug an additional controller into controller port 2.
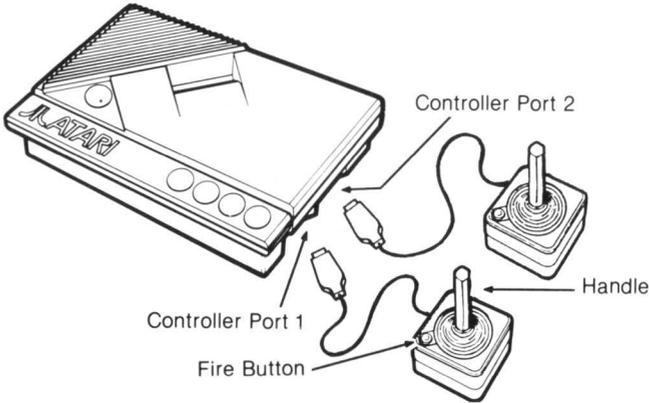
Joystick

After plugging in the joystick supplied with your XE game system, operate it by holding it with the fire button on the upper left. Pushing the handle left, right, forward, or back generally moves the on-screen cursor in the same direction, and pressing the fire button usually shoots at a game target. (See the manual supplied with your particular game for specific instructions on joystick operation.)

Light Gun

In some games, the XG-1™ light gun is used to start the game as well as play it. Plug in the gun, then aim it at an on-screen target. When you pull the trigger, an invisible beam strikes the target. Aim accurately by lining up the gun's front sight between the two arms of the rear sight.
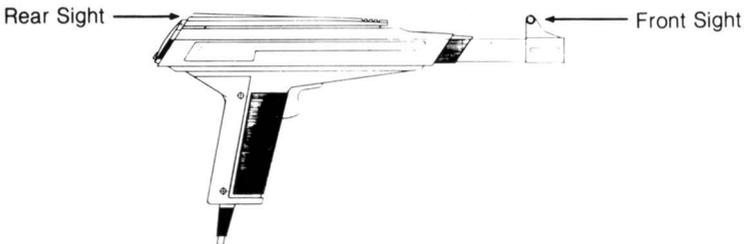
The recommended shooting range for the light gun is three to five feet from your video display screen. You may want to increase your video display's brightness and contrast to ensure the light gun's effectiveness.

Warning: Do not expose the light gun's lens to any intense light other than that of the video display.

Expanding the XE System

Adding peripherals to your XE game system lets you take full advantage of the system's power and capabilities. For example, with a disk drive or program recorder connected, you can save the programs you write with ATARI BASIC as well as access the hundreds of games and applications available on disk and cassette.

Your XE game system has an SIO port (labeled "Peripheral") on the back of the console that can accommodate disk drives, program recorders, printers, modems, or other serial devices. For instructions on connecting a peripheral, refer to the manual that accompanies it.

Back of Console

SIO Port
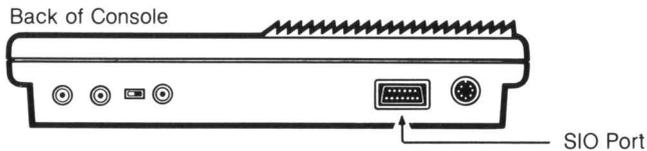
Adding a Disk Drive

Connecting an Atari disk drive to the XE lets you use disk-based games and applications. You can also start up your system with a disk program instead of Missile Command or BASIC.

To start up your system with a disk program when a disk drive is attached, follow these steps:

1. Turn on your video display and disk drive.
2. When the drive's busy light goes off, insert the program disk into the drive and close the latch.
3. Turn on power to the console. If the program runs with BASIC and a keyboard is attached, simply press [**Power**]. If the program runs with BASIC but you do not have a keyboard attached, hold down [**Select**] and press [**Power**]. If the program runs without BASIC, hold down [**Option**] and press [**Power**].

The disk-based program will load, ready for you to start working.

Adding a Program Recorder

Connecting an Atari program recorder to the XE lets you use programs supplied on cassette tapes. To run a cassette program that does not require BASIC, follow these steps:

1. Connect a program recorder to your XE system by plugging its cable into the SIO port on the back of the console. (Also connect the XE keyboard to your system if your program uses a keyboard.)

2. With all system components turned off, insert the program cassette into the program recorder.

3. Turn on your video display and any other peripherals.

4. Hold down [Start], then press [Power] to turn on your console.

5. After you hear a beep, press the [Play] key on the recorder, then press [Start] on the XE console.

The program will load and begin running.

Note: For instructions on running cassette programs that must be loaded from BASIC, see the XE Keyboard Owner's Manual supplied with your XE keyboard.

Additional Devices

You can connect a number of serial devices (disk drive, printer, modem, and so on) to your XE system at the same time. The first peripheral is connected to the system, and the additional peripherals are connected to it in a chain (this is called chaining). Refer to the manuals that accompany the devices, or contact your authorized Atari dealer for more information.

CHAPTER 2
HELPFUL INFORMATION

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System Diagnostics

When you switch on your XE game system, it takes a few seconds for the first screen display to appear. During that time, the XE is automatically testing itself for operating problems.

Note: If the XE's circuits fail the test, the message "Memory Test" appears on screen. This means your XE needs servicing from an authorized Atari service center.

You can run a version of these system diagnostics yourself to make sure your system is working properly, or whenever you suspect problems with system memory, sound, graphics, or the keyboard. Before taking your system in for servicing, you may want to run these tests and report the results to your service representative.

To conduct the system diagnostics, follow these steps:

1. Switch off all system components except the video display.

2. Hold down **[Option]** and press **[Power]** to turn on the console.

3. The Self Test menu appears, listing the MEMORY, AUDIO-VISUAL, KEYBOARD, and ALL TESTS options.

```
         SELF TEST
    ─────────────────────
      MEMORY
      AUDIO-VISUAL
      KEYBOARD
      ALL TESTS
    ─────────────────────
     SELECT, START OR RESET
```

Note: You can display the Self Test menu from a BASIC screen by typing BYE at the ready prompt and pressing **[Return]**. Make sure all peripherals except the video display are switched off before starting a test.

4. Press [Select] to select a test (that test will blink), then press [Start] to begin. The test will begin and continue running until you press [Reset].

Note: If you have a keyboard connected to your system, pressing [Help] while a test is running will redisplay the Self Test menu.

As long as you experience trouble-free operation with your XE, conducting the system diagnostics every few months should be a sufficient checkup for your system.

Memory Test

The memory test checks ROM (Read Only Memory) and RAM (Random Access Memory). ROM is nonerasable memory containing the computer's operating system, ATARI BASIC, and Missile Command. RAM is temporary memory holding the programs you write with ATARI BASIC or load from disk or cassette.

The memory test works something like a stoplight. When ROM is tested, two bars appear on screen. If the bars turn green, ROM is working correctly. If the bars turn red, ROM needs servicing.
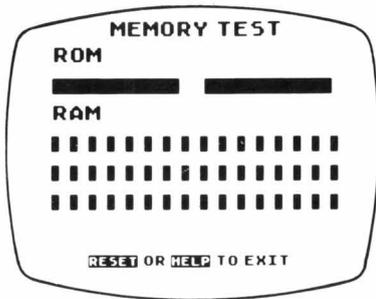
When RAM is tested, 48 small squares appear, each representing 1 kilobyte of RAM. If a square turns green, that kilobyte is good. If a square turns red, RAM needs servicing.

Note: If you entered the Self Test program from ATARI BASIC, you will see 40 squares instead of 48 during the memory test. ATARI BASIC is using the other eight kilobytes of RAM.

Audio-Visual Test

The audio-visual test checks the four sound voices and the color and graphics capabilities of your system. Before you begin this test, make sure your video display's volume control is turned up. If you are using a monitor, make sure the audio cable is firmly attached.

As the test proceeds, a musical staff and treble clef appear on screen above the number of the voice being tested. Six notes are played and displayed. The six notes repeat once for each of the four voices.

If a voice number appears but you don't hear music, or if the colors aren't consistent during each voice test, your system needs servicing.

Keyboard Test

The keyboard test works with two keyboards—the standard XE keyboard and a test keyboard on screen. When you press a key on the XE keyboard, the corresponding key on screen flashes in reverse video and a note sounds. The [Space Bar] and function keys are already shown in reverse video, so pressing any of them flashes the matching key on screen in normal video. The [Shift] and [Control] keys flash only when they are pressed simultaneously with another key.

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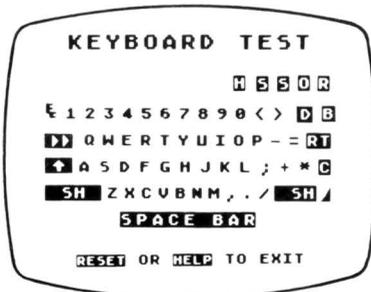
The keys in the top row of the screen keyboard represent the function keys on the XE console and the [Help] key on the keyboard. The letter on each key on screen is the first letter in the name of the key it represents. From left to right the keys on screen are [Help], [Start], [Select], [Option], and [Reset].

You will not be able to test the [Help], [Reset], or [Break] keys. Pressing [Help] returns you to the Self Test menu; pressing [Reset] returns you to Missile Command or BASIC (if you have a keyboard attached); and [Break] doesn't function in the test.

Note: If you do not have a keyboard connected to your system, you can test only the [Start], [Select], and [Option] keys with the keyboard test.

All Tests

When you select the ALL TESTS option from the Self Test menu, the XE runs the memory test, audio-visual test, and keyboard test in sequence, and continues running them until you press [Reset].

In Case of Problems

If you run into problems operating your XE game system, don't panic. Chances are the difficulty is something you can take care of yourself.

The Picture Doesn't Look Right

If the image on your video display screen doesn't look right—if it's fuzzy, distorted, flickering, if no screen image appears, or if you see a light-grey screen—check these areas:

- **Power Switches** Make sure both the XE console and the video display are turned on.
- **Switch Box** If you're using a TV, set the switch box to the COMPUTER position.
- **Cable Connections** Test the cable connections to see if they are correct and secure. If you're using a TV, make sure the TV cable is properly plugged in to the switch box and console, and the switch box and antenna cable connections are correctly and securely attached.
- **TV Channel** If you're using a TV, the channel selectors on both the TV and the back of the XE console should be set to the same channel (2 or 3, whichever is weaker in your area). If a strong TV signal is broadcasting on the channel you selected, you'll experience interference. Try selecting the other channel (2 if you're on 3 and 3 if you're on 2) on both the TV and the XE console channel selectors.

Note: To return to regular TV viewing, be sure to move the switch box setting to the TV position.

No Color on Screen

If your screen has no color, experiment with the brightness and contrast controls. The problem may be that your video display is not adjusted correctly. If you're using a TV with automatic fine-tuning, turn off the automatic control and fine-tune manually.

No Game Sound

If you have no game sound, try turning up the volume on your video display. If you're using a TV and the sound is distorted or buzzing, adjust the TV's fine-tuning controls until both the sound and picture are clear. If the problem persists, a strong TV signal may be broadcasting on the channel you selected. Select the other channel (2 if you're on 3 and 3 if you're on 2) on both the TV and XE console channel selectors.

It Just Won't Work

If you experience operating problems that you can't resolve, take your XE system to an authorized Atari service center. For the location of the nearest center, call your Atari retailer (or see **Customer Support** at the end of this chapter).

## Caring for Your XE Game System

Follow the guidelines in this section to ensure continuing excellent performance from your XE game system.

- Set up your system on a sturdy, level surface away from dust, grease, extreme temperatures, direct sunlight, moisture, and high humidity.
- Avoid smoking near your system and keep liquids away from the components.
- When you turn off your console, wait at least ten seconds before you turn it on again. Always turn off your console before inserting or removing a cartridge.
- Turn off your system before cleaning it. Clean only the outside of the components, using a soft, slightly damp, lint-free cloth. Do not use cleansers, abrasives, or solvents.
- To ship or store your system, repack it in the original factory packing materials.

Power Connection in the United Kingdom

In the United Kingdom, the ATARI XE operates on ~240V
50 Hz mains supply.

The wires in this mains lead are colored in accordance with
the following code:

Green/Yellow — Earth (E)
Blue — Neutral (N)
Brown — Live (L)
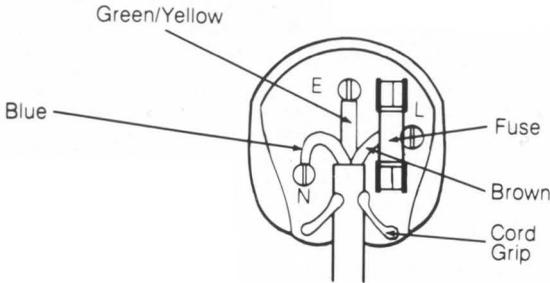
If the colors of the wires in the mains lead of this appliance
do not correspond with the colored markings identifying the
terminals in your plug, proceed as follows:

The wire colored GREEN/YELLOW must be connected to the
terminal in the plug marked by the letter E or by the safety
earth symbol ⏚ , or colored GREEN, or GREEN/YELLOW.

The wire colored BLUE must be connected to the terminal
marked with the letter N or colored BLACK. The wire colored
BROWN must be connected to the terminal marked with the let-
ter L or colored RED.

If a 13-amp (BS1363) plug is used, a 3-amp fuse must be fit-
ted, or if any other type of plug is used, a 3- or 5-amp fuse
must be fitted either in the plug, adaptor, or on the distribu-
tion board.

Technical Information

Specifications

Processor	6502C microprocessor, clock speed 1.79 MHz
Custom Chips	GTIA: graphics display POKEY: sound generator control ANTIC: screen and input/output ports FREDDY: memory system control
Memory	64 kilobytes of RAM 34,048 bytes of ROM (including the operating system, ATARI BASIC, and Missile Command)
Display	11 graphics modes 256 colors 320 x 192 pixels, highest resolution 40 columns x 24 lines text display 5 text modes
Sound	4 independent sound voices 3.5 octave range
Input/Output	Keyboard port TV output Composite video output Audio output Controller ports SIO port Cartridge interface Power In connector
Power Supply	1 amp @ 5 volts DC
Dimensions:	
Console	Maximum height: 60 mm (2.25 in.) Width: 325 mm (12.75 in.) Depth: 205 mm (8 in.)
Keyboard	Maximum height: 45 mm (1.75 in.) Width: 350 mm (13.75 in.) Depth: 162 mm (6.25 in.)
Weight:	
Console	1.02 kg (2.25 lb.)
Keyboard	1.04 kg (2.3 lb.)
Special Features	Built-in operating system, ATARI BASIC, and Missile Command; software and hardware compatibility with ATARI XE and XL computers

Connector Pinouts

Controller

1 — (Joystick) Forward Input
2 — (Joystick) Back Input
3 — (Joystick) Left Input
4 — (Joystick) Right Input
5 — Paddle B Input
6 — Trigger Input
7 — +5V

8 — Ground
9 — Paddle A Input

Cartridge

A — RD4
B — GND
C — A4
D — A5
E — A6
F — A7
H — A8
J — A9
K — A12
L — D3
M — D7
N — A11
P — A10
R — R/$\overline{W}$
S — B02

1 — $\overline{S4}$
2 — A3
3 — A2
4 — A1
5 — A0
6 — D4
7 — D5
8 — D2

9 — D1
10 — D0
11 — D6
12 — $\overline{S5}$
13 — +5V
14 — RD5
15 — $\overline{CCTL}$
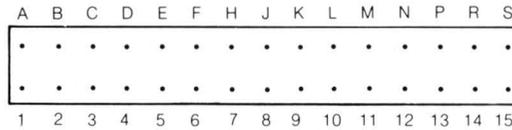
SIO

1 — Clock Input
2 — Clock Output
3 — Data Input
4 — Ground
5 — Data Output
6 — Ground
7 — Command
8 — Motor Control
9 — Proceed
10 — +5/Ready
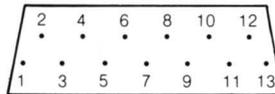
11 — Audio Input
12 — Not Connected
13 — Interrupt

Power

1 — +5V
2 — Shield
3 — Ground
4 — +5V
5 — Ground
6 — +5V
7 — Ground

```
        7  ·    · 6
     3 ·        · 1
        5 ·  ·  · 4
           2
```
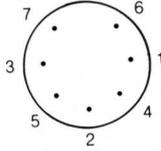
Customer Support

Atari Corporation welcomes questions about your Atari computer products. Write to:

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In the United Kingdom, write to:

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Berkshire
SL2 5BZ

Please write the subject of your letter on the outside of the envelope.

Atari user groups are outstanding sources of information on how to get the most from your Atari products. To receive a list of Atari user groups in your area, send a self-addressed, stamped envelope to:

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Sunnyvale, CA 94088

In the United Kingdom, write to:

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