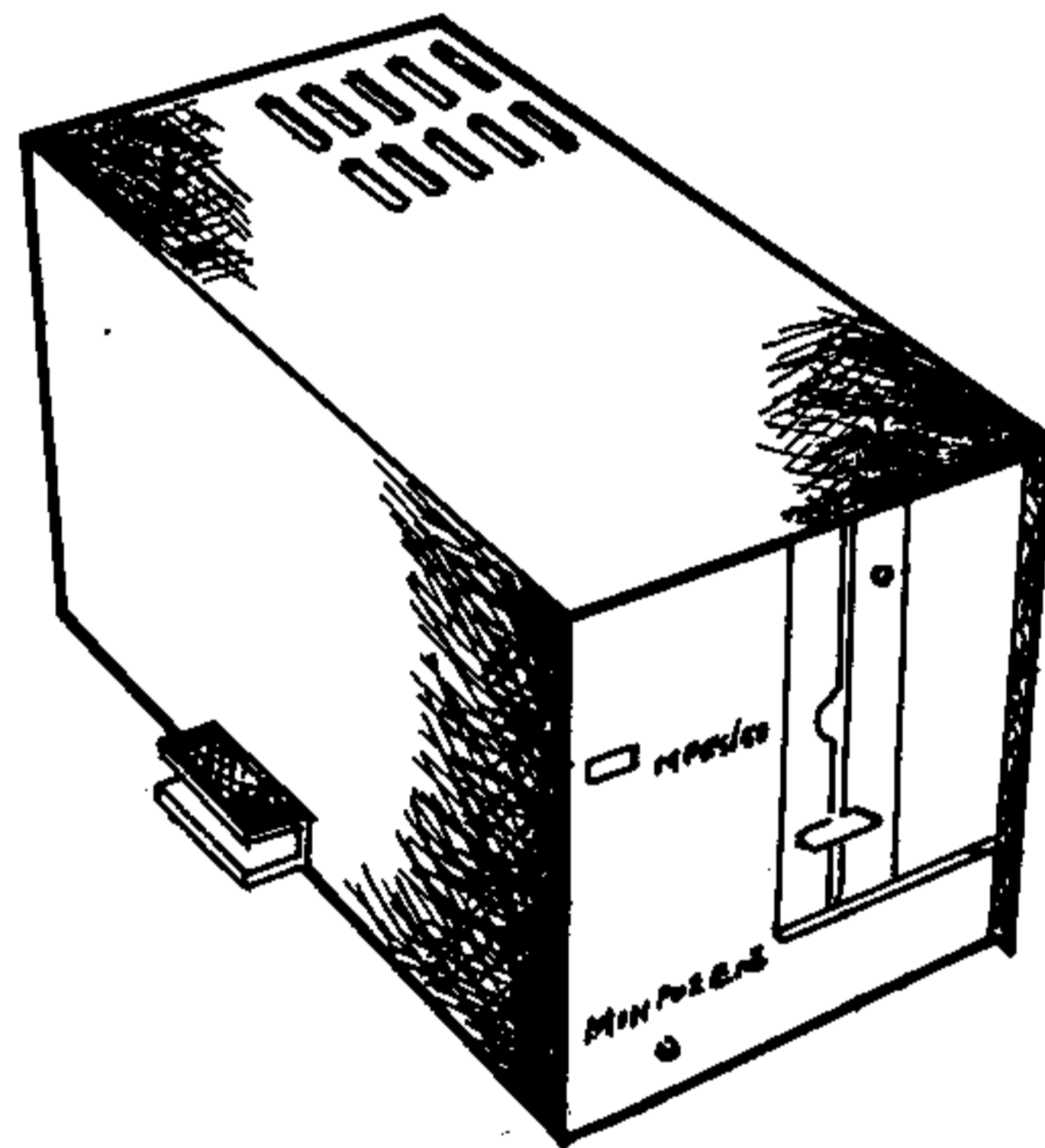




Only pages unique to the MPES are here. Consult the TI and Myarc disk controller and RS232 manuals

Mini Peripheral Expansion System

For The
TI 99/4A Home Computer



MPES/50 SYSTEM USER MANUAL

Mini Peripheral Expansion System

MPES/50 System User Manual

IMPORTANT

Record the model and the serial numbers of your MPES/50 System and the purchase date in the space below. The serial number is identified by the words "SERIAL NO.". Always reference this information in any correspondence.

Model No.

Serial No.

Purchase Date

MPES/50 SYSTEM
USER MANUAL

^{p35}
ERRATUM

In the first line of the second paragraph change from:

"PROGRAM,"

to:

"PROGRAM", .

The program name must not end with a punctuation mark.

ADDENDUM

APPENDIX D: Parallel I/O Port; Pin-Out

1. Hand Shake OUT (Strobe)
2. Data, LSB
3. Data
4. Data
5. Data
6. Data
7. Data
8. Data
9. Data, MSB
10. Hand Shake IN (Busy)
11. Logic Ground
12. 10K ohm Pull-Up Resistor to +5V
13. No Connection
14. Logic Ground
15. 1K ohm Pull-Up Resistor to + 5V
16. Logic Ground

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SCOPE OF THIS MANUAL

This manual describes the installation and operation of MYARC's MPES/50 Mini Peripheral Expansion System for use with the TI 99/4A Home Computer.

Connected to the 99/4A console, MYARC's MPES/50 System performs the same functions (expanded memory, RS232 interface, disk memory system, and disk drive) as does the TI Peripheral Expansion System including the PHP 1260 Memory Expansion card, the PHP 1220 RS232 Interface Card, the PHP 1240 Disk Memory System, and the PHP 1250 Disk Memory Drive.

Sections of this manual ("Introduction" & "Set-Up Instructions") covering specifications, general descriptions of system functions, installation and testing of the MPES/50 System were prepared by, and are the sole responsibility of, MYARC.

By permission of Texas Instruments, Inc., major portions of this manual ("Using the RS232" & "Using the Disk Memory System"), i.e., those sections dealing with technical descriptions of the TI 99/4A Home Computer system functions, their operation, and detailed instructions for system operation by the user, have been reproduced directly from the appropriate TI User Manuals. Most of this material is reproduced from the PHP 1220 RS232 Interface Card, the PHP 1240 Disk Memory System, and the PHP 1250 Disk Memory Drive manuals. Only minor changes relating to the MPES/50 equipment configuration and to the added features of the MPES/50 System have been made in the reproduced text.

WE RECOMMEND THAT FIRST-TIME USERS READ THE ENTIRE MANUAL BEFORE PROCEEDING WITH INSTALLATION AND OPERATION.

MYARC's Mini Peripheral Expansion System

INTRODUCTION

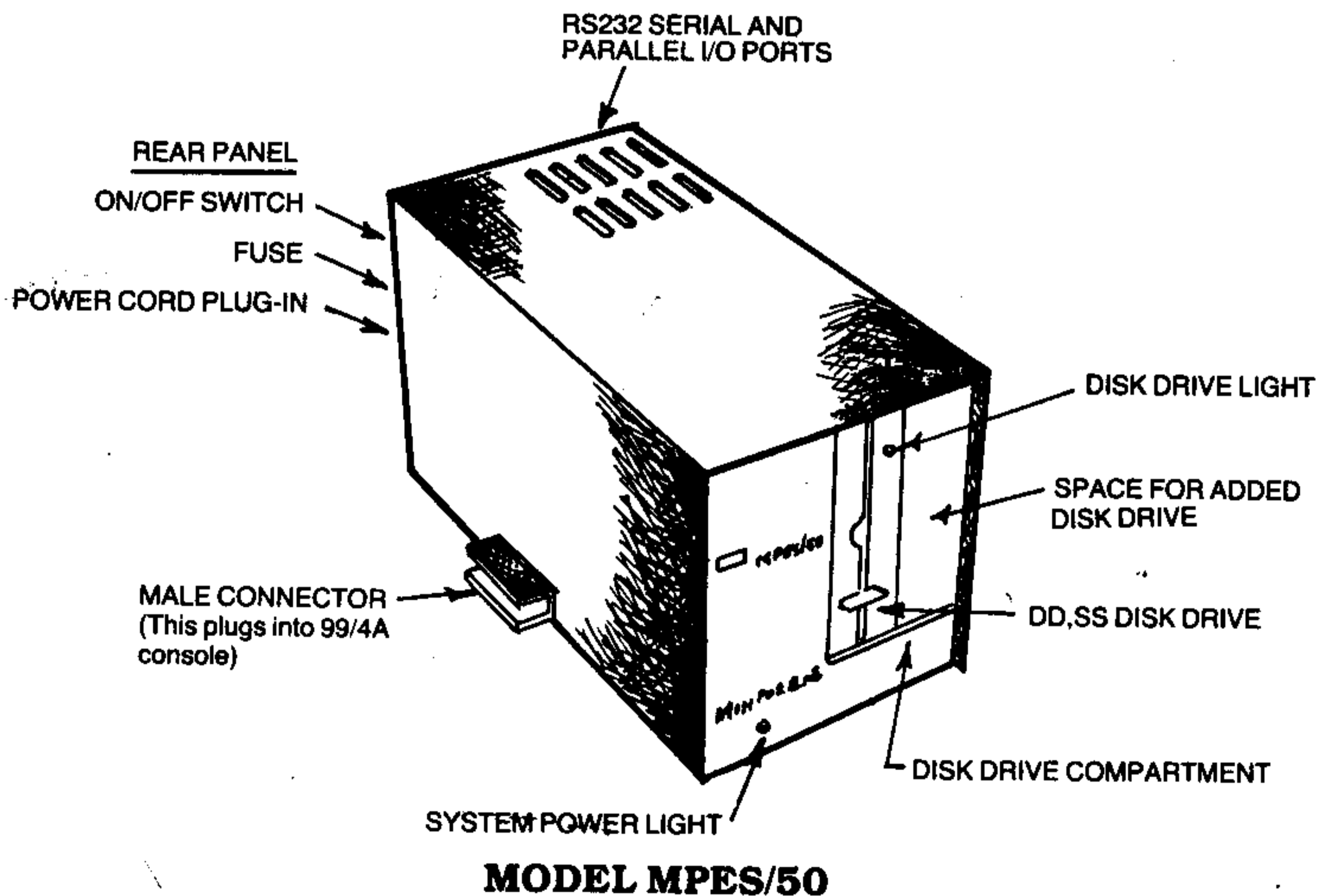
Description Summary

The MYARC Mini Peripheral Expansion System comes complete in one cabinet which is connected directly to the TI 99/4A Home Computer Console. The following "accessory" functions are automatically added to your 99/4A when you connect the MPES/50 to your 99/4A:

- 32K bytes of memory expansion (RAM)
- One RS232 serial port
- One parallel I/O port
- Floppy disk controller; double-density (DD), single- or double-sided drive capability (SS or DS)
- One floppy disk drive; double-density, single-sided (DD,SS)*

Mini Peripheral Expansion System Cabinet

The Mini Peripheral Expansion System cabinet contains all the electronic circuitry, firmware and hardware, and power supply for the MPES/50 System. As shown below, the disk drive(s) is/are located within the disk drive compartment and the connector for plugging into the 99/4A console is on the left side of the cabinet.



*-Double-sided drive(s) available at additional cost

The RS232 serial port (connector) and the parallel I/O port (connector) are both located on the rear panel of the cabinet. Looking from the front, both ports are at the bottom right of the rear panel.

MYARC's model MPES/50, illustrated above, is a complete system. It comes with one disk drive (DD,SS) and is ready to operate. Provision is made for installing a second disk drive in the same compartment which can be added later by the customer using MYARC's Upgrade Kit 50-2.

The model MPES/50-2 is a complete MPES/50 System with one additional disk drive (i.e., two DD,SS drives). Both drives are mounted in the disk drive compartment.

The MPES/50-RPM is sold without disk controller or disk drive. The disk memory system can be added later at the factory.

Memory Expansion (RAM)

The MPES/50 adds 32K bytes of random access memory (RAM) to the 16K bytes of RAM available in the 99/4A console. This expanded memory is designed for use with TI Extended BASIC, Editor/Assembler, TI LOGO, or any other "Solid State Software"* Command Module designed to use the additional memory. (For information on whether or not this Memory Expansion can be used with a module, refer to the Owner's Manual for that module.)

Note: To utilize the Memory Expansion, the TI Extended BASIC Command Module or another specialized Command Module MUST be inserted in the computer console. As with the TI Memory Card PHP 1260, the TI BASIC Computer language which is built into the 99/4A console and many other software packages cannot make use of the Memory Expansion.

RS232 Serial Interface and Parallel I/O Port

The RS232 interface is a communications adapter, featuring 8-bit parallel and RS232 serial capabilities that enable you to connect a wide range of accessory devices to your 99/4A. With the RS232 interface you can list programs on a printer, send and receive data from a terminal, exchange TI BASIC programs directly with other TI Home Computers, and much more. By adding a telephone coupler (modem) and certain "Solid State Software" Command Modules, your 99/4A can communicate with other computers and terminals over ordinary telephone lines. Using your 99/4A to send and receive data, you can access an office computer or time-sharing network from your own home. You can also write TI BASIC language programs which use EIA (Electronic Industry Association) Standard RS232C compatible devices, such as printers, plotters, video display terminals, and other computers. In addition to its serial I/O (input/output) feature, the MPES/50

*"Solid State Software" is a trademark of Texas Instruments Inc.

MYARC's Mini Peripheral Expansion System

also has a parallel I/O feature which handles input and output data that is in 8-bit format. The parallel I/O port interfaces directly with printers that accept data in a parallel format.

A later section will give examples of how to use the RS232 and provide details on using TI BASIC with the RS232. Additional, more advanced application examples are given in a later section of this manual.

Disk Memory System

MYARC's disk memory system is a powerful combination of hardware and software that allows you to store and retrieve data quickly and accurately on 5¼-inch floppy disks (diskettes). MYARC's MPES/50 System comes complete with the Disk Memory System. Model MPES/50-RPM does not include the Disk Memory System.

MYARC's MPES/50 System consists of the following:

FLOPPY DISK DRIVE CONTROLLER — The disk drive controller, which can control up to four* disk drives, instructs the disk drive(s) where to position the magnetic heads in order to read or write information properly. The controller also puts an index on the diskette, making the data that has been written easy to locate. The MPES/50 controller system has total flexibility to control double-density (DD) or single-density (SD) and double-sided (DS) or single-sided (SS) disk drives.

Note: The MPES/50 disk controller will control any combination of 2 double-sided, or 2 single-sided disk drives, or one of each in either of the two disk drive positions. This disk controller also reads and writes interchangeably — and equally well — to the standard TI 99/4A format, single-density diskette.

FLOPPY DISK DRIVE — The disk drive reads information from, and writes information on, the diskette. It can rapidly locate any position or file on the diskette as directed by the disk drive controller. The disk drive spins the diskette at a constant speed and controls the movement of the magnetic head.

Note: If a floppy diskette has been formatted for *DOUBLE-SIDED* operation (single- or double-density), it *CANNOT* be processed on a *SINGLE-SIDED* disk drive. However, formatted, single-sided diskettes can be processed on a double-sided disk drive.

*Four total — two inside the cabinet and two external

MYARC's Mini Peripheral Expansion System

MYARC's Mini Peripheral Expansion System models have disk drives with diskette storage capacity as follows:

Model	# Drives	DD	SS or DS	Formatted Diskette Storage
MPES/50	1	Yes*	SS	164K bytes
MPES/50 with DS	1	Yes*	DS	328K bytes
MPES/50-2	2	Yes*	SS	328K bytes
MPES/50-2 with DS	2	Yes*	DS	655K bytes
MPES/50-RPM	0	—	—	—

DISK MANAGER COMMAND MODULE — The Disk Manager "Solid State Software" Command Module, packed with the MPES/50 System, helps you maintain the information on your diskettes. Initializing, naming and renaming diskettes, renaming files, deleting files, copying files and copying diskettes all can be easily performed with the Disk Manager module plugged into the 99/4A console.

Because all control software (firmware) needed for the disk system is in the permanent ROM in both the Disk Manager Module and the disk drive controller, the disk memory system uses only a relatively small amount of working space in the computer's available memory (RAM). The Disk Manager Module provides many advanced functions. For instance, in copying a diskette, it rearranges the files on the diskette alphabetically. Also you have the choice of copying selected files instead of an entire diskette. These and many other unique features are described in this manual.

*Note: Will also format and read single density (SD).

Set-Up Instructions

SET-UP INSTRUCTIONS

The steps involved in connecting the Mini Peripheral Expansion System to the 99/4A computer console and in checking that the cabinet is properly installed, are included in this section. Please read this material completely before proceeding.

Once you have unpacked the unit, you are ready to connect the MPES/50 System directly into your 99/4A Computer. (Save the packing material for storing or moving the unit.)

CAUTION

If you purchased a System with double-sided disk drive(s) save the cardboard spacer that comes with each drive. The spacer keeps the two drive heads from hitting and damaging each other. *Always* replace the spacer in the drive and close the gate when moving the equipment.

To protect the DS drive heads from hitting each other, the gate will not close if a diskette was not inserted. **DO NOT ATTEMPT TO TURN THE KNOB IF A DISKETTE HAS NOT BEEN INSERTED!**

Installing the Mini Peripheral Expansion System

1. First, turn off the computer console and all attached devices.
2. **WARNING:** To avoid damaging electronic circuitry, wait two (2) minutes after turning off the console for the power to discharge before proceeding.
3. Since the MPES/50 cabinet will be inserted directly into the right side of the 99/4A console, *both* the MPES/50 cabinet and the 99/4A console *must rest on the same table/bench top.*
4. Carefully line up the connector at the bottom left side of the MPES/50 cabinet with the accessory connector located at the bottom right side of the computer console. Next, slide up the console accessory door and insert the MPES/50 connector into the console accessory connector by sliding the cabinet into the console then firmly pressing together to assure full connection.
5. Insert one end of the power cord into the 3-prong pin on the back of the MPES/50 cabinet. Insert the other end into a 115 VAC outlet.

WARNING

THE MPES/50 CABINET REQUIRES COOLING: Heat from the electronic components in the cabinet is efficiently dissipated by noise-free natural convection.

For trouble-free and continuing reliable operation, observe the following precautions:

Place the cabinet so that there is at least a six-inch clearance in back and on the side of the cabinet from walls and other devices.

Keep all cabinet air vents clear of loose papers or other objects. Air intake vents in the bottom must also be kept clear.

Do not place any objects or equipment (such as an external disk drive) on top of the MPES/50 cabinet.

Testing the Mini Peripheral Expansion System Cabinet

1. The power switch is located on the rear panel in the top left hand corner. Turn ON the peripheral system, monitor, and console in that order.
2. If the light does not come on, the 115 V power cord may not be properly inserted at each end. If you still have difficulty, see "In Case of Difficulty" below.

Disconnecting the Mini Peripheral Expansion System

1. Turn OFF the computer console, Mini Peripheral Expansion System, monitor, and any other attached devices in that order.
2. Disconnect MPES/50 cabinet power cord.
3. Wait two minutes and then disconnect (pull/push) the MPES/50 cabinet away from the computer console.

Changing the Fuse

1. Turn OFF the computer console, Mini Peripheral Expansion System, monitor, and any other attached devices. Pull out the MPES/50 power cord from the wall outlet.
2. The fuse is located on the rear panel of the MPES/50 cabinet directly below the switch. Unscrew the fuse holder and remove the fuse.

Set-Up Instructions

3. Next, insert the new fuse. Then screw the fuse holder back into place in the rear panel.
4. Plug the Mini Peripheral Expansion System power cord back into the wall outlet. Turn ON the Mini Peripheral Expansion System, monitor, and console.

In Case of Difficulty

If the Mini Peripheral Expansion System does not appear to be working properly, check the following:

1. **POWER** - Be sure that the MPES/50 is plugged into 115 VAC and turned ON. Also, check to be sure the the fuse is not blown by examining the fuse to see if the wire is broken.
2. **99/4A COMPUTER CONSOLE** - Check to see that the console and monitor work properly with the MPES/50 and all other accessories disconnected.
3. Re-install the MPES/50 as described previously under "Installing the Mini Peripheral Expansion System."
4. If none of the above procedures corrects the difficulty, consult "If You Have Questions or Need Assistance" or see the "Maintenance and Service Information" section of Texas Instruments' "User's Reference Guide."

CAUTION

Always disconnect (pull/push) the Mini Peripheral Expansion System cabinet from the console before moving the units. The connection between the cabinet and the console is an electrical connection ONLY. It is NOT designed to support the weight of the units. When inserted, BOTH the cabinet and console MUST be at the SAME level and in the same plane and angle with each other. To prevent damage, always disconnect the cabinet and console and all other devices before moving any part of your Home Computer System.

USING THE RS232

Connecting Accessory Devices

Other devices can be attached by cable to one or both of the connectors at the back of the cabinet. One of the connectors is a parallel I/O port which enables your 99/4A to be connected to an impact printer. It is the 16-pin connector. The other connector is an RS232 serial I/O port for connection to RS232-compatible devices. It is the 25-pin connector.

For your convenience, Appendix B contains reference information about cables.

Addressing Accessory Devices

In computer software programs written for use with the RS232 interface, the circuitry through which data passes to and from external devices is called a "port," and each of these ports has a name. Usually, the serial I/O port is called RS232 or RS232/1 and the parallel I/O port is called PIO or PIO/1.

Using TI Basic

After you've attached a peripheral to the RS232 interface, the peripheral's operation can be controlled by using TI BASIC commands and statements to input and output data. These commands and statements are summarized here and are explained later in detail in the "Statements and Commands" section.

- OPEN, CLOSE, INPUT, PRINT — Statements used to send and receive data between your Home Computer and other computers or accessories.
- OLD, SAVE — Commands used to send programs from one Home Computer to another.
- LIST — Command used to print or display a copy of a program.

When communicating with the RS232 interface, TI BASIC recognizes four device or file names. The first two names refer to the serial I/O port. RS232 and RS232/1 are equivalent and reference the serial I/O port. The remaining two names refer to the parallel I/O port. PIO and PIO/1 are equivalent; both names address the parallel I/O port. Whenever an OPEN statement or a LIST, OLD, or SAVE command references one of the above names, all output or input is directed to, or entered from the RS232 serial or parallel I/O port.

RS232 Interface

Software Switch Options

Computer accessories often require switches to give instructions to the computer. These switches are sometimes a physical part of the product and are set by hand. With the RS232 Interface, however, these switches are programmed into an integrated circuit contained in the card to provide more flexibility. Since these switches are part of the "software," they are called *software switch options*.

Nine particular operations of the RS232 Interface are controlled with software switch options. The first four describe the characteristics of the computer or accessory with which you want to communicate. *Note:* These four operations are not used with the parallel I/O port.

- **BAUD RATE**—The rate (in bits per second) at which data is transferred.
- **DATA BITS**—The number of bits of data in each character transferred.
- **PARITY**—The addition of a check bit to allow checking data transmission for errors.
- **STOP BITS**—The number of bits sent at the end of each character.

The other five software switch options make adjustments in the operations performed by your TI Home Computer.

- **CHECK PARITY**—An option which verifies the data of each character received. *Note:* Also not used with the parallel I/O port.
- **NULLS**—An option that adds six null characters to be transmitted after each carriage return to allow for printer carriage mechanism timing.
- **ECHO OFF**—An option to suppress retransmission of each character received at the sender's device.
- **CARRIAGE RETURN and LINEFEED OFF**—An option to suppress automatic addition of a carriage return and linefeed to each variable-length DISPLAY-type record.
- **LINEFEED OFF**—An option to suppress automatic addition of a linefeed to each variable-length DISPLAY-type record. A carriage return is still automatically added.

These nine software switch options allow you to match your TI Home Computer to the operating characteristics of the accessory attached to the interface port. You do this by listing the switch options desired when you are entering the TI BASIC command or statement needed. All nine options are available with the serial I/O port, but only the last four can be included when you send or receive data through the parallel I/O port.

The software switch options must be designated in the OPEN statement and in the LIST, OLD, and SAVE commands. Since CLOSE, INPUT, and PRINT statements operate with previously opened files, switch options are not necessary.

To make things as easy as possible for you, the RS232 Interface assumes certain switch settings, called default values. You only have to specify those settings you need to change from the default values.

Software Switch Options and Default Values

SOFTWARE SWITCH OPTION DEFAULT VALUES

Option	Open/List	Old/Save	Applicable to Parallel I/O
BAUD RATE	Baud rate = 300	Baud rate = 300	No
DATA BITS	Data bits = 7	Option not allowed	No
PARITY	Parity = odd	Option not allowed	No
STOP BITS	1 stop bit	1 stop bit	No
NULLS	No nulls	Option not allowed	Yes
CHECK PARITY	No parity check	Option not allowed	No
ECHO OFF	Echo	Option not allowed	Yes
CRLF OFF	Carriage return supplied	Option not allowed	Yes
LF OFF	Linefeed supplied	Option not allowed	Yes

If you want to specify different values, the following software switch options can be entered. In a file name the switch options follow RS232, RS232/1 for the serial I/O port or PIO or PIO/1 for the parallel I/O port.

SOFTWARE SWITCH OPTION ENTRIES

Option	Enter As	Function
BAUD RATE = 110, 300, 600, 1200, 2400, 4800, or 9600	.BA = 300 (or desired rate)	Sets the transmission rate.
DATA BITS = 7 or 8	.DA = 7 (or 8)	Determines the number of data bits in each character.
PARITY = ODD, EVEN, or NONE	.PA = O (or E or N)	Determines type of parity checking.
TWO STOP BITS	.TW	When this switch is on, stop bits are used.
NULLS	.NU	When this switch is on, nulls are used.
CHECK PARITY	.CH	When this switch is on, parity checking is performed.
ECHO OFF	.EC	When this switch is on, the echo feature is turned off.
CRLF OFF	.CR	When this switch is on, the carriage return and linefeed options are turned off.
LF OFF	.LF	When this switch is on, the linefeed feature is turned off.

The first three options assign values to a switch and must include an equals sign (=). The remaining six switches are of the "on-off" variety and, as shown, are entered with a decimal point and then the two-letter designation. The switch options may be listed in any order in your program statement or command.

DISKETTE INFORMATION

Your MPES/50 disk system requires 5¼ inch, single-sided (double-sided if you have the DS option), double-density, soft-sectored diskettes. These diskettes are constructed of a highly flexible plastic film, coated with a thin layer of iron oxide which can be magnetized in very small areas without affecting surrounding areas. The computer interprets these areas of magnetization as coded information.

Note: A diskette comes in a protective jacket inside a storage envelope. For best results, keep the diskette in the storage envelope except while using. Never remove the diskette from its protective jacket.

A single-sided, double-density diskette is divided into tracks which are 40 concentric circles. The tracks are numbered from 0 to 39, starting at the outside track. Each track, in turn, is divided into 16 sectors. Thus, there are 640 sectors, each of which can contain up to 256 bytes of information, or 2048 bits. The sectors are numbered 0 through 639, starting with sector 0 of the first track and going to sector 639 on the last track. Each sector has additional space used only by the controller to verify sector identification and data accuracy.

A double-sided, double-density diskette has 80 tracks. The tracks are numbered 0 to 39 on one side, starting with the outer track, and 40 to 79 on the other side, starting with the inner track. Each track is divided into 16 sectors giving a double-sided diskette 1280 sectors. Each sector can contain up to 256 bytes of information, or 2048 bits. The sectors are numbered 0 to 1279, starting with sector 0 on the first track of the lower side, and sector 639 on the last track of the lower side. Sector 640 is on the last track of the upper side and sector 1279 is on the first track of the upper side. Each sector has additional space used only by the controller to verify sector identification and data accuracy.

The disk controller uses sectors 0 and 1 of the first track to form an index of file locations. If those sectors become damaged and unreadable, the computer cannot locate any files on the diskette, and the contents of the entire diskette will be unusable.

To use your disk drive system, insert the proper diskette, and use TI BASIC or a Command Module designed to operate with the disk system. The work of keeping track of your files and reading from, or writing on, the proper place on the disk is taken care of by the system.

Diskettes can be named for reference purposes. The name of a diskette can be up to 10 characters long and may use any characters except the period and the space character. Valid names for diskettes include:

DISK21	MYDISK	MY__DISK	PRK__DATA
TIRK__DATA	GEORGE	BACK__UP	BU03/24/80

The following are not valid diskette names.

3.1416	MY DISK	THISNAMEISTOOLONG
--------	---------	-------------------

Added Features

Four new utility features have been incorporated into MYARC's MPES/50 System. Please note: These features were not described earlier in this Manual. Most users will be able to easily utilize the first three features. The remaining feature will be of more interest to the advanced user.

1. SIMPLIFIED DEVICE NAME FOR THE RS232 SERIAL PORT — "P"

The present TI system assigns two choices for a single RS232 serial port — "RS232" or "RS232/1". Most users use the serial port to interface (connect) to a printer.

We have added a new utility which assigns a third choice — "P". Now you can simply type in "P" instead of typing in "RS232" or "RS232/1". If you're in BASIC, for example, enter: LIST "P".

Similarly when using TI-WRITER, enter "P" for device name and follow "P" with the appropriate switch options:

P.BA = (printer baud rate).CR or .LF, etc.

2. MAXIMUM BAUD RATE (SPEED) DOUBLED FROM 9600 to 19200 BAUD

If you have a printer, modem, or other device that can operate at the higher baud rate = 19200, you can now take advantage of that higher speed, — use the switch option ".BA = 19200".

3. PARALLEL HANDSHAKE OPTION — ".HS"

This feature increases the variety of printers that may be connected to your parallel I/O port.

The ".HS" handshake option defaults to OFF. If ".HS" is ON, then the output strobe will continue to function as a "handshake", i.e., when output is valid, the output strobe is set "low". The strobe remains low until the input busy signal is set "high".

TI handled the strobe in this manner to allow use of the "LOAD/SAVE" function via PIO. In executing a "LOAD/SAVE" via PIO, the strobe actually functions as a "handshake" signal, not as a strobe. The one limitation with this approach is that the PIO port does not function as a fully standard parallel interface to printers.

To conform to standard, the strobe should normally be "high" and go "low" when the output is valid, then "high" (6 μ sec, minimum) without respect to the busy input. Accordingly, this added MYARC software provides standard operation of the PIO port. If the user wants to use the strobe as the handshake, then the ".HS" switch option should be included in the device name.

4. PARALLEL I/O INVERTED BUSY INPUT OPTION — ".IB"

This inverted busy signal option defaults to "off". If the switch ".IB" is included in the device name, the option is ON and the busy signal logic is assumed to be inverted, i.e., high = not busy, and low = busy.

IF YOU HAVE QUESTIONS OR NEED ASSISTANCE

If you have questions concerning the MPES/50 Mini Peripheral Expansion System operation or repair, contact first the dealer from whom you purchased the equipment.

Your dealer will be able to quickly answer most questions. If your dealer doesn't have an immediate answer, the dealer will either contact MYARC or suggest you contact us directly by mail or phone.

Our address and telephone number are:

MYARC, INC.
P.O. Box 140
Basking Ridge, N.J. 07920

(201) 766-1701

Please Note: This telephone number is not a toll-free number and collect calls cannot be accepted.

90-DAY LIMITED WARRANTY

THIS MYARC MPES/50, MPES/50-2, or MPES/50-RPM WARRANTY EXTENDS TO THE ORIGINAL CONSUMER PURCHASER OF THE ACCESSORY.

WARRANTY DURATION

These MPES/50 Systems are each warranted for a period of 90-days from the date of the original purchase by the consumer.

WARRANTY COVERAGE

These MPES/50 Systems are each warranted against defective materials or workmanship. **THIS WARRANTY IS VOID IF THE ACCESSORY HAS BEEN DAMAGED BY ACCIDENT, UNREASONABLE USE, NEGLIGENCE, IMPROPER SERVICE OR OTHER CAUSES NOT ARISING OUT OF DEFECTS IN MATERIALS OR WORKMANSHIP.**

WARRANTY DISCLAIMERS

ANY IMPLIED WARRANTIES ARISING OUT OF THIS SALE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE ABOVE 90-DAY PERIOD. MYARC, INC. SHALL NOT BE LIABLE FOR LOSS OF USE OF THE HARDWARE OR OTHER INCIDENTAL OR CONSEQUENTIAL COSTS, EXPENSES, OR DAMAGES INCURRED BY THE CONSUMER OR ANY OTHER USER.

Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations or exclusions may not apply to you in those states.

LEGAL REMEDIES

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

WARRANTY PERFORMANCE

During the above 90-day warranty period, your MPES/50 System will be repaired or replaced with a new or reconditioned unit of the same or equivalent model (at MYARC's option) when return is authorized by MYARC and the unit is returned by prepaid shipment to MYARC, INC. at the address shown below. The repaired or replacement unit will be warranted for 90 days from date of repair or replacement. Other than the shipping requirement, no charge will be made for the repair or replacement of in-warranty units.

SHIPPING INSTRUCTIONS: If you believe that your unit requires servicing, please contact MYARC *before* you return your system. We will try to analyse and may be able to solve your problem without need of returning the unit. Please obtain a Return Authorization number from us before you ship the unit back.

MYARC strongly recommends that you insure the unit for value, prior to shipment.

MYARC's ADDRESS:

MYARC, INC.
241 Madisonville Road
Basking Ridge, NJ 07920