



# Tandy Corporation

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From: Valerie See  
Subject: Release Notes for AXX-2139 DESKTOP2 System Diagnostics  
File: Diagnostics

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This memo documents some of the features of the AXX-2139 DESKTOP2 System Diagnostics package. This package, like the AXX-2128 Desktop System Diagnostics package, was designed with complete system final testing and field service as primary goals. This package does not replace the existing diagnostics for desktop equipment (hence the new part number for this package); instead it is meant to be used as an additional tool in the system repair and checkout process. Some of the highlights of this diagnostic are:

- (1) Self checking for signs of computer virus infestation.
- (2) A convenient and easy to use self-contained package which will test a wide variety of desktop computers (2500SX, 2500SX-20, 2500SX-25, 2500RSX, 4820SX/T, 4825SX, 4850EP, 4833LX/T, 4866LX/T, and the Omni-profile family of computers).
- (3) Multiple testing modes with selectable system configuration and testing options.
- (4) Complete, "plain English" error logging to disk, with options to display or hard copy.
- (5) Automated disk backup prompts on the master disk.

There are several important items to note about this diagnostic:

- (1) The master disk should **immediately** be backed up and stored in a safe place. ***Never run the diagnostic from the master disk!*** This duplication process will automatically start when the master diskette is booted; to create a working copy of the disk, follow the prompts given by the duplication program.
- (2) Working copies of this disk must **not** be write-protected for proper operation. Error logging to the diagnostic disk is an important feature of this package, and can only take place when the disk is write-enabled. As this also renders the disk more susceptible to computer viruses, we strongly urge that you allow the self-check for viruses to run to completion **before** attempting to use the diagnostic.

We hope that you will find this package useful. In case of questions or problems, you are welcome to contact me at:

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**DESKTOP2 SYSTEM  
DIAGNOSTICS**

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## DESKTOP 2

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Version 1.00

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## DESKTOP2 SYSTEM DIAGNOSTICS

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## GENERAL DESCRIPTION

The Desktop2 System Diagnostics provide the user an easy to use tool with which to test the basic components of desktop computers.

## FEATURES

- o Convenient one disk packaging that operates on a wide variety of equipment.
- o Easy to operate menu system.
- o Automatic system configuration allowing user customization.
- o Multiple testing modes available.
- o Automatic mode provides pre-configured test selection.
- o Manual mode allows user test selection.
- o Group mode allows user configured test selection with single or continuous pass options.
- o Informative and user friendly test status and results.
- o Errors are logged on disk with options to display or print.

## EQUIPMENT REQUIRED

Desktop computer system

## MANUAL CONVENTIONS

**<key>** Indicates this key should be pressed.

**text** Indicates this text should be entered.

**NOTE** Indicates additional, important, or useful information.

**CAUTION** Indicates possible conditions which may cause damage to the system.

## PREPARING THE SYSTEM FOR DESKTOP2 SYSTEM DIAGNOSTICS

For proper operation of the Desktop2 System Diagnostics there should not be any Invalid Configuration error messages during boot up. If so, please run the setup program for the machine. In addition, some devices to be tested require special preparation. These devices include:

- Hard drives - should be formatted
- Floppy drives - should have formatted diskettes with no defects available

## **LOADING DESKTOP2 SYSTEM DIAGNOSTICS**

The Desktop2 System Diagnostics program must be loaded by powering the system up then inserting the program disk into floppy drive A. Upon booting, the Desktop2 System Diagnostics will automatically be loaded.

Upon loading, you may see the following warning message:

```
*** WARNING ***  
The Error Log Counts have not been cleared. For  
proper test results all Error Counts should begin  
at zero.  
Do You Wish To Clear The Error Counts (Y/N)? Y
```

The Desktop2 System Diagnostics records the first error encountered in each test onto disk. If the error log file was not cleared before leaving the program, this message will appear when it is loaded again. As the message indicates, for proper error logging of the current testing session, the error counts should be cleared before continuing. The error log is not cleared automatically upon loading since there may be times you wish to review a previous testing session's results.

---

## **NOTES**

1. The error log contains only the first error encountered in each test. However, there may be other problems with the device under test. Therefore correcting the error shown and repeating the test is recommended.
  2. In order for a test to record an error, the disk must not be write protected. Since the software disk is unprotected, a backup should be made in case a file is lost or corrupted.
- 

## **OPERATING DESKTOP2 SYSTEM DIAGNOSTICS**

The Desktop2 System Diagnostics uses an easy menuing system. Menu choices may be made in one of two ways. Using the arrow keys the highlight bar may be moved over the desired choice. Pressing <ENTER> causes selection of the choice highlighted. In most cases each choice has a hot-key, or highlighted letter, which may be pressed causing instant selection of the choice.

Another operating consideration of the Desktop2 System Diagnostics is during test execution the testing of the current device may be aborted by pressing <ESC>. This is valid in all testing modes.



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**CONFIGURING THE SYSTEM**

Once loaded, the program attempts to determine the configuration, or components, of the computer being tested. This will take a few seconds, but once done the following screen is displayed:

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```

      SYSTEM CONFIGURATION
Model: 4833/66LX/T
Video Adapter: SUGA
Math Co-Processor: 387/487
PS/2 Mouse: Yes
Base Memory: 640K
Extended Memory: 7168K
COM1: 03F8h, RS-232
COM2: None
COM3: None
COM4: None
LPT1: 03BCh
LPT2: None
LPT3: None
Floppy Drive A: 1.44M 3½
Floppy Drive B: 1.2M 5¼
Hard Drive C: 5,1023,17 (Hds,Cyls,Sects)
Hard Drive D: 8,1023,17 (Hds,Cyls,Sects)

Is The Above System Configuration Correct (Y/N)? Y
```

The Desktop2 System Diagnostics program uses the system configuration information displayed to determine the extent and type of testing performed. If the configuration shows a device installed, that device will be tested. Similarly if an installed device does not show up in the configuration, it will not be tested. Therefore, this information should be reviewed closely for accuracy, and corrected if needed.

**NOTE**

The data values displayed with the screens in this manual are for demonstration purposes only and will vary depending on the system's configuration.

## TANDY COMPUTER PRODUCTS

If the displayed configuration is not correct, or changes are desired, press <N> and the device selection options will appear.

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SYSTEM CONFIGURATION	
<A>	Model: 4833/66LX/T
<B>	Video Adapter: SUGA
<C>	Math Co-Processor: 387/487
<D>	PS/2 Mouse: Yes
<E>	Base Memory: 640K
<F>	Extended Memory: 7168K
<G>	COM1: 03F8h, RS-232
<H>	COM2: None
<I>	COM3: None
<J>	COM4: None
<K>	LPT1: 03BCh
<L>	LPT2: None
<M>	LPT3: None
<N>	Floppy Drive A: 1.44M 3 1/2
<O>	Floppy Drive B: 1.2M 5 1/4
<P>	Hard Drive C: 6,1023,17 (Hds,Cyls,Sects)
<Q>	Hard Drive D: 8,1023,17 (Hds,Cyls,Sects)
<X>	Exit Configuration

Select The Device or Devices You Wish To Change: █

To change the configuration of a device, simply press its corresponding letter and an option window will pop-up with the available choices.

The configuration selection uses the menuing system. Notice as the highlight bar is moved the device configuration changes along with the highlighted choice. Any time the pop-up window is displayed pressing <ESC> may be used to abort the configuration change.

The COM and LPT port addresses cannot be configured. These are detected and assigned the channel identification by the computer's BIOS ROM. Therefore if BIOS does not detect a COM or LPT port it may not be configured. If one is detected however it may be excluded from being tested by selecting the appropriate configuration choice.

Most devices may be skipped, or excluded, from testing by configuring them as "NONE" or "EXCLUDED". For the Hard Drives, this may be accomplished by entering zero (0) for the head number. The exclusion of a device may be desirable to speed the testing and concentrate on a certain device.

## NOTE

Incorrect test results may be generated if an attempt is made to test a device which is not actually installed in the computer system.

The following indicates the configurations supported for each of the devices:

<b>Model:</b> Universal 2500SX-16 2500SX-20 2500SX-25 2500RSX 4820SX/T 4825SX/50EP 4833/66LX/T Omni		<b>Video Adapter:</b> Monochrome CGA EGA VGA SVGA	
<b>PS/2 Mouse:</b> Yes No		<b>NDP:</b> None 8087 80287 387/487 Unknown	
<b>Base Memory:</b> 0 - 640K in 64K steps			
<b>Extended Memory:</b> 0 - 64512K in 64K steps			
<b>COM Ports:</b>		<u>Address :</u> None * 03F8h * 02F8h * 03E8h * 02E8h *	<u>Type :</u> RS-232 Tandy Modem Hayes Modem MS Mouse Logitech Mouse Don't Test
<b>LPT Ports:</b>		<u>Address :</u> None * 03BCh * 0378h * 0278h *	<u>Type :</u> Include In Testing Exclude From Testing
<b>Floppy Drive:</b> None 360K 5¼ 1.2M 5¼ 720K 3½ 1.44M 3½ 2.88M 3½		<b>Hard Drive:</b> Heads 1-255 Cylinders 1-1024 Sectors 1-63	

\* Not user configurable.

**TESTING LEVEL SELECTION**

With the System Configuration completed the first level of testing options screen is displayed:

TEST OPTIONS		TEST	STATUS	ERRORS
<1>	Automatic Testing			
<2>	Manual Testing			
<3>	Display Error Log			
<4>	Exit To DOS			
SELECT DESIRED OPTION: █				

This screen may be divided into two (2) sections:

**TEST OPTIONS****TEST STATUS**

**TEST OPTIONS:** This section lists the options available at this level of testing.

**Automatic Testing:** Selection of this option begins execution of the tests which require no user response. These tests include:

Main Logic Board	Hard Drive(s)
Serial Port(s) <u>LIMITED</u>	Memory
Floppy Drive(s) <u>LIMITED</u>	

Each of these tests will be executed in sequence with the results being displayed in the Test Status area and any errors recorded onto the diskette error log.

**Manual Testing:** This selection allows the user full control and selection of the tests. Refer to the "Manual Testing Options" section of this manual for further details.

**Display Error Log:** This option allows displaying, or printing, the error log stored on disk. Refer to the "Error Log Display" section of this manual for further details.

**Exit To DOS:** This option exits the program and returns to the DOS prompt.

**TEST STATUS:** This section displays the current status of each test and includes the name of the test, its status (TESTING, PASSED, FAILED, ABORTED or SKIPPED) and the error count for that test as stored on the disk.

**MANUAL TESTING OPTIONS**

With the selection of Manual Testing, the second level of options and the manual test screen are displayed:

```

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```

TEST	STATUS	ERRORS
<b>TEST OPTIONS</b> <1> Main Logic Board <2> Keyboard & PS/2 Mouse <3> Video Adapter <4> Serial Port(s) <5> Parallel Port(s) <6> Floppy Drive(s) <7> Hard Drive(s) <8> Memory Error Log Display Group Testing Reconfigure System Quit To DOS  SELECT DESIRED OPTION: █		

  

SYSTEM CONFIGURATION	
Model: 4833/66LX/T	Base Mem: 640K
Video: VGA	Ext. Mem: 7168K
NBP: 387/487	PS/2 Mouse: Yes
COM1: RS-232	COM2: None
COM3: None	COM4: None
LPT1: 03BCh	LPT2: None
LPT3: None	
FD A: 1.44M 3 1/2	FD B: 1.2M 5 1/4
HD C: 6,1023,17	HD D: 8,1023,17

  

GROUP TESTING MODE:	SINGLE
---------------------	--------

This screen may be divided into four (4) sections:

**TEST OPTIONS**  
**TEST STATUS**

**GROUP TESTING MODE**  
**SYSTEM CONFIGURATION**

**TEST OPTIONS:** Lists the options available within the second level, or manual mode, of testing. For detailed information on each option, refer to the appropriate section of this manual.

**TEST STATUS:** This section displays the current status of each test and includes the name of the test, its status (TESTING, PASSED, FAILED, ABORTED or SKIPPED) and the error count for that test as stored on the disk.

**GROUP TESTING MODE:** Displays the current testing mode, single or continuous.

**SYSTEM CONFIGURATION:** Displays the current system configuration as defined from the System Configuration screen.

## MAIN LOGIC BOARD:

The Main Logic Board test performs multiple tests on major components located on the computer's main logic board. The tests performed are identical for Automatic and Manual modes, requiring no user intervention.

Six components are tested:

- CPU - Central Processing Unit
- NDP - Numeric Data Processor
- PIT - Programmable Interval Timer
- PPI - Programmable Peripheral Interface
- PIC - Programmable Interrupt Controller
- CMOS - Battery-Backed Memory

A graphic display shows the progress of the test. If a component should fail the test will stop and return with a "FAILED" status and the error recorded in the Error Log.

## KEYBOARD & PS/2:

The Keyboard and PS/2 Mouse test requires each function to be visually verified. For this reason it is not supported under the Automatic or Group testing modes. The number of functions, or modules, tested depends upon the configuration of the computer being tested. The Keyboard and PS/2 Mouse test will automatically skip any function that is not supported by the model and PS/2 mouse options selected during the System Configuration process.

The following functions will be tested (if applicable):

- Individual key function
- Key repeat rate function
- PS/2 mouse movement and button functions

To test the individual keys, the keyboard layout is shown on the screen. Each key should then be pressed until all keys have been tested. When finished pressing and releasing each key, press the <ALT> and <SYSRQ> keys simultaneously to exit the test. Upon exiting there will be a prompt asking if all keys have functioned correctly. If any of the keys displayed on the keyboard layout were untested (solid) or remained pressed (blinking), the test should be failed by pressing <N>, otherwise press <Y> to pass the test. Pressing <ESC> will abort the test immediately.

## TANDY COMPUTER PRODUCTS

KEY REPEAT RATE	SPEED: FAST
■	

1. Press And Hold A Key To See The Repeat Speed.
2. Press <SPACE> To Change the Repeat Rate Speed.
3. Press And Hold A Key To See The New Repeat Speed.
4. Press <ESC> To Continue.

The key repeat rate test displays the screen above. This test switches the key repeat rate between fast and slow, testing the typematic function of the keyboard.

To test the key repeat rate, press and hold a key down and notice the repeat speed. Then press <SPACE> to switch to slow speed. The display will change to **SLOW** to reflect the change in repeat rate. Press and hold a key down and again notice the repeat speed. Press <ESC> when finished with the rate change. Upon exiting the test a prompt appears asking if the rate changed between the fast speed and the slow. If a difference was noticed between the two, press <Y> to pass the test, otherwise press <N> to fail the test. Pressing <ESC> will abort the test immediately.

Mouse Cursor Area		
Mouse Status		
Direction Status:		Untested
Left Button: Released	:	Untested
Right Button: Released	:	Untested

1. Move Mouse In Each Direction.
2. Press Each Button.
3. Press <ESC> To Exit.

If a PS/2 mouse has been selected in the Configuration process, the above screen is displayed next. This is the PS/2 Mouse Test screen.

The movement of the mouse and mouse buttons should now be tested by moving the mouse in all directions and pressing both of the buttons. When testing is completed, press <ESC>. If any problems are detected the error message will be recorded.

## VIDEO ADAPTER:

The Video Adapter test requires each mode to be visually verified. For this reason it is not supported under the Automatic or Group testing functions. There are two different testing sequences available, color and monochrome. Color may have up to eighteen (18) functions tested where monochrome may have up to ten (10) functions. The number of functions, or modes, tested depends upon the video configuration of the computer being tested. The Video Adapter test will automatically skip any mode that is not supported by the video adapter selected during the System Configuration process.

The video adapters supported include:

Monochrome	- Black and White
CGA	- Color Graphics Adapter
EGA	- Enhanced Graphics Adapter
VGA	- Video Graphics Array
SVGA	- Super Video Graphics Array

The video test set, color or monochrome, is automatically detected by the test program. However, on some VGA adapters color modes can be emulated with a monochrome monitor attached. In this case the color tests will be performed using a gray scale as color. If the monochrome test set is desired the adapter must be configured such that it does not emulate color modes.

Some video modes require a special Multisync monitor. The Video Adapter test cannot tell if the monitor attached is a multisync type and therefore must ask. A multisync monitor is capable of automatically switching horizontal frequencies to accommodate the different video output rates. If the monitor does not in some form say "multisync", or its type is unknown, press <N> to answer the monitor type question.

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### NOTE

The adapter type of the 2500 RSX defaults to VGA. Choosing SVGA for this machine causes certain modes to be displayed incorrectly.

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## TANDY COMPUTER PRODUCTS

Each video function, or mode, will display a screen with a description of what should have been seen. After looking at the display, pressing any key will return to the main Pass, Fail or Abort screen.

TEXT MODES	GRAPHIC MODES	
Attribute Table	320 x 200 x 4	640 x 400 x 256
Video Pages	320 x 200 x 16	640 x 480 x 256
Full Screen Color	640 x 200 x 16	800 x 600 x 16
80 x 25 Character Set	640 x 350 x 16	1024 x 768 x 16
132 x 25 Character Set	640 x 480 x 16	Split Screen
132 x 43 Character Set	320 x 200 x 256	Pixel Scroll/Pan
Press <P> To Pass Mode, <F> To Fail Mode or <A> To Abort Testing: ■		

This screen may be divided into three (3) sections:

**TEXT MODES****GRAPHIC MODES****OPTIONS**

**TEXT MODES:** This section lists the Text functions, or modes, tested. The function, or mode, previously tested will be indicated by a blinking arrow. Any functions, or modes, that are not supported in the current video configuration will be displayed in a low intensity red. These modes will be automatically skipped by the program.

During Graphic Mode tests, this area will contain a brief description of "What You Should Have Seen" on the previous graphic screen.

**GRAPHIC MODES:** This section lists the Graphic functions, or modes, tested. The function, or mode, previously tested will be indicated by a blinking arrow. Any functions, or modes, that are not supported in the current video configuration will be displayed in a low intensity red. These modes will be automatically skipped by the program.

During Text Mode tests, this area will contain a brief description of "What You Should Have Seen" on the previous text screen.

**OPTIONS:** This section lists the options available. If the previous screen looked as described press <P> to pass the mode otherwise press <F> to fail the mode. To abort the video test and return to the main menu press <A>.

Passing a mode causes the program to continue to the next mode. Failing a mode causes the program to return to the main menu with the appropriate FAILED status and error message recorded. Aborting causes the program to return to the main menu with an ABORTED status but no error logged.

Along with the arrow indicating the mode just seen, is a "WHAT YOU SHOULD HAVE SEEN" screen. These help screens further describe what should have been seen during the previous test to aid in determining the pass or fail status of the test.

---

### CAUTION

Displaying a video mode on a system that does not support it may cause damage to the video system if left up for an extended period of time.

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## TANDY COMPUTER PRODUCTS

Following are the functions or modes tested and which video adapters support these modes.

COLOR MODES		
TYPE	TEST MODE	ADAPTERS
T <sup>(1)</sup>	Attribute Table	ALL
T	Video Pages	ALL
T	Full Screen Color	ALL
T	80 x 25 Character Set	ALL
T	132 x 25 Character Set	SVGA
T	132 x 43 Character Set	SVGA
G <sup>(2)</sup>	320 x 200 x 4	ALL
G	320 x 200 x 16	EGA/VGA/SVGA
G	640 x 200 x 16	EGA/VGA/SVGA
G	640 x 350 x 16	EGA/VGA/SVGA
G	640 x 480 x 16	VGA/SVGA
G	320 x 200 x 256	VGA/SVGA
G	640 x 400 x 256	SVGA
G	640 x 480 x 256	SVGA <sup>(3)</sup>
G	800 x 600 x 16	SVGA <sup>(3,4)</sup>
G	1024 x 768 x 16	SVGA <sup>(3,4)</sup>
T	Split Screen	VGA/SVGA
T	Pixel Scroll/Pan	VGA/SVGA

MONOCHROME MODES		
TYPE	TEST MODE	ADAPTERS
T	Attribute Table	ALL
T	80 x 25 Character Set	ALL
T	80 x 43 Character Set	EGA/VGA/SVGA
T	132 x 25 Character Set	SVGA <sup>(5)</sup>
T	132 x 43 Character Set	SVGA <sup>(5)</sup>
G	640 x 350 x 2	EGA/VGA/SVGA
G	800 x 600 x 2	SVGA <sup>(3,4,5)</sup>
G	1024 x 768 x 2	SVGA <sup>(3,4,5)</sup>
T	Split Screen	VGA/SVGA
T	Pixel Scroll/Pan	VGA/SVGA

- (1) - T = Text Mode
- (2) - G = Graphic Mode
- (3) - Requires 512K of video memory
- (4) - Requires Multisync monitor
- (5) - Not supported by WD90C30 or 31 chips

Text mode character sets are described as Columns x Rows.  
Graphic modes are described as Columns x Rows x Colors.

## SERIAL PORT(S):

The Serial Port(s) test performs multiple tests on all installed communication ports. The configuration of these communication ports determines what test if any is executed. The functionality of the Automatic and Manual modes are somewhat different for this test.

In Automatic mode, only an internal loopback test is executed regardless of the configured device associated with the communication port.

In Manual mode, an appropriate test is executed depending on the type of configured device, e.g. RS-232, mouse, or modem. For the RS-232 device type only an internal loopback test is executed. For the modem and mouse device types an internal loopback test is executed at the beginning of the test. After the internal loopback test is completed instructions will be given for the additional test.

For the modem device type the following message will appear.

MODEM TEST	
To test modem, please:	
1.	Obtain a phone number to dial
2.	Connect the modem to the phone line
3.	If the modem is external, turn the modem on
4.	Adjust communication parameters if known to be different
PRESS <ESC> TO QUIT, ANY OTHER KEY TO CONTINUE ■	

This message describes the procedure to follow for testing a modem. To abort the modem test press <ESC>, otherwise follow the given instructions and press any other key to continue. Another screen will then be displayed showing the default port configuration parameters.

Port Configuration	
<1> Interrupt	: IRQ 4
<2> Baud Rate	: 300
<3> Word Length	: 8
<4> Parity	: NONE
<5> Stop Bits	: 1

## NOTE

As with any terminal package, this configuration must be set correctly for proper functionality of the modem.

The port configuration selection uses the menuing system. Notice as the highlight bar is moved the parameter changes along with the highlighted choice. Any time the pop-up window is displayed pressing <ESC> may be used to abort the configuration change. Once the proper configuration is obtained press <ESC> to continue the modem test. The following screen will then be displayed.

## TANDY COMPUTER PRODUCTS

Dialing Information	
Dial Mode	: Tone
Phone Number	:

&lt;SPACE&gt; CHANGE DIAL MODE

&lt;ENTER&gt; NEXT OPTION

&lt;ESC&gt; TO EXIT TEST

The dial mode may be selected by pressing <SPACE>. Once the correct dial mode is selected press <ENTER>. The correct phone number should then be entered. During any part of this procedure <ESC> may be pressed to exit the Serial Port(s) test. After the phone number is entered press <ENTER> for the following screen.

TERMINAL MODE:

COMMUNICATION PORT #2

BAUD RATE : 300

&lt;CTRL-B&gt; BREAK

&lt;CTRL-E&gt; ECHO ON/OFF

&lt;CTRL-X&gt; ASCII/HEX DISPLAY

&lt;ESC&gt; EXIT

If the dialing and connection process is successful, communication with the host computer should be possible. When communicating with the host, press <CTRL-B> to send a true break, <CTRL-E> to turn local echo on or off, or <CTRL-X> to display the hex value of the characters received or the normal ASCII text. When communication testing is completed press <ESC>. This causes the modem to hang up and the following screen is displayed.

MODEM TEST	
What you should have seen:	
1. Readable ASCII characters on the screen	
Press <P> if the Test Passed. <F> if Test Failed ■	

It must be determined if communication with the host computer resulted in readable characters. If readable ASCII characters were visible then press <P>, otherwise press <F> indicating the test failed.

## TANDY COMPUTER PRODUCTS

For the mouse device type the following screen will appear.

Movement Area	
██████████	██████████
██████████	██████████
██████████	██████████
██████████	██████████
██████████	██████████
██████████	██████████

TO TEST: 1) Move cursor to each corner  
2) Press all buttons

Button Status  
LEFT RIGHT  
Up Up

PRESS <ESC> TO EXIT

---

**NOTE**

If the device is configured as a Logitech mouse, a message indicating the mouse is being initialized is displayed and the mouse should not be moved during this initialization.

---

The movement of the mouse and mouse buttons should now be tested by moving the mouse in all directions and pressing all of the buttons. When testing is completed, press <ESC>. If any problems are detected the error message will be recorded.

**PARALLEL PORT(S):**

The Parallel Port test must be visually verified. For this reason it is not supported under the Automatic or Group testing functions. The parallel port test will check any parallel ports that have been selected in the Configure System process by printing the character set and sending control codes to the printer.

PRINTER CHARACTER & CONTROL CODE TEST	PORT: LPTx, xxxx
To test printer characters, please: 1. Connect a printer to the port shown above 2. Install paper in the printer 3. Turn printer on 4. Ensure printer is on-line PRESS <ESC> TO QUIT, ANY OTHER KEY TO CONTINUE ■	

The above screen is displayed prompting for the connection of the printer to the port under test. Follow all directions to ensure the printer is operational. The port under test is shown in the upper right corner along with the base I/O address of that port.

PRINTER CHARACTER & CONTROL CODE TEST	PORT: LPTx, xxxx
Select Which Type of Control Codes this Printer Uses:  TANDY IBM EPSON HP LaserJet	

The screen above is shown next and uses the menuing system to select which type of control codes the printer accepts. The port under test is shown in the upper right corner along with the base I/O address of that port. Please refer to the printer manual if there are any questions as to the correct control code type to select.

The test then attempts to print characters and control codes. During the test the graphic display will update indicating test progress.

PRINTER CHARACTER & CONTROL CODE TEST	PORT: LPTx, xxxx
The Printer Connected to the above Port has not Responded in the Required Amount of Time. PRESS 'F' TO FAIL THE TEST, ANY OTHER KEY TO RETRY ■	

If the test detects any problem while printing, it will continue to retry printing for a certain time period. If after this period the problem is still detected, the above screen is displayed. Possible causes of printing problems include having the printer not connected, the printer is off-line, the printer is out of paper, or possibly some other type of hardware problem. Ensure the printer is connected, on-line, and has paper, then press a key other than the <F> key to retry. If, after retrying, this message is still displayed, then press <F> to fail the test.

## TANDY COMPUTER PRODUCTS

PRINTER CHARACTER & CONTROL CODE TEST	PORT: LPTx, xxxx
What should have printed out:	
1. Readable standard ASCII characters	
2. Appropriate printer control codes	
PRESS 'F' TO FAIL THE TEST, ANY OTHER KEY TO RETRY ■	

When the test has completed sending data to the printer the above screen is shown. Please note that the printer may still be printing when this screen appears. If, after examining the printout, readable characters and appropriate control codes effects were printed then press <P> to pass the test. If the printout was in any way unreadable, press <F> to fail the test.



## FLOPPY DRIVE(S):

The Floppy Drive test performs multiple tests on the configured floppy drives. The functionality of the Automatic and Manual modes are somewhat different.

The Automatic mode performs a read only test. In a single floppy drive system the program diskette itself is used for testing. As with a single floppy drive system, a two floppy drive system uses the program diskette for testing the first floppy drive, but the second floppy drive will be tested only if a diskette is inserted in the drive, otherwise this drive is skipped.

The Manual mode provides the opportunity to do a write test in addition to a read test. This option is presented immediately following the selection of the Floppy Drive test. The test type window appears as follows.

TEST TYPE
<1> Read Only
<2> Read and Write

The test type selection window uses the menuing system. After this selection the following information will be displayed providing instructions on removing the program diskette and inserting a formatted diskette.

FLOPPY DRIVE TEST	DRIVE: A
To test the drive shown above, please:	
1. Remove the program diskette from drive	
2. Insert a formatted 1.44M 3 1/2 inch diskette into drive	
WARNING : The data on this disk will be destroyed ?	
PRESS <ESC> TO QUIT, <C> TO CONTINUE ■	

The warning message will only be displayed if the read and write test was selected in the test type window. After the instructions have been followed press <ESC> to exit the Floppy Drive(s) test or <C> to continue. If testing is continued and a second floppy drive exists, information similar to the previous screen will be displayed with the appropriate data for that drive. Again, <ESC> may be pressed to exit the Floppy Drive(s) test or <C> to continue. For a thorough test of the floppy drive(s), the Manual mode requires that a maximum capacity diskette for that drive be inserted.

After the testing of the floppy drive another information screen is displayed providing instructions on removing the test diskette and inserting the program diskette in the first drive. It is imperative that this step be followed in order to update the error log and for proper functionality of the test menu options.

In both the Manual and Automatic modes a graphic display shows the progress of the test. If a drive fails, the test will stop and return with a "FAILED" status and the error recorded in the Error Log.

**HARD DRIVE(S):**

The Hard Drive test performs multiple tests on the configured hard drives. The tests performed are identical for Automatic and Manual modes, requiring no user intervention. The tests performed on the hard drive are the slow seek test which reads the tracks on the outer portion of the disk and the tracks on the inner portions of the disk, the sequential test which reads in order a series of tracks on a given portion of the drive, and the random test which picks random tracks to read.

---

**NOTE**

This test does **not** include a destructive write, therefore no data should be lost by executing this test.

---

A graphic display shows the progress of the test. If a drive fails, the test will stop and return with a "FAILED" status and the error recorded in the Error Log.

**MEMORY:**

The Memory test performs multiple tests on base system memory and extended memory, if applicable. The memory types tested depend on the model selected in the Configuration Process and the amount of Base and Extended memory selected. The tests performed are identical for Automatic and Manual modes, requiring no user intervention.

A graphic display shows the progress of the test. If a memory failure should be detected the test will stop and return with a "FAILED" status and the error recorded in the Error Log.

**ERROR LOG DISPLAY:**

The Error Log Display option displays on the screen, or prints to the printer, the error log stored on diskette. When selected, the error log display screen and the error options are displayed:

PASS	Error Log Display TEST OPTION	ERROR DESCRIPTION
		<div> Display Error Messages  Print Error Messages  Clear Errors &amp; Return  Return To Test Options </div>

**Display Error Messages:** Displays the error log file on the screen.

**PASS:** Displays the pass number in which the error occurred.  
This will be a "1" unless the error occurred during "Group Testing".

**TEST OPTION:** Describes which test caused the error.

**ERROR DESCRIPTION:** Describes the nature of the error.

**Print Error Messages:** Prints the error log file to the printer.

**Clear Errors & Return:** Clears all error counts on screen and diskette, and then returns to the Test Options menu.

**Return To Test Options:** Returns to the Test Options menu keeping all error messages.

During the display of the error log there may be 1 or more pages of information to display. The lower right corner of the display window may contain the following options indicating page display location:

<b>PAGE DOWN</b>	- Page 1 of multiple pages
<b>PAGE UP</b>	- Last page of multiple pages
<b>PAGE UP/DN</b>	- Between the first and last page of multiple pages
<u>          </u>	- Only one page

The <PAGE UP> and <PAGE DOWN> keys allow scrolling through the multiple pages of information. Pressing <ESC> exits the current display option and returns to the current menu.

## GROUP TESTING:

The Group Testing option allows selection of the tests to perform. For example, with all tests selected and in continuous mode, Group Testing is identical to Automatic Testing. When selected the Group Testing options are displayed:

```

DESKTOP2 MS-DOS SYSTEM DIAGNOSTICS Version 1.00
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```

TEST OPTIONS	TEST	STATUS	ERRORS
<1> Main Logic Board			
<4> Serial Port(s)			
<6> Floppy Drive(s)			
<7> Hard Drive(s)			
<8> Memory			

  

<1> Main Logic Board <4> Serial Port(s) <6> Floppy Drive(s) <7> Hard Drive(s) <8> Memory Begin Group Testing Test Continuous SELECT TEST or <ESC> to ABORT: █ GROUP TESTING MODE: SINGLE	SYSTEM CONFIGURATION Model: 4833/66LX/T Base Mem: 640K Video: SUGA Ext. Mem: 7168K NDP: 387/487 PS/2 Mouse: Yes COM1: RS-232 COM2: None COM3: None COM4: None LPT1: 838Ch LPT2: None LPT3: None FD A: 1.44M 3 1/2" FD B: 1.2M 5 1/4" HD C: 6,1023,17 HD D: 8,1023,17
--	---

Notice that under the Test Options screen title the tests which do not support Automatic or Group testing are removed from the display. These tests may not be selected.

**Test Include/Exclude (1, 4, 6, 7, 8):** To include a test in the Group testing, simply press the corresponding number. An arrow will be displayed to the left of the test name. Pressing the same number again will remove the test from the group.

**Begin Group Testing:** After the test, or tests, have been selected, this option begins testing.

**Test Continuous/Single:** This option allows the selection of either performing each test once (Single) or testing Continuously until stopped.

## RECONFIGURE SYSTEM:

During the course of testing it may be desired to exclude a device or in some other way change the system configuration. This option returns to the System Configuration screen allowing any configuration changes.

## QUIT TO DOS:

This option exits the Desktop2 System Diagnostics program and returns to the DOS prompt.

**APPENDIX****TEST ERROR MESSAGES****MAIN LOGIC BOARD TEST:**

CPU Flags/Registers Failed  
NDP Calculations Failed  
PIT Channel 2 Failed  
PPI Port B Failed  
PIC Mask Register Failed  
CMOS Battery/RAM Failed

**KEYBOARD & PS/2 MOUSE TEST:**

Individual Key Testing Failed  
Key Repeat Rate Test Failed  
PS/2 Mouse Test Failed: No Movement Detected  
PS/2 Mouse Test Failed: Buttons Not Pressed  
PS/2 Mouse Test Failed: Mouse Not Initializing  
PS/2 Mouse Test Failed: Not All Directions Tested  
PS/2 Mouse Test Failed: Right Button Not Pressed  
PS/2 Mouse Test Failed: Left Button Not Pressed

**VIDEO ADAPTER TEST:**

Character Attributes Failed  
Video Pages Failed  
Full Screen Color Failed  
80 x 25 Text Mode Failed  
80 x 43 Text Mode Failed  
132 x 25 Text Mode Failed  
132 x 43 Text Mode Failed  
320 x 200 x 4 Graphic Mode Failed  
320 x 200 x 16 Graphic Mode Failed  
640 x 200 x 16 Graphic Mode Failed  
640 x 350 x 2 Graphic Mode Failed  
640 x 350 x 16 Graphic Mode Failed  
640 x 480 x 16 Graphic Mode Failed  
720 x 348 x 2 Graphic Mode Failed  
320 x 200 x 256 Graphic Mode Failed  
640 x 400 x 256 Graphic Mode Failed  
640 x 480 x 256 Graphic Mode Failed  
800 x 600 x 2 Graphic Mode Failed

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800 x 600 x 16 Graphic Mode Failed  
1024 x 768 x 2 Graphic Mode Failed  
1024 x 768 x 16 Graphic Mode Failed  
Split Screen Failed  
Pixel Scroll/Pan Failed

**SERIAL PORT(S) TEST:**

COMx: Internal Loopback Test Failed  
COMx: Modem Test Failed  
COMx: Mouse Test Failed  
COMx: Mouse Test Failed: No Movement Detected  
COMx: Mouse Test Failed: Buttons Not Pressed  
COMx: Mouse Test Failed: Mouse Not Initializing  
COMx: Mouse Test Failed: Not All Directions Tested  
COMx: Mouse Test Failed: Right Button Not Pressed  
COMx: Mouse Test Failed: Left Button Not Pressed  
COMx: Mouse Test Failed: Middle Button Not Pressed

x = 1, 2, 3 or 4 for COM1, COM2, COM3 and COM4.

**PARALLEL PORT(S) TEST:**

LPTx: Printer Not Ready  
LPTx: Printer Character Set Test Failed  
LPTx: Printer Timeout

x = 1, 2, or 3 for LPT1, LPT2 and LPT3.

**FLOPPY DRIVE(S) TEST:**

x: General Error  
x: Read Error, Head #, Cylinder #  
x: Write Error, Head #, Cylinder #  
x: Not Ready  
x: Controller Failed  
x: Controller Reset Failed

x = A or B for FDDA and Fddb.  
# = Numeric Value

**HARD DRIVE(S) TEST:**

x: General Error  
x: Read Error, Head #, Cylinder #  
x: Not Ready  
x: Controller Failed  
x: Controller Reset Failed

x = C or D for HDDC and HDDD.  
# = Numeric Value

**MEMORY TEST:**

Not Enough Memory To Run Test or Memory Corrupt  
System At #:#, Wrote: #, Read: #  
Address At # meg #:#, Wrote: #, Read: #  
Parity At # meg #:#  
Extended At # meg #:#, Wrote: #, Read: #

# = Numeric Value

**GENERAL ERROR MESSAGES****ACCESS DENIED:**

Indicates a memory or internal program error occurred. Retry the function or reboot the computer.

**ERROR LOG FILE NOT FOUND:**

DOS was unable to find the error log file. Retry the function or reboot the computer.

**ERROR LOG FILE IS FULL:**

Indicates the Error Log file can not store any more messages. The program's Error Log can hold a maximum of 300 errors. Clear the Error Log and continue.

**ERROR LOG PATH NOT FOUND:**

DOS was unable to find the error log path. Retry the function or reboot the computer.

**FILE NOT FOUND:**

The program was unable to find the file for the selected test. Retry the function or reboot the computer.

**INSUFFICIENT DISK SPACE:**

Indicates the diskette is unable to hold any more errors in the Error Log on the disk because the diskette is full.

**INSUFFICIENT MEMORY:**

The program was unable to allocate memory for the selected test. Retry the function or reboot the computer.

**INVALID ERROR LOG FILE:**

Indicates the Error Log file has been corrupted. Clear the Error Log and retry.

**INVALID ACCESS CODE:**

Indicates a memory or internal program error occurred. Retry the function or reboot the computer.

**INVALID HANDLE:**

Indicates a memory or internal program error occurred. Retry the function or reboot the computer.

**NO DEVICES ACTIVE TO TEST:**

The test option selected has no devices to test because they have either been excluded or there is none installed.

**NO PRINTER PORT AVAILABLE:**

There is no printer port available to print the error log.

**NO HANDLE AVAILABLE:**

Indicates a memory or internal program error occurred. Retry the function or reboot the computer.

**LOG FILE PATH NOT FOUND:**

DOS could not find the pathname of the log file. Retry the function or reboot the computer.

**UNDEFINED:**

An unknown error occurred. Retry the function or reboot the computer.



## SERVICE POLICY

Radio Shack's nationwide network of service facilities provides quick, convenient, and reliable repair services for all of its computer products, in most instances. Warranty service will be performed in accordance with Radio Shack's Limited Warranty. Non-warranty service will be provided at reasonable parts and labor costs.

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