PowerMate™ 1 Series
PowerMate 1 (8/10 MHz)
PowerMate 1 Plus

```
[RDY]
****************** T&D COMPONENT MENU (REV 001 00) ******************
                              COPYRIGHT(C)1988 BY NEC CORPORATION
NO  MODULE NAME           REV      NO  MODULE NAME           REV
01  MAIN MEMORY TEST      001 01   02  MPU TEST (R MODE)      001 00
03  MPU TEST (P MODE)     001 01   04  SYSTEM CLOCK TEST      001 01
05  KEYBOARD TEST         003 00   06  CGB TEST               003 00
07  AGB TEST              003 03   08  FLOPPY DISK TEST       003 00
09  HARD DISK TEST        005 00   10  SERIAL PORT TEST
11  PARALLEL PORT TEST    002 00   12  ESDI DISK TEST
13  MOUSE TEST            001 01   14  VGB TEST


ENTER MODULE NO.
PRESS ENTER
```
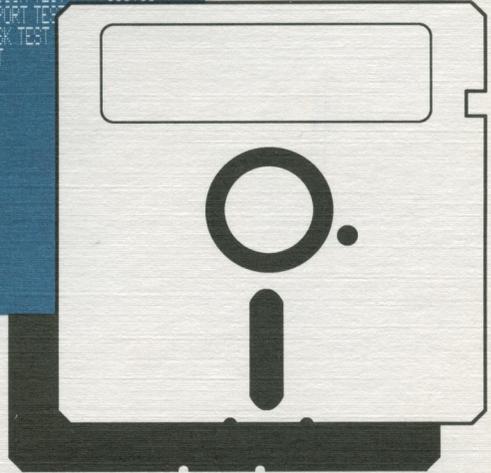
System Checking Program Guide
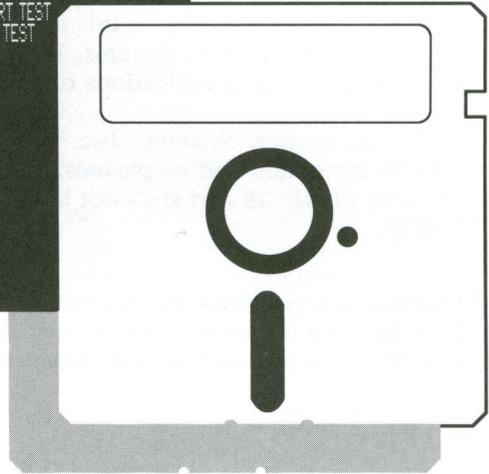
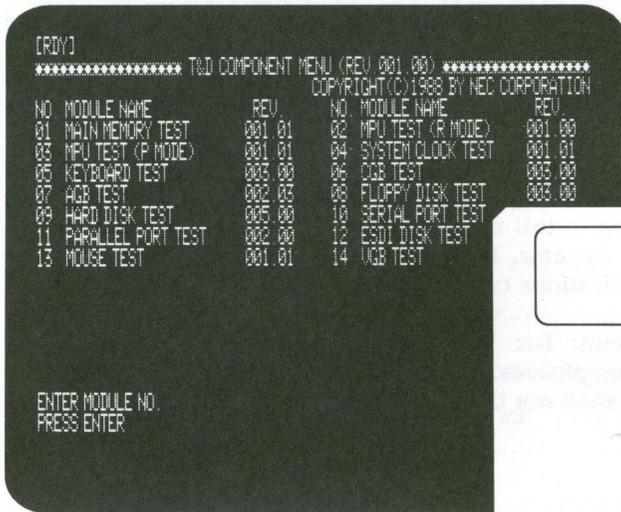# NEC
NEC Information Systems, Inc.

PowerMate™ 1 Series
PowerMate 1 (8/10 MHz)
PowerMate 1 Plus

```
[RDY]
********************* T&D COMPONENT MENU (REV 001.00) *********************
                         COPYRIGHT(C)1988 BY NEC CORPORATION
NO. MODULE NAME          REV.     NO. MODULE NAME          REV.
01  MAIN MEMORY TEST     001.01   02  MPU TEST (R MODE)    001.00
03  MPU TEST (P MODE)    001.01   04  SYSTEM CLOCK TEST    001.01
05  KEYBOARD TEST        003.00   06  CGB TEST             003.00
07  AGB TEST             002.03   08  FLOPPY DISK TEST     003.00
09  HARD DISK TEST       005.00   10  SERIAL PORT TEST
11  PARALLEL PORT TEST   002.00   12  ESDI DISK TEST
13  MOUSE TEST           001.01   14  VGB TEST



ENTER MODULE NO.
PRESS ENTER
```

System Checking Program Guide

NEC
NEC Information Systems, Inc.

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Contents

THE SYSTEM CHECKING PROGRAM

The PowerMate™ 1 Series System Checking diskette comes with your system unit and contains the System Checking program. This program checks the functions of the hardware components. With the help of this program, you can isolate any problem to either the hardware or to the software you are using.

> This System Checking diskette is designed for use with NEC equipment. If other equipment is used, the System Checking program may not run as intended.

If the System Checking program indicates any hardware errors, call your hardware dealer. If the program indicates that your hardware is operating properly, any problem you have is due to your software. When this is the case, call your software dealer.

LOADING THE PROGRAM

Use the following procedure to load your System Checking diskette. Also refer to your owner's guide.

> The System Checking diskette is a self-booting program. You can run the program before or after running the system setup utility.

1. Remove diskettes from all drives.

2. If your system unit power is on, turn it off.

> If your unit is already configured, simply insert your System Checking diskette in Drive A, label side up, and turn on the system power. The program menu appears on the screen.

3. Turn on the system unit. The system unit power lamp lights. If your display is not already on, turn it on. If you have an NEC MultiSync® II or an Advanced Color Display, the display power lamp lights.

   The system power-on screen appears. If you have installed your system unit for the first time, or have changed any of the system hardware, the following message is displayed.

   > Invalid configuration information – please run SETUP program
   > Strike F1 key to continue

   Two beeps indicate that the system has completed its power-on self-test. If the system unit beeps continuously, turn off the system unit power and try again. If the beeping persists, turn off the system unit and the display and call your NEC dealer. You cannot load the System Checking program when this condition exists.

4. Raise the top drive (drive A) load lever. Insert the System Checking diskette, label side up, into the drive.

5. Lower the drive load lever.

6. Press **F1** to load the diskette into system memory. Program loading takes about 10 seconds. Two beeps indicate that the program is loaded. The following program menu appears on the screen.

```
[RDY]
******************** T&D COMPONENT MENU (REV.001.00) ********************
                               COPYRIGHT(C)1988 BY NEC CORPORATION
 NO. MODULE NAME            REV.     NO. MODULE NAME            REV.
 01  MAIN MEMORY TEST       001.01   02  MPU TEST (R MODE)      001.00
 03  MPU TEST (P MODE)      001.01   04  SYSTEM CLOCK TEST      001.01
 05  KEYBOARD TEST          003.00   06  CGB TEST               003.00
 07  AGB TEST              002.03    08  FLOPPY DISK TEST       003.00
 09  HARD DISK TEST         005.00   10  SERIAL PORT TEST       005.00
 11  PARALLEL PORT TEST     002.00   12  ESDI DISK TEST         001.00
 13  MOUSE TEST             001.01   14  VGB TEST               001.00




 ENTER MODULE NO.
 PRESS ENTER
```

If the program menu, similar to the one above, does not appear, see "ERROR HANDLING." Otherwise, go on to the next section.

RUNNING TESTS

> This *System Checking Program Guide* comes with your system unit. It can be used for all NEC system configurations, except where noted in this guide.

The System Checking program menu displays a list of tests which check specific internal hardware components or external devices connected to your system unit.

To select a test, type the number of the test and press **Enter**. For example, type **1** and press **Enter** to select "1 Main Memory Test."

Each test on the program menu generates a series of screens. When your system is operating properly, the test you are running ends with the following message.

<div align="center">

********** NORMAL END **********

</div>

If the test does not end displaying this message, see "ERROR HANDLING" in this guide.

For best results, read the section in this guide that describes the test you want to select before running it.

When you finish running the System Checking program,

- remove the System Checking diskette from the diskette drive
- turn off the system unit and the display.

1 MAIN MEMORY TEST

This test checks the system's standard 640 kilobytes (KB) of random access memory (RAM).

At the prompt "ENTER MODULE NO.", type **1** and press **Enter**. The following is displayed on the screen.

```
MEMORY                    :   ----------------------

TEST AREA (* = 32 KB)   :  *

        START:MEMORY TEST
```

System checking ends when the number of asterisks (*) displayed on the screen equals the number of hyphens (–).

The Main Memory Test ends with the following message.

```
********** NORMAL END **********
```

If this message appears, all system memory is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

2 MPU TEST (REAL MODE)

This test checks the command execution functions of the system micropro-cessor.

At the prompt "ENTER MODULE NO.", type **2** and press **Enter**. The MPU Test (Real Mode) ends with the following message.

********** NORMAL END **********

If this message appears, the real mode functions of your microprocessor are operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

3 MPU TEST (PROTECT MODE)

This test checks the protect mode of the system microprocessor. Protect mode functions include expansion memory, exceptional processing, protect features, virtual addressing, and the Intel 80287™ coprocessor if installed.

> This test takes about 70 seconds for each memory board installed in the system unit.

At the prompt "ENTER MODULE NO.", type **3** and press **Enter**. The following message appears on the screen.

    START:EXPANSION MEMORY TEST

If you have the standard system memory, the message appears briefly. If you have expansion boards installed in the system unit, this message stays on the screen for up to six minutes.

If this message remains on your screen for more than six minutes, see "ERROR HANDLING."

The MPU Test (Protect Mode) ends with the following message.

    ********** NORMAL END **********

If this message appears, the protect mode functions of your microprocessor are operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

4 SYSTEM CLOCK TEST

This test checks the operation of the system clock and the clock's battery.

At the prompt "ENTER MODULE NO.", type **4** and press **Enter**. The following messages appear sequentially.

- START:SYSTEM CLOCK TEST

- START:READ TEST

- CLOCK COUNT IN SECONDS
                    xx

> If the time on the screen does not advance for every second, see "ERROR HANDLING" in this guide.

- START:BATTERY TEST

The System Clock Test ends with the following message.

********** NORMAL END **********

If this message appears, your system clock and battery are operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

5 KEYBOARD TEST

At the prompt "ENTER MODULE NO.", type **5** and press **Enter**. A keyboard selection menu appears. This is when you select the type of keyboard being used.

If your keyboard has the function keys on the left, you have the 84–key model. Type **1** and press **Enter**. If your keyboard has the function keys along the top, you have the 101–key model. Type **2** and press **Enter**.

The "KEYBOARD FREE TEST" screen appears. The following prompt is displayed on this screen.

> PRESS ANY KEY AND CHECK [ ]

Press any key. The character or key type appears in the bracket.

> When you press the two–character keys at the top of the keyboard, the top characters appear and indicate that these keys are working. For example, if you press the **1** key, the ! character appears in the bracket.
>
> When using the keyboard with 101 keys, the Num Lock key must be off except when running the Num Lock Key Test.

When you have tested as many keys as you want, hold down the left **Shift** key and press **E**.

The Keyboard Test ends with the following message.

> ********** NORMAL END **********

If this message appears, your keyboard is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

If this message appears, your Color Graphics Board and display are operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

7 ADVANCED GRAPHICS BOARD (AGB) TEST

This test checks the AGB or AGB Plus. If you have a different display board, go to the appropriate test.

The AGB test checks the board's two basic modes of operation: alphanumeric (A/N) and all–points–addressable (APA) graphics. If you have the NEC MultiSync II or an Advanced Color Display, the AGB Plus test checks the additional 400–line mode.

At the prompt "ENTER MODULE NO.", type **7** and press **Enter**. The following message is displayed.

    START:AGB TEST

A series of screens follows displaying A/N mode and APA mode tests. The screens appear sequentially at three– to five–second intervals.

> To hold a test screen on your display, press and hold the **F2** key down. To continue running the screens, release **F2**.

A/N Mode

The A/N mode test series begins with the following "Character Generator Display" screen in 40 x 25 mode.

> If your AGB Plus is connected to a monochrome display, all tests for A/N mode appear in the 80 x 25 mode.

Other A/N mode tests appear as follows.

- Character Generator Display, in 80 x 25 mode
- Attribute Display, in 40 x 25 mode
- Attribute Display, in 80 x 25 mode
- Page 0 (a screen of zeros) through Page 7

APA Mode

If you have a color display, the APA graphics mode tests begin with the following "Color Set 1" screen displaying the "NEC" pattern.

```
[RUN]                    AGB   :READY
        320 * 200 , COLOR SET 1




              NEC



    *** HOLD "F2" DOWN TO PAUSE ***
```

Then two more "NEC" screens appear, one in color, and one in black and white. The color screen scrolls upward. After the "NEC" screens, the following 16−color screen is displayed.


```
[RUN]           AGB  :READY


                              DARK
          BLACK                GRAY
                              LGHT
          BLUE                 BLUE
                              LGHT
          GREEN               GREEN
                              LGHT
          CYAN                 CYAN
                              LGHT
          RED                  RED
                              LGHT
          MAG                  MAG

          BROWN               YELLOW
                              INT
          WHITE               WHITE

          +++ HOLD "F2" DOWN TO PAUSE +++
```

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If you have an NEC MultiSync II or an Advanced Color Display, or another display having a high–resolution mode (640 x 350), go on to the next subsection. Otherwise, go to the subsection "Test Endings."

High–Resolution Modes

An additional series of screens appears for high–resolution displays.

For color displays, the test screens begin with the following screen message.

START:AGB TEST

Then the A/N mode and APA mode test screens appear in sequence as follows.

- Character Generator Display Test, in 40 x 25 mode
- Character Generator Display Test, in 80 x 25 mode
- Attribute Display Test, in 40 x 25 mode
- Attribute Display Test, in 80 x 25 mode
- Green–blue–red–gray attribute palette
- 16–color display
- Graphics palette series in blue, green, red, and gray diagonal patterns

For monochrome displays, the APA graphics mode tests show a series of diagonal graphics patterns.

If you have the NEC MultiSync II or an Advanced Color Display, go on to the next subsection. Otherwise, go to the subsection "Test Endings."

400–Line Modes

An additional series of screens appears for 400–line modes. Test screens appear in sequence as follows.

> To run the 400–line mode tests, you must have either an NEC MultiSync II or an Advanced Color Display. The AGB Plus must be set for 400–line mode.

- Character Generator Display Test, in 40 x 25 (Double) mode
- Character Generator Display Test, in 80 x 25 (Double) mode
- Character Generator Display Test, in 80 x 25 mode

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- Character Generator Display Test, in 132 x 25 mode
- Attribute Display Test, in 40 x 25 (Double) mode
- Attribute Display Test, in 80 x 25 (Double) mode
- Attribute Display Test, in 80 x 25 mode
- Attribute Display Test, in 132 x 25 mode
- "Color Set 1/2" screen displaying the "NEC" pattern, in 320 x 400 (Double) mode
- "Black and White" screen displaying the "NEC" pattern, in 640 x 400 (Double) mode
- 16–color display, in 640 x 480 mode

Test Endings

The AGB and the AGB Plus tests end with the following screen message.

> ********** NORMAL END **********

If this message appears, your board is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

8 FLOPPY DISK TEST

The 1.44–MB floppy disk drive is supported on the PowerMate 1 Plus and the PowerMate 1 (8/10 MHz) systems.

The PowerMate 1 (8/10 MHz) system supports the 1.44–MB floppy disk drive when a ROM BIOS of 3.10 or higher is installed. The ROM BIOS version appears on the power–on screen.

At the prompt "ENTER MODULE NO.", type **8** and press **Enter**. The following is displayed on the screen.

TEST DRIVE : A–1.2M

1: A–1.2M	2: B–1.2M	3: B–360K	4: B–720K
5: B–1.4M	6:	7:	8:
9:	A:	B:	C:
D:	E:	F:	

The screen prompt "TEST DRIVE" appears highlighted. Select the drive for this test as follows.

To test

- drive A (top drive), type **1**
- a 1.2–MB drive B, type **2**
- a 360–KB drive B, type **3**
- a 720–KB drive B, type **4**
- a 1.44–MB drive B, type **5**

and press **Enter**. The following warning appears.

WARNING:

INSERT THE "SYSTEM CHECKING DISKETTE" INTO DRIVE X. PRESS Enter WHEN READY.

If the System Checking diskette is not already in the drive that you are testing, insert it. Press **Enter**. The following message appears on the screen.

START:FLOPPY DISK TEST

The test takes about five seconds. The Floppy Disk Test ends with the following screen message.

********** NORMAL END **********

If this message appears, your floppy disk drive is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

9 HARD DISK TEST

This test takes up to four minutes for a 42– or 40–MB disk and two minutes for a 20–MB disk.

> If you have an ESDI drive, go on to "12 ESDI Disk Test."
>
> The 42–MB hard disk is supported on the PowerMate 1 Plus system. The 42–MB hard disk is also supported on the Power-Mate 1 (8/10 MHz) system when a ROM BIOS of 3.10 or higher is installed. The ROM BIOS version appears on the power-on screen.

At the prompt "ENTER MODULE NO.", type **9** and press **Enter**. The following is displayed on the screen.

```
DRIVE 1                    : YES
DISK TYPE                  : 42MB
DRIVE 2                    : NO
DISK TYPE                  : 42MB
READY                      : YES

1: YES     2: NO     3:      4:
5:         6:        7:      8:
9:         A:        B:      C:
D:         E:        F:

ENTER NO
```

The screen prompt "DRIVE 1" appears highlighted. Select the drive for this test as follows.

Drive 1:

1. Type **1** and press **Enter**. The prompt "DISK TYPE" appears highlighted.

2. If drive 1 is:

   - a 42–MB disk, type **1** and press **Enter**.
   - a 20–MB disk, type **2** and press **Enter**.
   - a 40–MB disk, type **3** and press **Enter**.

   The prompt "DRIVE 2" appears highlighted.

3. Type **1** and press **Enter**. The prompt "DISK TYPE" appears highlighted.

4. Type **1**, or **2** and press **Enter**.

5. At the "READY" prompt, type **1** and press **Enter**.

Drive 2:

1. Type **2** and press **Enter**. The prompt "DISK TYPE" appears highlighted.

2. Type **1**, or **2** and press **Enter**. The prompt "DRIVE 2" appears highlighted.

3. Type **2** and press **Enter**. The prompt "DISK TYPE" appears highlighted.

4. If drive 2 is:

   • a 42–MB disk, type **1** and press **Enter**.
   • a 20–MB disk, type **2** and press **Enter**.
   • a 40–MB disk, type **3** and press **Enter**.

5. At the "READY" prompt, type **1** and press **Enter**.

After drive selection, the following is displayed on the screen.

START:HARD DISK TEST

TEST DRIVE (x)

FUNCTION : READ SECTOR
CYLINDER : xxx
TRACK   : xx

The Hard Disk Test ends with the following screen message.

********** NORMAL END **********

If this message appears, your hard disk is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

10 SERIAL PORT TEST

This test checks the COM1 communication port on your system unit. To run this test, you need an NEC RS–232C cable and the loopback connector that comes with the RS–232C cable. To install the RS–232C cable, see "Connecting an RS–232C Device" in the owner's guide. Use the following procedure to install the connector.

1. Remove any diskettes in the system unit.

2. Turn off and unplug the system unit and all devices attached to it.

3. If your RS–232C cable is not already installed, connect the cable to the communication port you are testing.

   If your RS–232C cable is already installed, disconnect the RS–232C device from the cable.

4. Connect the loopback connector to the unattached end of the RS–232C cable.

With the RS–232C cable and loopback connector installed, load the System Checking diskette.

At the prompt "ENTER MODULE NO.", type **10** and press **Enter**. The following message is displayed on the screen.

SELECT DEVICE NO. :#1

1: #1	2:	3:	4:
5:	6:	7:	8:
9:	A:	B:	C:
D:	E:	F:	

The screen prompt "SELECT DEVICE NO." appears highlighted. Select the device to be tested as follows.

1. To test COM1, type **1** and press **Enter**.

The following is displayed on the screen.

COMx TEST

START:SERIAL PORT TEST

The Serial Port Test ends with the following screen message.

********* NORMAL END *********

If this message appears, the communication port tested is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

11 PARALLEL PORT TEST

Before running this test, be sure that your printer is

- a parallel printer
- installed according to the directions that came with the printer
- connected to the system unit correctly (see "Connecting a Printer" in your owner's guide).

At the prompt "ENTER MODULE NO.", type **11** and press **Enter**. The following message is displayed.

```
READY?    : YES

1: YES    2: NO    3:      4:
5:        6:       7:      8:
9:        A:       B:      C:
D:        E:       F:
```

ENTER NO

Check that your printer is in a "Select" mode. "Select" is a mode in which the printer can receive data from a computer. See the user's guide that came with your printer for the setting.

Type **1** and press **Enter**. The following message appears on the screen.

START:PRINTER TEST

The Parallel Port Test ends with the following screen message and a print-out.

********** NORMAL END **********

The printout is characteristic of your printer. The test program generates both alphanumeric and graphics characters. If your printer does not print graphics characters, your printout will show alphanumeric characters typical of your printer. Graphics characters appear as solid blocks.

If the "NORMAL END" message appears on your screen and your printout appears, your parallel port is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."
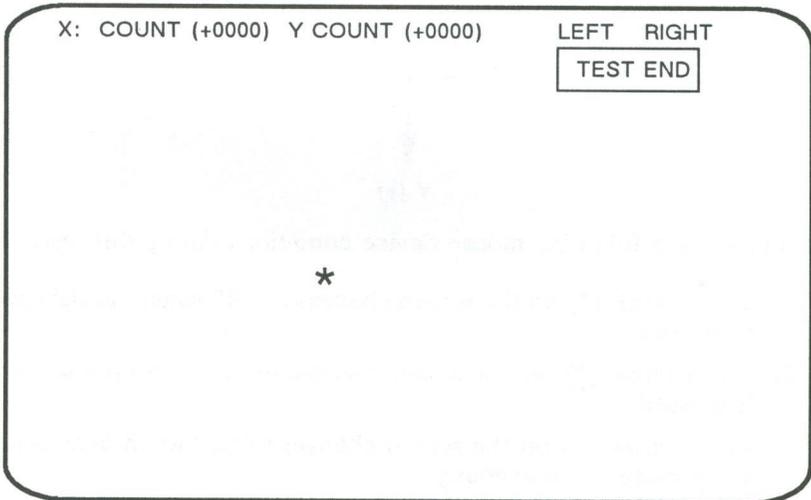
Press **Enter** to return to the program menu.

12 ESDI DISK TEST

The 80–MB and the 140–MB ESDI drives are supported on this system. However, these drives are not compatible and cannot be used together in the same system.

This test takes up to five minutes for an ESDI drive. At the prompt "ENTER MODULE NO.", type **12** and press **Enter**. The following is displayed on the screen.

```
DRIVE 1      :      YES
DISK TYPE    :      80MB
DRIVE 2      :      NO
DISK TYPE    :      80MB
READY        :      YES

1: YES       2: NO        3:        4:
5:           6:           7:        8:
9:           A:           B:        C:
D:           E:           F:
```

ENTER NO.

The screen prompt "DRIVE 1" appears highlighted. Select the drive for this test as follows.

DRIVE 1:

1. Type **1** and press **Enter**. The prompt "DISK TYPE" appears highlighted.

2. Type **1** and press **Enter**. The prompt "DRIVE 2" appears highlighted.

3. Type **1** and press **Enter**. The prompt "DISK TYPE" appears highlighted.

4. Type **1** and press **Enter**.

5. When ready, type **1** and press **Enter**.

DRIVE 2:

1. Type **2** and press **Enter**. The prompt "DISK TYPE" appears highlighted.

2. Type **1** and press **Enter**. The prompt "DRIVE 2" appears highlighted.

3. Type **2** and press **Enter**. The prompt "DISK TYPE" appears highlighted.

4. Type **1** and press **Enter**.

5. When ready, type **1** and press **Enter**.

After drive selection, the following is displayed on the screen.

    START : ESDI DISK TEST

    TEST DRIVE (X)
    FUNCTION   : READ SECTOR
    CYLINDER   : XXX
    HEAD   : XX

The ESDI test ends with the following message.

    ********* NORMAL END *********

If this message appears, your hard disk is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

13 MOUSE DEVICE TEST

This test checks the mouse interface on the AGB Plus. To run this test, you must first connect the mouse cable to the connector at the rear of the AGB Plus.

> Be sure that all power is off to the system before connecting the mouse device cable to the AGB Plus.
>
> The mouse device will only operate with an AGB Plus board installed.

At the prompt "ENTER MODULE NO.", type **13** and press **Enter**. The following screen appears.

```
 X:  COUNT (+0000)  Y COUNT (+0000)      LEFT    RIGHT
                                        ┌─────────────┐
                                        │  TEST END   │
                                        └─────────────┘



                        *



```

Use this test to check that the mouse device is operating correctly. The mouse device has two switches, and it can also move in any direction as shown below.

Y (−)

TO AGB BOARD
CONNECTOR

X (−)   X (+)

Y (+)
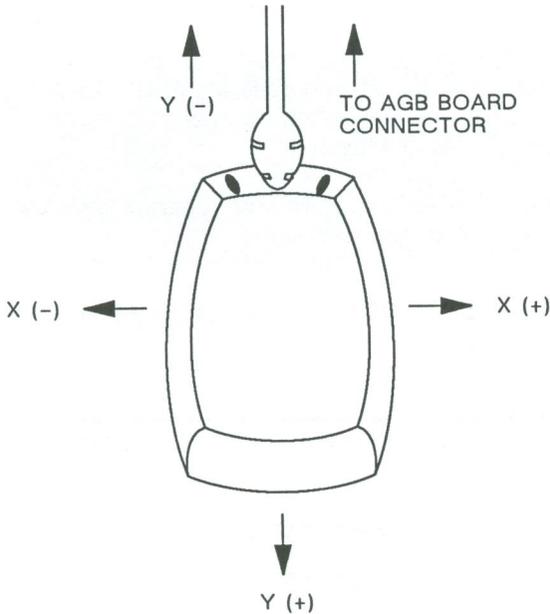
Please check the following mouse device conditions during this test.

1. The asterisk (*) on the screen changes to "R" when the right switch is pressed.

2. The asterisk (*) on the screen changes to "L" when the left switch is pressed.

3. The asterisk (*) on the screen changes to (@) when *both* switches are pressed simultaneously.

4. The asterisk (*) on the screen moves correctly when any mouse device motion is made.

To end this test, move the asterisk (*) on the screen inside the TEST*END block and simultaneously press both the left and right switches.

The mouse device test ends with the following screen message.

********** NORMAL END **********

If this message appears, your mouse device is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to the program menu.

14 VIDEO GRAPHICS BOARD (VGB) TEST

The VGB is supported on both the PowerMate 1 Plus and the PowerMate 1 (8/10 MHz) systems.

This test checks only the VGB. If you have a different display board, go to the appropriate test.

The VGB test checks the board's two basic modes of operation: alphanumeric (A/N) and all–points–addressable (APA) graphics.

At the prompt "ENTER MODULE NO.", type **14** and press **Enter**. The following message is displayed.

    START:VGB TEST

A series of screens follows displaying A/N mode tests. The screens appear sequentially at three– to five–second intervals.

To hold a test screen on your display, press and hold down the **F2** key. To continue running the screens, release **F2**.

A/N Mode

The A/N mode test series begins with the following "Character Generator Display" screen in 40 x 25 mode.
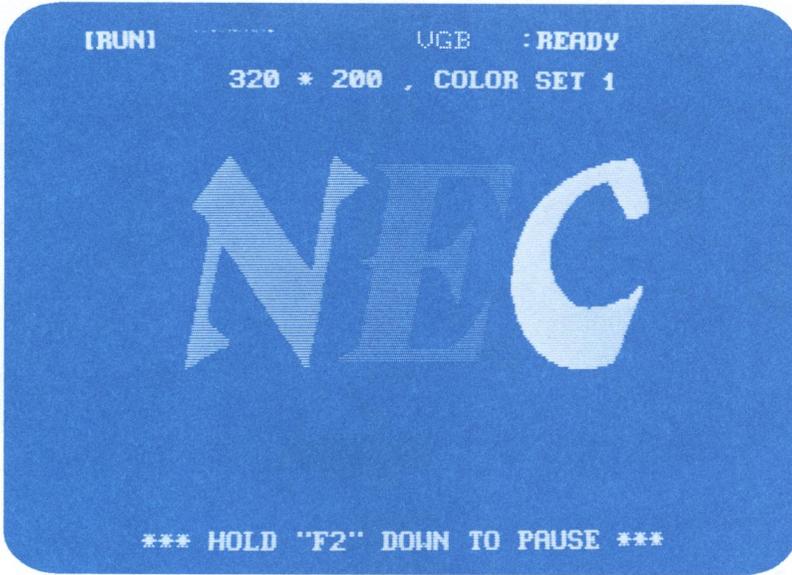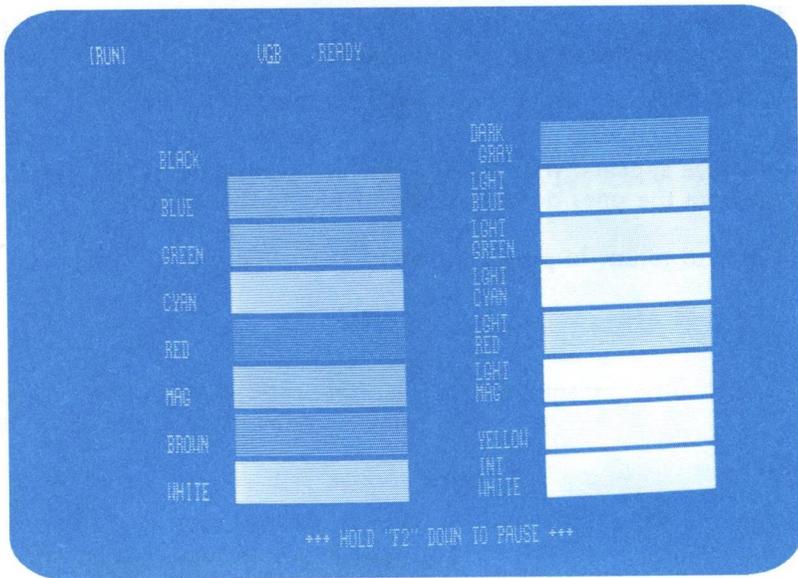
Other A/N mode tests appear as follows.

- Character Generator Display, in 80 x 25 mode (CGB)
- Character Generator Display, in 40 x 25 mode (AGB)
- Character Generator Display, in 80 x 25 mode (AGB)
- Character Generator Display, in 40 x 25 mode (VGA)
- Character Generator Display, in 80 x 25 mode (VGA)
- Character Generator Display, in 132 x 25 mode
- Character Generator Display, in 132 x 43 mode
- Attribute Display Test, in 40 x 25 mode (CGB)
- Attribute Display Test, in 80 x 25 mode (CGB)
- Attribute Display Test, in 40 x 25 mode (AGB)
- Attribute Display Test, in 80 x 25 mode (AGB)
- Attribute Display Test, in 40 x 25 mode (VGA)
- Attribute Display Test, in 80 x 25 mode (VGA)
- Attribute Display Test, in 132 x 25 mode
- Attribute Display Test, in 132 x 43 mode
- Page 0 (a screen of zeros) through page 7

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APA Mode

The APA graphics modes tests begin with the following "Color Set 1" screen displaying the "NEC" pattern.

Then two more "NEC" screens appear, one in color, and one in black and white. The color screen scrolls upward. After the "NEC" screens, the following 16–color screen is displayed.

Other APA mode tests appear as follows.

- Green–blue–red–gray attribute palette
- 16–color display, in 640 x 200 mode
- 16–color display, in 640 x 350 mode
- Graphics palette series in blue, green, red, and gray diagonal patterns
- "Black and White" screen displaying the "NEC" pattern, in 640 x 480 mode
- 16–color display, in 640 x 480 mode
- 256–color display, in 320 x 200 mode
- 16–color display, in 800 x 600 mode

After the 16–color display in 800 x 600 mode, the following message is displayed.

START:VRAM READ/WRITE TEST

Test Endings

The VGB test ends with the following screen message.

********** NORMAL END **********

If this message appears, your board is operating correctly. If your results are different from the ones described, see "ERROR HANDLING."

Press **Enter** to return to program menu.

ERROR HANDLING

When your results are different from those described in this guide, first check if the result on your screen appears similar to the error message following.

```
********** ccccc : ERRORxxx **********
```

MODULE NAME ────────┘

ERROR CODE

If you received a similar error message, and it appears in the "Error Handling" table at the end of this section,

- perform the corrective actions listed
- run the System Checking test again. To return to the program menu from the error message screen, press **Enter**. The "Normal End" message appears. Press **Enter** again. The program menu appears.

> A "Normal End" message following an error message does not indicate that the error has been corrected. It simply signifies the end of a properly executed test.

If the same error code appears again, see your hardware dealer. Be sure to tell your dealer the following.

- An unexpected result appeared on your screen during the System Checking program.
- The module name (ccccc) and the error code (xxx).

If you did *not* receive a similar error message, see your hardware dealer. Be sure to tell your dealer the following.

- An unexpected result appeared on your screen during the System Checking program.
- The place in the System Checking program where you received the result.
- What result is displayed on the screen.

Error codes which appear on your screen and are not listed in the "Error Handling" table are not user–correctable faults. Please contact your hardware dealer.

Error Handling

MODULE NAME	ERROR CODE	CORRECTIVE ACTION
CGB	001	Check that your display board is a Color Graphics Board. If it is not, run the appropriate test.
AGB	001	Check that your display board is an Advanced Graphics Board Plus. If it is not, run the appropriate test.
FDD	001	Check that the System Checking diskette is in drive A. If not, insert it.
HDD	000	If you installed a hard disk option, check that the signal cable is connected correctly and that the connection is tight. See the instructions that came with the disk.
		If your hard disk came already installed in the system unit, call your NEC dealer.
	005	If you installed a hard disk option, check that the data cable is connected correctly and that the connection is tight. See the instructions that came with the disk.
		If your hard disk came already installed in the system unit, call your NEC dealer.

MODULE NAME	ERROR CODE	CORRECTIVE ACTION
S–PORT	017	Check that your RS–232C cable and loopback connector are connected properly.
P–PORT	004	Check that the printer power is on and the printer "selected." If not, turn on and "select" your printer.
	005	Check that the printer cable is connected correctly and your paper loaded properly.
MOUSE	002	Check that the mouse device cable is connected correctly to the AGB Plus.
VGB	001	Check that your board is a Video Graphics Board. If it is not, run the appropriate test.

NEC
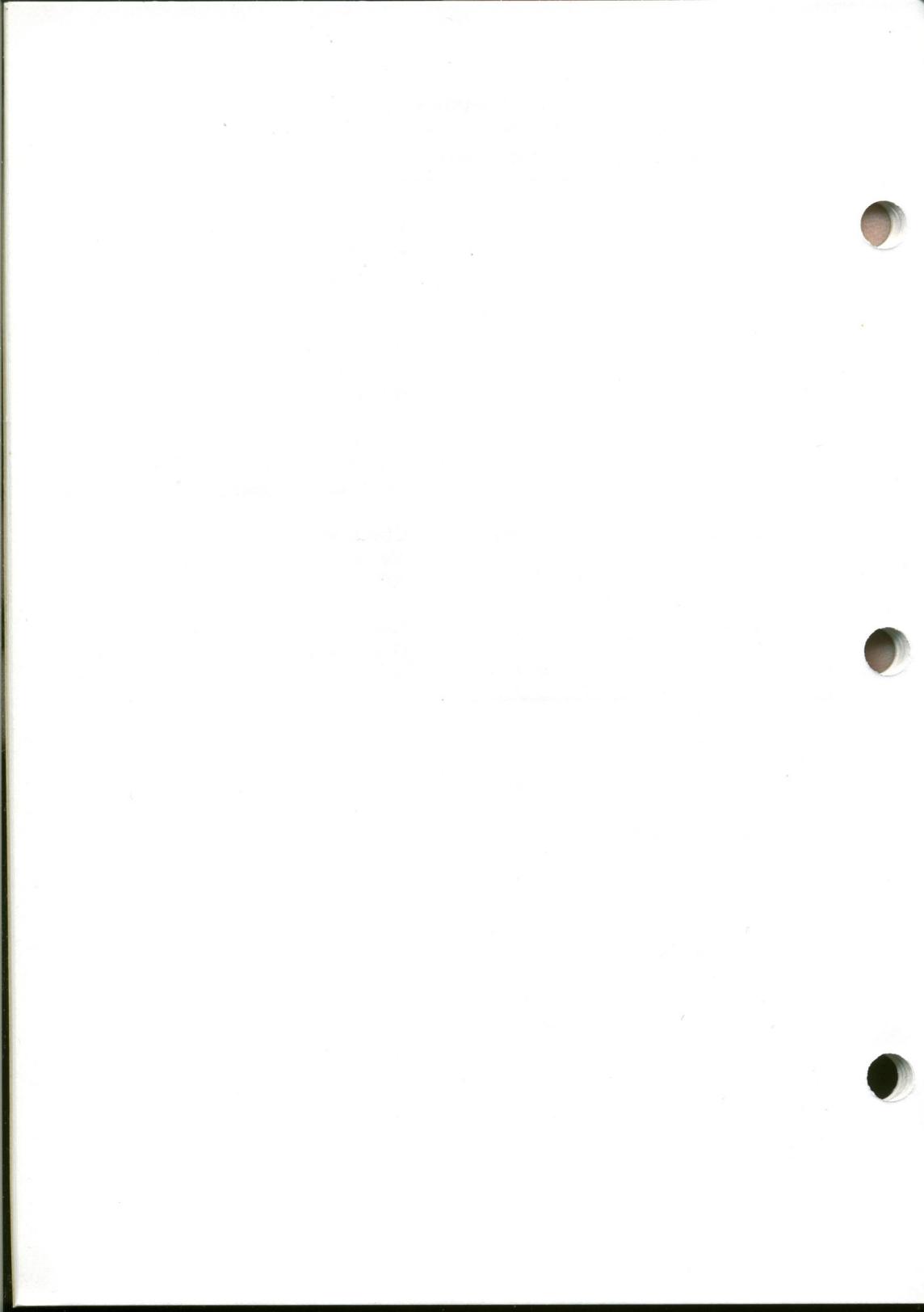
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Document: PowerMate™ 1 Series
System Checking Program Guide

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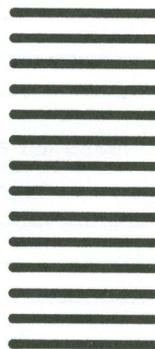FIRST CLASS PERMIT NO. 105 ACTON, MA

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