

## CHAPTER 10. DIAGNOSTIC

### 1. Outline

DIAG.EXE is a built-in program for testing hardware function. For testing, use the program according to the following procedure:

### 2. Command Line

DIAG /A → Automated test. Result of each test displayed.  
 DIAG /AQ → Automated test. Only tests which fail are displayed.  
 DIAG /Q → Option ignored  
 DIAG → Menu driven test. See section 2 onwards.

### 3. Menu driven tests

Diagnostics	
CPU (Processor)	→ 3-1 Checks all processor registers.
Memory	→ 3-2 Displays size and result of memory tests.
LCD screen...	→ 3-3 Various video tests performed.
Keyboard	→ 3-4 Checks each key on keyboard.
RS-232C serial port...	→ 3-5 Check port settings and test port.
Parallel (printer) port...	→ 3-6 Check printer status and test port.
IC Memory Cards...	→ 3-7 Headwrite test and Card Information.
Sounds...	→ 3-8 Key click, beep, tone and alarm test.

#### 3-1. CPU (Processor)

General result displayed.

```

Test Passed or Test Failed
  
```

Press a key to continue.

#### 3-2. Memory

The Memory test will destroy the contents of the user disk held in the PBRAM area. The machine will reboot on exit from the program. The user is therefore asked for confirmation:

```

Diagnostics
CP Ask You Sure?
Me Yes
LC No
Ke
RS-232C serial port...
Parallel (printer) port...
IC Memory Cards...
Sounds...
  
```

The results of all memory devices is shown:

```

Diagnostics
CP Memory
Me 1024K ROM Passed
LC 128K OTPROM Failed
Ke 64K SRAM Passed
RS 1024K RAM Passed
LC Memory Cards...
Sounds...
  
```

Press a key to continue.

#### 3-3. LCD Screen

Saving selected this field, another menu is displayed, as shown below

```

Diagnostics
CP LCD Screen
Me Graphics
LC Text
Ke Both
RS
Parallel (printer) port...
IC Memory Cards...
Sounds...
  
```

Each test will exercise the screen by selecting different modes and then displaying patterns. The user can move on to the next test by pressing

a key, or by waiting 5 seconds after the end of each test. Pressing ESC will abort the LCD Screen test currently being executed and re-display the menu.

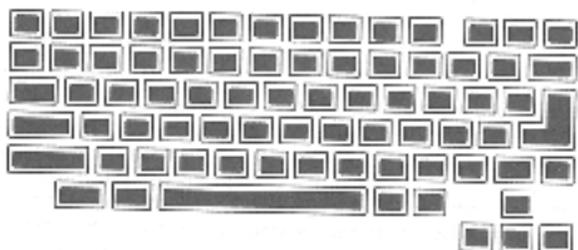
Selecting "Both" will execute all the test that are carried out in Graphics and Text.

Press ESC to return to the main menu.

### 3-4. Keyboard

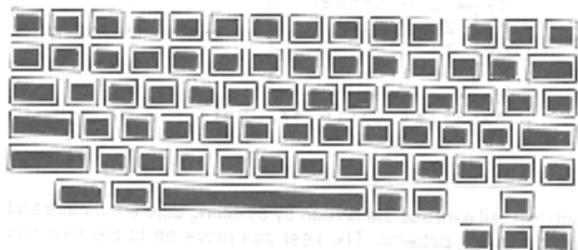
Having selected the Keyboard, the screen will display a diagram representing the keyboard currently installed. Pressing any key will cause the corresponding key to blink while the key is held down.

**For the European keyboard:**



Press [ESC] twice to quit

**For the USA keyboard:**



Press [FSC] twice to quit

Press the ESC twice consecutively to return to main menu.  
Note, this test is NOT executed during Autotest.(DIAG /A).

### 3-5. RS-232C serial port

A menu is displayed showing the current settings of the Serial port. The 'On line' status is re-checked only when selected by pressing RETURN.

The items below the line (Baud rate etc) are the current settings and cannot be edited.

```

Diagnostics
CP RS-232C Port
He On line Yes
LC Read/write test
Ke -----
RS Baud Rate 110
Pa Parity None
IC Data bits 8
Sc Stop bits 1
  
```

Selecting Read/Write Test is a check to see if the Serial port is working correctly. The result of the test will then be displayed as shown below.

```

Diagnostics
CP RS-232C Port
Mc On Read/write test Yes
LC Re Passed
Ke -----
RS Baud Rate 110
Pa Parity None
IC Data bits 8
Sc Stop bits 1
  
```

Please note, during Autotest, only the Read/Write Test result will be displayed.

Press ESC to return to the main menu.

### 3-6.Parallel port

The menu shown below is displayed.

```

Diagnostics
CP Parallel
He On line Yes
LC Test print
Ke -----
RS-232C serial port...
Parallel (printer) port...
IC Memory Cards...
Sounds...
  
```

Selecting 'On line' will cause the status of the attached printer to be checked.

If 'Test print' is selected, an attempt will be made to print a set of characters to the attached printer. The result will be displayed as follows:-

```

Diagnostics
CP Parallel
Mc On Test print
LC Te Passed
Ke -----
RS-232C serial port...
Parallel (printer) port...
IC Memory Cards...
Sounds...
  
```

### 3-7. IC Memory Cards

```

Diagnostics
CP Memory card
Mc Read/write test
LC Card information
Ke -----
RS-232C serial port...
Parallel (printer) port...
IC Memory Cards...
Sounds...
  
```

To carry out non-destructive test on the Memory cards installed, select 'Read/Write test'. The user will then be given a list of all the removable drives present to select from. Having selected the drive, the Read/Write test will be performed, and the result will be displayed.

```

Diagnostics
CP Memory card
Mc Re Read/write test
LC Ca A: drive
Ke B: drive
RS-232C serial port...
Parallel (printer) port...
IC Memory Cards...
Sounds...
  
```

If Card Information is selected, first a list of drives that are removable is displayed. Once the drive to check is chosen, various data relating to the card will be displayed.

```

Diagnostics
CP Sounds
Mc Keyclick
LC Beep
Ke Tone
RS Alarm port...
Pa (test) port...
IC Memory Cards...
Sounds...
  
```

The following is an example of the data that would be displayed:

```

00 Link Target      13 03 43 49 53
05 Device type     01 03 61 fb ff
      SRAM
      Write Protect clear
      250 nsec
0a JKDEC ID        18 03 00 00 ff
0f Checksum control 10 06 f1 ff 00 02 44 14
17 Version 1       15 0f 04 00 47 45 4e 45 52 49 43 c0 52 41 4d 00 ff
      Version 4.0

      GENERIC
      RAM
2a Version 2       40 28 00 00 00 02 00 00 00 00 01 44 51 74 61 62 ff 5e
      6b 2c 20 49 6e 63 2e 00 54 68 69 6e 43 61 72 64 20 54
      72 69 76 65 73 00
      Databook, Inc.
      ThinCard drives
52 Format          41 14 00 09 00 02 00 00 00 fe 0f 00 00 02 fb 07 00 00 00 f8 0f
      00
      Disk
68 Secondary      42 04 00 00 00 00
6e Data Organization 46 05 00 44 4f 53 00
75 Date           44 04 37 70 16 16
      14:01:45 22-06-1991
7b Battery Replacement 45 04 00 00 00 00
      00-00-1980
      00-00-1980
81 End of list    ff 00
  
```

Only the Read/Writes test will be carried out for Autotest (DIAG /A) for all the removable drives present.

### 3-8. Sounds

```

Diagnostics
CF Sounds
Me Keyclick
LC Beep
Ke Tone
RS Alarm port...
Fa (hex) port...
IC Hexary Cards...
Sounds...
  
```

Various forms of sound tests can be selected as shown above. Each test will last 5 seconds. During this time, the message "Working..." will be displayed. Pressing EGC will abort the current test, and the Sound menu will be redisplayed.