CHERRY MOUSEBOARD

DESCRIPTION

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This edition refers to the CHERRY MouseBoard(R) driver software, version 4.10 or later.

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Sidekick is a registered trademark of Borland International.

CHERRY MouseBoard is a registered trademark of CHERRY Mikroschalter GmbH.

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INTRODUCTION

INTRODUCTION

The MouseBoard can be used for all applications that employ a mouse driver from Microsoft.

The program MINSTALL

This is a simple-to-use installation program.

MINSTALL is the first of several programs that are used by your MouseBoard. It copies the MouseBoard driver software to the drive and directory you select while at the same time configuring it. It then organizes the handshaking procedures between the MouseBoard and the system. For example, MINSTALL determines whether COM1 or COM2 is to be used for communications.

MouseBoard driver software

The MouseBoard driver software (MOUSE.COM or MOUSE.SYS) contains the operating instructions that make the MouseBoard ready to perform its work within a given application environment. The movements of the MouseBoard and the screen cursor are coordinated, and the various MouseBoard key functions are fixed.

Once the MouseBoard driver has been loaded, you can then load PaintShow Plus. Detailed information on how to install this program is contained in a separate manual.

In the following, you learn how to connect the MouseBoard, start the program MINSTALL, and load the MouseBoard driver software.

Preparations

Before connecting the MouseBoard, you should do the following:

Protect the original diskette against being overwritten by covering the notch on the upper right-hand side with a write-protect tap.

Use the DOS commands DISKCOPY and DISKCOMP to make and check a working copy of your original diskette (for instructions on how to use these commands, please consult your DOS manual).

Users of systems with two floppy disk drives (no hard disk)

Format an additional floppy disk and label it as "installed diskette".
Read the file READ.ME on your diskette using the DOS command TYPE; this
file contains important last-minute information.

Installing the MouseBoard

1. Turn your computer OFF.
   Turn the power to all peripheral devices OFF.

2. Find the serial port on your computer.
   If you are using an AT-compatible computer, you must use a 9-to-25-
   pin adaptor (our part no. 617-0946). If you are using a PC, XT, PS/2
   or other compatible computer with a 25-pin serial port, then you can
   connect the MouseBoard directly (see the section on "connecting the
   CHERRY MouseBoard to the PC).

3. Connect the keyboard cable to the keyboard jack of your computer.
   For IBM PS/2 models, you will need our adapter no. 617-0580. Now
   turn your computer back on.

Pin assignments

If you're intending to use an adaptor cable, then you must make sure
that the corresponding pins of the two connectors are joined as
indicated in the following table:

25-pin male connector	Data signals	9-pin female connector
Shell	Protective ground	Shell
2	Receive data	3
3	Transmit data (from the mouse)	2
4	Request to send	7
5	Clear to send	8
6	Data set ready	6
7	Signal ground	5
20	Data terminal ready	4
22	Ring indicate	9
8	Data carrier detect	1

Installing the MouseBoard driver

In this section you will learn how to start the program MINSTALL and
how to install your MouseBoard driver. Please also follow the
additional instructions that appear on-screen.

In order for your mouse to function, the MouseBoard driver (MOUSE.COM)
must be installed. It is only possible to dispense with this if you use
a file called MOUSE.SYS. See the section on "Loading the MouseBoard
driver" for information on MOUSE.SYS.

1. **Start the program MINSTALL.**
   Insert the working copy of the mouse software diskette into drive A.
   At the DOS prompt, enter the following:

   A:MINSTALL ⏎ Enter

   Now perform the installation by following the instructions that are
   displayed on the screen.

2. **Select the drive and directory.**

   NOTE for hard-disk users:

   During the installation, if you wish you can change the drive and
   directory to which MINSTALL is to copy the MouseBoard driver.

   Strike A, in order to accept C:\MOUSE as the directory for the
   MouseBoard driver.

   If you wish to select a different directory for the MouseBoard
   driver, select option B, and then enter the name of the drive and
   directory. Follow up by pressing ⏎ Enter .

Loading the MouseBoard driver

Once you have installed the mouse files, two possibilities exist for
loading them each time you start your system: either automatically, by
means of appropriate commands in the AUTOEXEC.BAT file; or manually at
the DOS prompt. We recommend that you use the first of these two
options, but we also explain how to perform manual loading as well.

Automatic loading of the MouseBoard driver

In order to automatically load MOUSE, the command MOUSE and the corresponding path must be added to your AUTOEXEC.BAT file.

Manual loading of the driver

Hard-disk users

Change the PATH command in your AUTOEXEC.BAT file by adding an entry for the subdirectory containing the mouse data.

If you have not made this addition to the AUTOEXEC.BAT file, then you must manually change to the directory in which you have installed the MouseBoard driver, and load the files from there.
Enter the following:

CD\<DIRNAME> [←┘ Enter]

Here, DIRNAME stands for the name of the MouseBoard driver directory.

Now load the MouseBoard driver.

At the DOS prompt, enter the following:

MOUSE [←┘ Enter]

A message will appear on-screen confirming that the driver has been loaded.

Users of systems with two floppy disk drives

To load the MouseBoard driver, insert the "installed diskette" that you have created with MINSTALL into drive A. At the A> prompt, enter the following:

MOUSE [←┘ Enter]

A message appears on the screen to confirm that the program has been loaded.

About MOUSE.SYS

If you must use MOUSE.SYS instead of MOUSE.COM, then you should bear in mind the following:

* Copy MOUSE.SYS to your hard disk.

* If you want to install your mouse with a device driver instruction in your CONFIG.SYS file, then you must make sure that the MOUSE.SYS file is properly listed in the CONFIG.SYS file.
  Example:
  DEVICE= DIRNAME MOUSE.SYS /2
  DIRNAME is the directory in which the file MOUSE.SYS is stored, and /2 indicates that the MouseBoard is connected to the serial port "COM2".

* If you have added the command MOUSE to your AUTOEXEC.BAT file, then you must now delete it.

For more information on AUTOEXEC.BAT files, path commands and/or CONFIG.SYS files, please consult your DOS manual.

Memory-resident programs and DOS shells

The MouseBoard driver must be loaded prior to loading memory-resident programs and DOS shells. For example, if you have configured your AUTOEXEC.BAT file to automatically load a memory-resident program like Sidekick, then the corresponding command lines must be listed in approximately the following order:
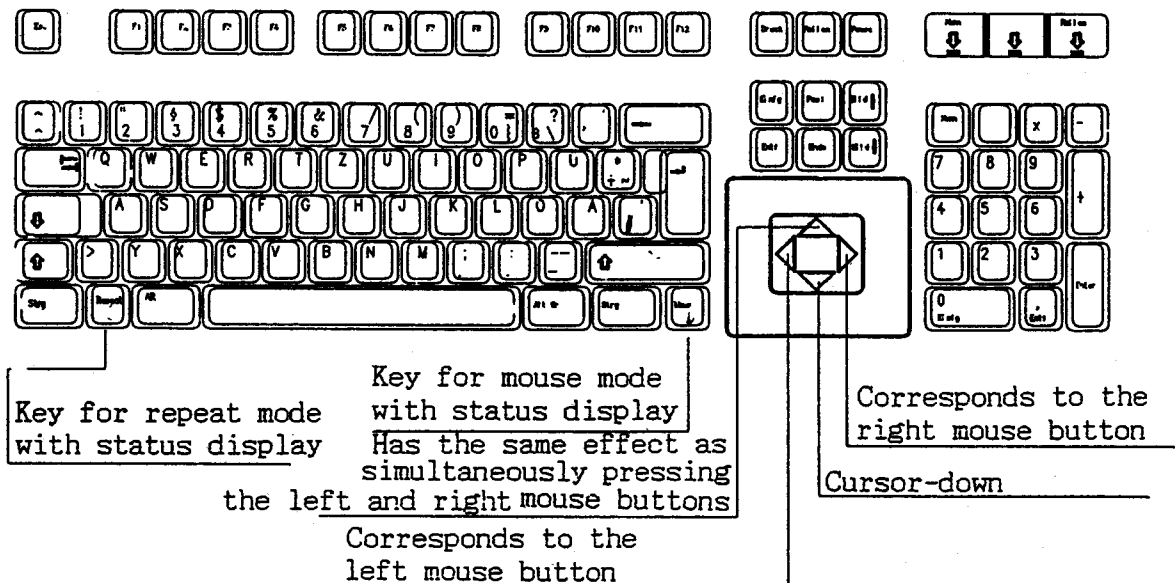
                    DATE
                    TIME
                    PATH=C:\MOUSE
                         .
                         .
                         .
                    MOUSE
                    SK

The Mouseboard Driver

1. The MouseBoard driver can be operated either in mouse mode or in text mode.

   Mouse mode: Pressing the mouse key (on the left), the mouse mode is activated (the LED in the mouse key lights up). Now the MousePanel can be used like a mouse. The four buttons on the MousePanel have now the same functions as mouse keys and the cursor-down key.
   To exit the mouse mode, simply press the mouse key again (LED extinguishes).

   See the following illustration:

Key for repeat mode with status display

Key for mouse mode with status display Has the same effect as simultaneously pressing the left and right mouse buttons

Corresponds to the left mouse button

Corresponds to the right mouse button

Cursor-down

   Text mode: In text mode, a further distinction is made between cursor and repeat mode. The four integrated buttons on the MouseBoard perform the same functions as the cursor keys in both cursor and repeat mode.

   * Cursor mode: Neither of the two modes "mouse mode" or "repeat mode" is active (the LEDs on both the mouse and the repeat keys are off). The MouseBoard buttons now perform the standard repeat.
   The MouseBoard driver generates the functions of the cursor keys, proportionally to the direction and displacement:
   Cursor left, cursor right, cursor down, cursor up.

* Repeat mode: Repeat mode is activated by pressing the "repeat key"
(the LED on the repeat key lights up).
In this mode, a repeat speed proportional to the
displacement of the MouseBoard is assigned to each key,
regardless of which direction the MouseBoard is moved
in. To exit the repeat mode, press the repeat key again
(the LED extinguishes).

2. Basic MouseBoard functions

In most applications with mouse support, three basic mouse
techniques are used:

    a) * Point
    b) * Click
    c) * Pull

a) Pointing with the MousePanel

The Mouseboard controls a pointer on the screen. This pointer can
take various different forms. For example, if you are using a
graphics-oriented program such as Microsoft Windows, the pointer
often appears in the form of an arrow. In character-orient
ed programs like Microsoft Multiplan, however, the pointer appears
as a blinking box.

You can move the mouse pointer on the screen by moving the
MouseBoard in the direction corresponding to that of the desired
movement of the mouse pointer on the screen. The movement of the
pointer is controlled in such a way that moving the MouseBoard
slowly causes the pointer to travel a smaller distance; conversely,
rapidly moving the MousePanel yields larger pointer movements. This
allows you to move the pointer large distances across the screen
with a minimal movement of the mouse, or to move the pointer short
distances without losing control over it. There is a limit on how
far you can move the MousePanel. At the edges, the motion of the
pointer goes into a controllable repeat.

b) Clicking the MousePanel keys

"Clicking" is defined as quickly pressing a MouseBoard button and then releasing it again. By pointing to an element on the screen and then clicking a MouseBoard button, the element beneath the pointer on the screen can be selected or marked. "Double-clicking" means pointing to an element on the screen and then rapidly clicking a MouseBoard button twice in succession.

c) Pulling for selection of an area on the screen

In order to pull with the MouseBoard, hold a Mouseboard driver key depressed while you move the pointer. You can use the pulling function to select or mark areas on the screen and change the position of on-screen elements.

3. Control of the MousePanel

Your MouseBoard has two functions that control the reaction of the pointer on the screen in relationship to the movements of the MouseBoard: sensitivity control and ballistic effect.

MousePanel sensitivity control

You can define the sensitivity of the MousePanel by appending a qualifying parameter to the MOUSE command. The possible values for sensitivity of the MouseBoard are S00, S01, S02, up to S09 and S10. The low values are for low sensitivity and the high values for high sensitivity. The default value is S05. In order to load the MouseBoard driver with the highest possible sensitivity, use the command
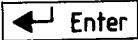
MOUSE S10 | ↵ Enter |

The ballistic effect of the driver

The ballistic effect is controlled by way of the MouseBoard driver.

This function permits you to select the speed and degree of precision for your MousePanel. This controls the response of the screen cursor as a function of the movements that you perform with the MousePanel. Your Mouseboard driver disables the ballistic effect if the qualifier "BOFF" is added to the MOUSE command.
In order to activate the ballistic effect, enter:

MOUSE BON |◄┘ Enter|

The ballistic effect is highly useful in graphics programs. For example, it will slow down the movement of the pointer for precise drawing of details or speed up the pointer for quick access to toolbox functions or selection of menu items.

Appendix A
System requirements

The CHERRY MouseBoard driver 4.1 works with all application programs
that run under a mouse driver from Microsoft. Our MOUSE.COM and
MOUSE.SYS files are functionally compatible with the files of the same
names from Microsoft and IBM.

Computer
IBM PC, XT, AT, PS/2 or 100% compatible.

Disk drives
Two floppy disk drives or at least one floppy disk drive and a hard
disk.

Memory
256k bytes of RAM

Graphics adapter
IBM monochrome adapter, Hercules monochrome adapter, IBM color graphics
adapter (CGA), IBM video graphics adapter (VGA), IBM enhanced graphics
adapter (EGA) with enhanced color monitor, IBM multi-color graphics
adapter (MCGA) or 100% compatible.

Interfaces
Serial port (COM1 or COM2).

Operating system
IBM PC-DOS or MS-DOS version 2.1 or later.

Appendix B
Product support plan

If you have any questions concerning your MouseBoard, please consult
your manuals and/or your dealer. If you have a technical problem, our
specialists will be glad to help you. Before calling or writing us,
however, first carry out the following steps:

Technical support

* Read the section in your manual that covers what you are trying to
  do.

* If the problem is due to the software, please check whether the
  program has been correctly configured.

* Please have the following information ready when you call us, or
  include it in your letter:
  - MouseBoard version and serial number
  - MouseBoard driver version
  - DOS version
  - Hardware and peripheral equipment used
  - The contents of your AUTOEXEC.BAT file, if you have one
  - The contents of your CONFIG.SYS file, if you have one
  - All memory-resident programs that you use (Sidekick, Ready, etc.).

If you are still unable to solve the problem by yourself, please write
us or call us at the following number:
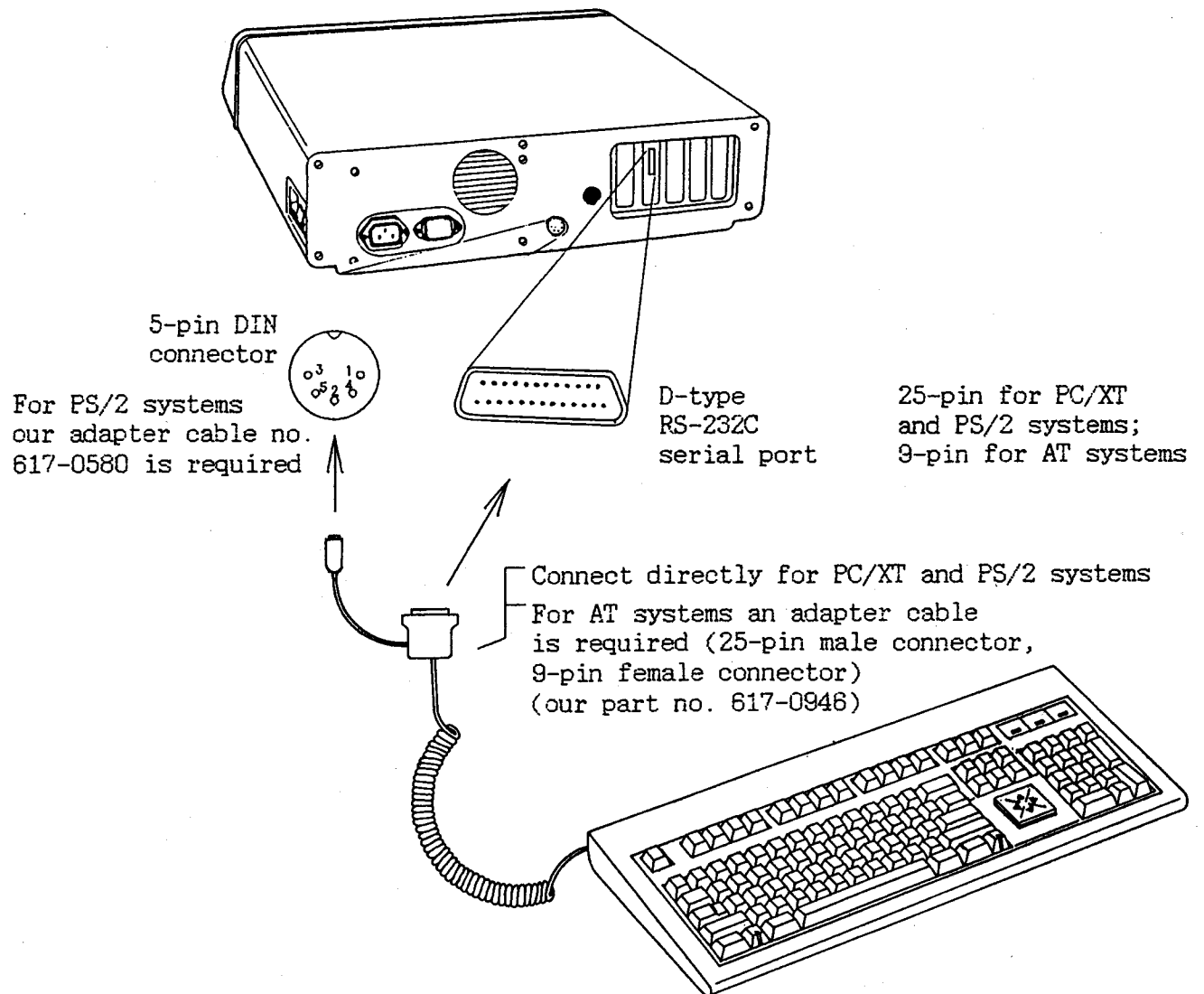
                    Phone: (49) 9643/18743

If you write us, please include the phone number at which you can be
reached during the day, as well as the times at which you are most
likely to be available when we call. Please also add "Attn.: Technical
support" when addressing the envelope. This will allow us to provide
rapid and comprehensive assistance.
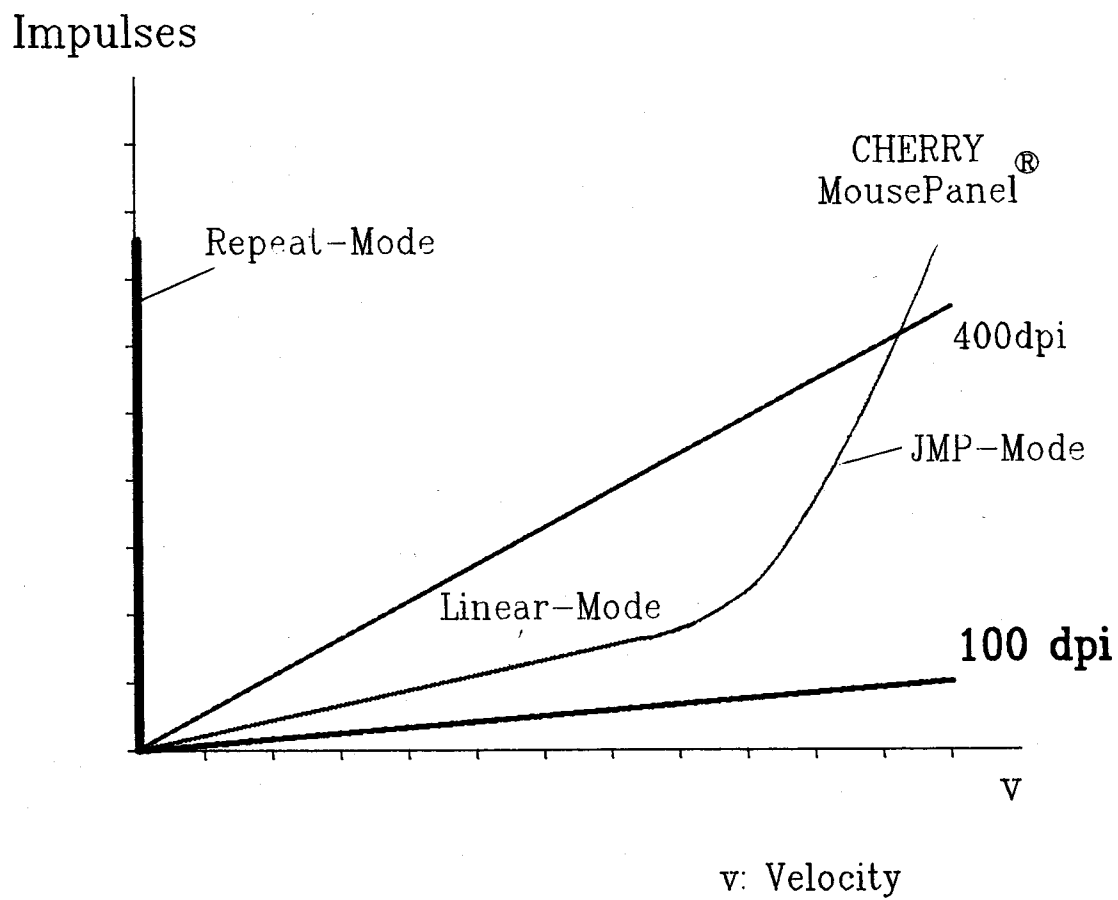

Customer service

If you do not have any technical questions, but instead would merely
like to have a faulty diskette replaced or questions answered about
the warranty or updates and extensions, please address your queries to
our customer service department.

Connecting the CHERRY MouseBoard⟨R⟩ to the PC

5-pin DIN
connector

For PS/2 systems
our adapter cable no.
617-0580 is required

D-type
RS-232C
serial port

25-pin for PC/XT
and PS/2 systems;
9-pin for AT systems

Connect directly for PC/XT and PS/2 systems

For AT systems an adapter cable
is required (25-pin male connector,
9-pin female connector)
(our part no. 617-0946)

CHERRY MouseBoard⟨R⟩

Dynamic Behaviour Of The CHERRY MousePanel®

Impulses

v: Velocity

Resolution

To simplify the conditions we assume that 1 pixel on the screen is equivalent to 1 mouse impulse.
Whilst 1 pixel = 1 travel unit on the screen.

Current Mouse

s

100 dpi   400dpi

Impulses

CHERRY MousePanel®

s

Impulses
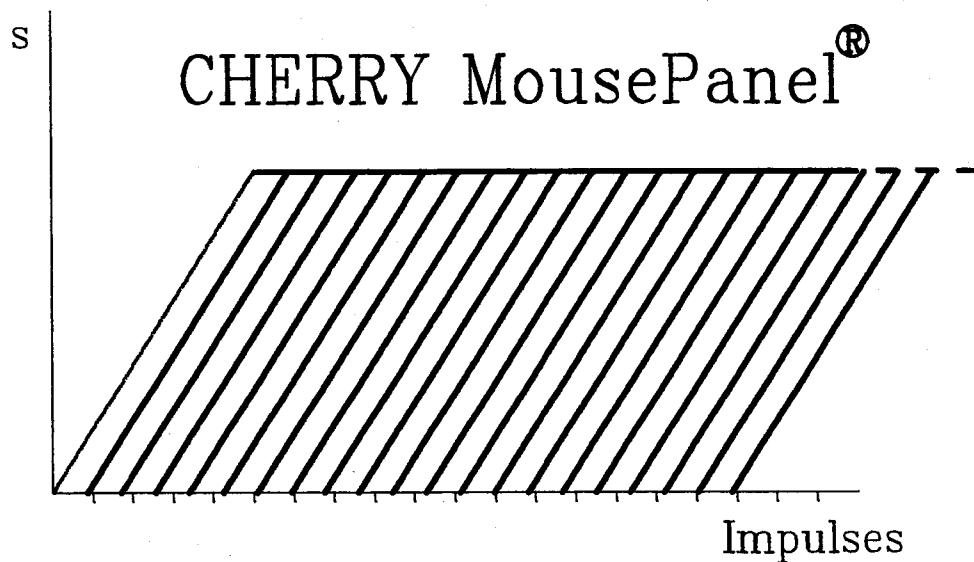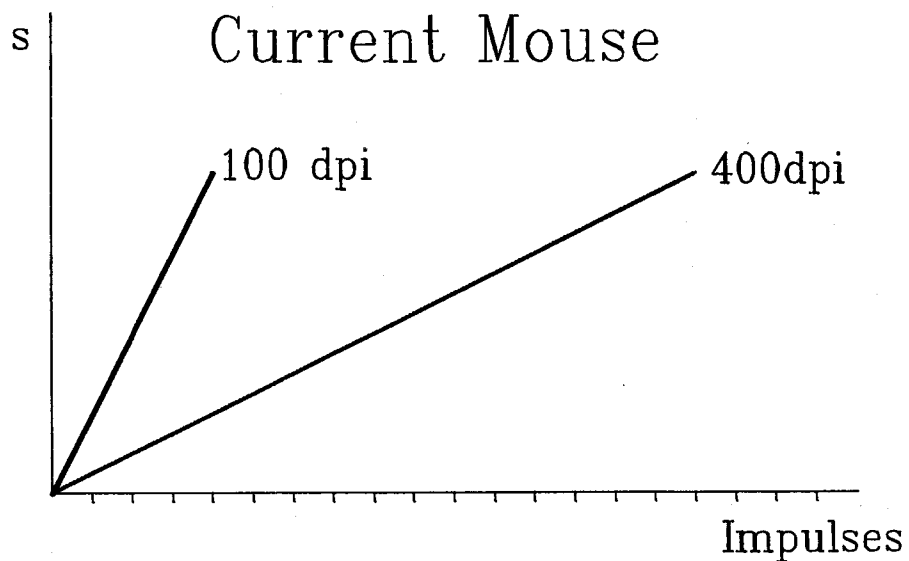
s: Travel covered on the desk

Schematic Diagram
Depicting The Electronics

Sensor

Sensoric

Matrix

RM–Bus

Matrix
Out
Bus

8051

AD–Bus

Control–Bus

IBM–Interface

ASIC

RS 232
Interface

Data

Clock

Computer–Interface
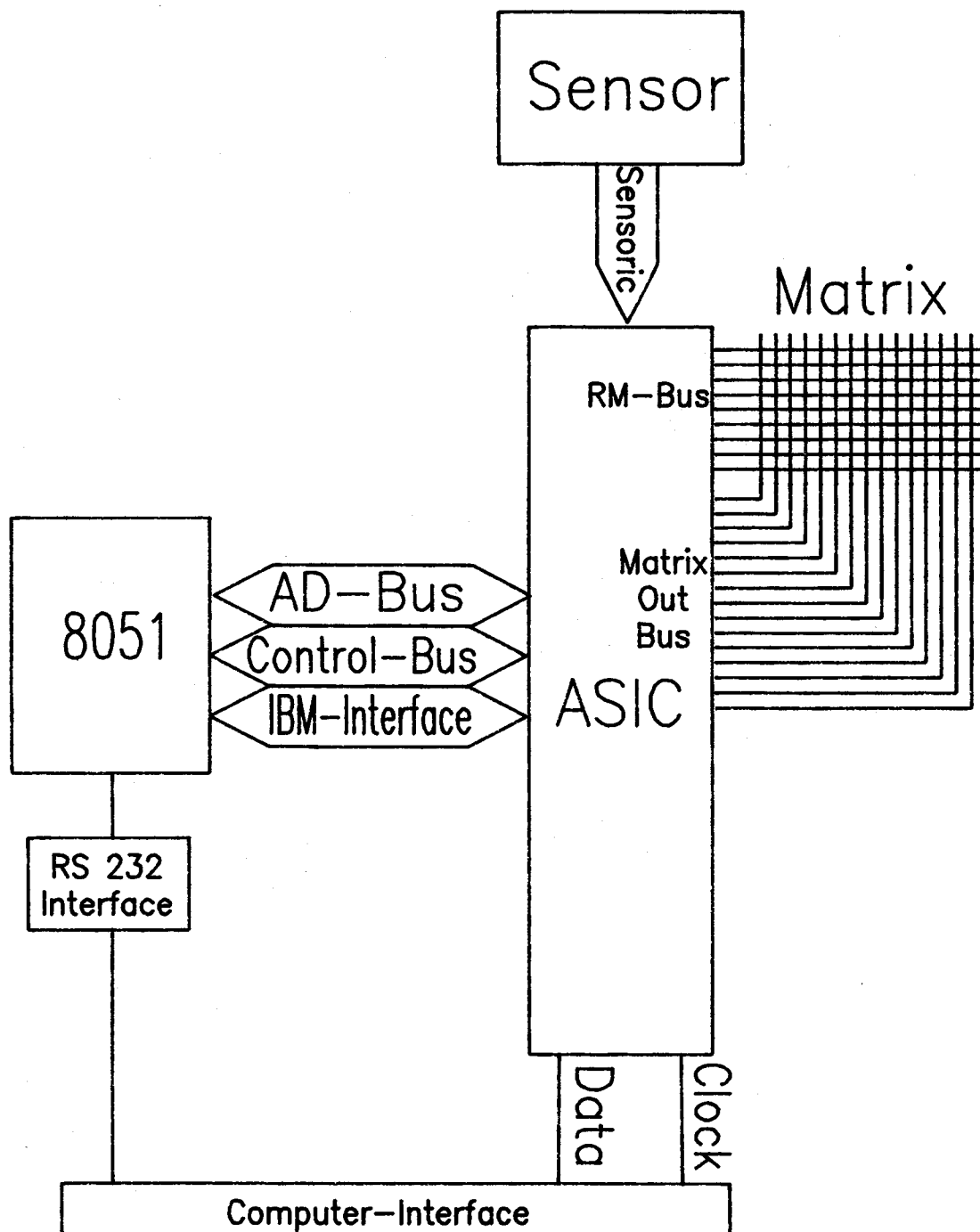
CHERRY MouseBoard Software

Contents of the diskette "CHERRY MouseBoard driver 4.1"

MOUSE.COM   Command file for the MouseBoard driver (can be called from the AUTOEXEC.BAT file)

MOUSE.SYS   Device driver file (if required, for calling from the CONFIG.SYS file)
(* MOUSE.SYS is not copied by MINSTALL *)

MINSTALL.BAT   Use this file to install the MouseBoard driver on your hard disk or floppy disk.

ANSWER.COM   Utility programs for MINSTALL MKCD.COM
MKCD2.COM
*.SCR

MTRACK40.EXE   Working data for MINSTALL (for the mouse test)
HIDEDRVR.EXT
COMCHECK.EXE

READ.ME   The file that you are now reading

Attention: The command MINSTALL is used to install the MouseBoard software; INSTALL is used to install PaintShow Plus.

Installation of the driver without MINSTALL

In order for your MouseBoard to function, the CHERRY MouseBoard driver must be loaded into memory.

This can be done in either of two different ways:

A. The MouseBoard driver can be called by means of an ordinary command. This can be done either manually, by typing MOUSE at the DOS prompt or by including this command in your AUTOEXEC.BAT file.

In this specific case, we will use the file MOUSE.COM.

Systems with two floppy disk drives:
Copy the file MOUSE.COM to the diskette that you will be using to run the software. Then include the command MOUSE in your AUTOEXEC.BAT file if it is wished for the driver to be automatically loaded. Otherwise you must load the software into memory with the command MOUSE each time the computer is switched on.

Hard-disk systems:
Copy the file MOUSE.COM into the desired drive and directory. Then add the command MOUSE to your AUTOEXEC.BAT file, if it is wished for the driver to be automatically loaded each time the computer is switched on. Otherwise you must load the software manually after each system start by typing MOUSE.

Note: If several ports are unused on your system, you must load the driver with the command MOUSE.SER.

B. Add the command MOUSE.SYS to the CONFIG.SYS file.

First copy the file MOUSE.SYS into either the root directory or a subdirectory (e.g. MYVER). Then add the following command to your CONFIG.SYS file:

      DEVICE=MOUSE.SYS   if the file MOUSE.SYS is stored in the root directory.

or

      DEVICE=MYVER\MOUSE.SYS   if MOUSE.SYS is stored in the subdirectory MYVER.

Note: If several ports are unused on your system, you must add the command line DEVICE=MOUSE.SYS SER to your CONFIG.SYS file.

Important: Since the CHERRY MouseBoard is fully compatible with the Microsoft MouseBoard, we recommend installing the CHERRY MouseBoard using the serial Microsoft MouseBoard option in order to eliminate any possibility of confusion.

Using the CHERRY MouseBoard under IBM.DOS 4.0

After installing IBM.DOS on your computer, you will have the new files AUTOEXEC.BAT in the root directory and DOSSHELL.BAT in the DOS directory. In order for your CHERRY MouseBoard to work with the mouseboard driver stored in memory, you must first modify these files.

Use a simple text editor to open the file DOSSHELL.BAT, and look for the following command:

```
SHELLC/MOS:<driver>.MOS/TRAN/COLOR/etc.....
(<driver> stands for PCIBMDRV, PCMDRV, or PCMSPDRV)
```

Delete the character string "/MOS:<driver>.MOS" from the SHELLC command. The modified command now reads as follows:

```
SHELLC /TRAN/COLOR/etc.....
```

The next step is to modify the AUTOEXEC.BAT file by adding the MOUSE subdirectory to the PATH COMMAND. and adding the commands MOUSE and DOSSHELL:

```
PATH=C:\MOUSE
MOUSE
DOSSHELL
```

Now restart your system. You can now use your CHERRY MouseBoard both within and outside of the DOSSHELL.