
## *Rocky Enterprise Linux 9.2 Manual Pages on command 'mouse.4'*

***C:\>man mouse.4***

MOUSE(4) Linux Programmer's Manual MOUSE(4)

NAME

mouse - serial mouse interface

CONFIGURATION

Serial mice are connected to a serial RS232/V24 dialout line, see ttyS(4) for a de?

scription.

DESCRIPTION

Introduction

The pinout of the usual 9 pin plug as used for serial mice is:

| pin | name | used for |
|---|---|---|
| 2 | RX | Data |
| 3 | TX | -12 V, Imax = 10 mA |
| 4 | DTR | +12 V, Imax = 10 mA |
| 7 | RTS | +12 V, Imax = 10 mA |
| 5 | GND | Ground |

This is the specification, in fact 9 V suffices with most mice.

The mouse driver can recognize a mouse by dropping RTS to low and raising it again.

About 14 ms later the mouse will send 0x4D ('M') on the data line. After a further

63 ms, a Microsoft-compatible 3-button mouse will send 0x33 ('3').

The relative mouse movement is sent as dx (positive means right) and dy (positive

means down). Various mice can operate at different speeds. To select speeds, cy?

cle through the speeds 9600, 4800, 2400, and 1200 bit/s, each time writing the two

characters from the table below and waiting 0.1 seconds. The following table shows available speeds and the strings that select them:

| bit/s | string |
|---|---|
| 9600 | *q |
| 4800 | *p |
| 2400 | *o |
| 1200 | *n |

The first byte of a data packet can be used for synchronization purposes.

Microsoft protocol

The Microsoft protocol uses 1 start bit, 7 data bits, no parity and one stop bit at the speed of 1200 bits/sec. Data is sent to RxD in 3-byte packets. The dx and dy movements are sent as two's-complement, lb (rb) are set when the left (right) but? ton is pressed:

| byte | d6 | d5 | d4 | d3 | d2 | d1 | d0 |
|---|---|---|---|---|---|---|---|
| 1 | 1 | lb | rb | dy7 | dy6 | dx7 | dx6 |
| 2 | 0 | dx5 | dx4 | dx3 | dx2 | dx1 | dx0 |
| 3 | 0 | dy5 | dy4 | dy3 | dy2 | dy1 | dy0 |

3-button Microsoft protocol

Original Microsoft mice only have two buttons. However, there are some three but? ton mice which also use the Microsoft protocol. Pressing or releasing the middle button is reported by sending a packet with zero movement and no buttons pressed. (Thus, unlike for the other two buttons, the status of the middle button is not re? ported in each packet.)

Logitech protocol

Logitech serial 3-button mice use a different extension of the Microsoft protocol: when the middle button is up, the above 3-byte packet is sent. When the middle button is down a 4-byte packet is sent, where the 4th byte has value 0x20 (or at least has the 0x20 bit set). In particular, a press of the middle button is re? ported as 0,0,0,0x20 when no other buttons are down.

Mousesystems protocol

The Mousesystems protocol uses 1 start bit, 8 data bits, no parity and two stop bits at the speed of 1200 bits/sec. Data is sent to RxD in 5-byte packets. dx is sent as the sum of the two two's-complement values, dy is send as negated sum of

the two two's-complement values. lb (mb, rb) are cleared when the left (middle, right) button is pressed:

| byte | d7 | d6 | d5 | d4 | d3 | d2 | d1 | d0 |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0 | 0 | 0 | 0 | lb | mb | rb |
| 2 | 0 | dxa6 | dxa5 | dxa4 | dxa3 | dxa2 | dxa1 | dxa0 |
| 3 | 0 | dya6 | dya5 | dya4 | dya3 | dya2 | dya1 | dya0 |
| 4 | 0 | dxb6 | dxb5 | dxb4 | dxb3 | dxb2 | dxb1 | dxb0 |
| 5 | 0 | dyb6 | dyb5 | dyb4 | dyb3 | dyb2 | dyb1 | dyb0 |

Bytes 4 and 5 describe the change that occurred since bytes 2 and 3 were transmit? ted.

Sun protocol

The Sun protocol is the 3-byte version of the above 5-byte Mousesystems protocol: the last two bytes are not sent.

MM protocol

The MM protocol uses 1 start bit, 8 data bits, odd parity and one stop bit at the speed of 1200 bits/sec. Data is sent to RxD in 3-byte packets. dx and dy are sent as single signed values, the sign bit indicating a negative value. lb (mb, rb) are set when the left (middle, right) button is pressed:

| byte | d7 | d6 | d5 | d4 | d3 | d2 | d1 | d0 |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0 | 0 | dxs | dys | lb | mb | rb |
| 2 | 0 | dx6 | dx5 | dx4 | dx3 | dx2 | dx1 | dx0 |
| 3 | 0 | dy6 | dy5 | dy4 | dy3 | dy2 | dy1 | dy0 |

## FILES

/dev/mouse

A commonly used symbolic link pointing to a mouse device.

## SEE ALSO

ttyS(4), gpm(8)

## COLOPHON

This page is part of release 5.05 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at https://www.kernel.org/doc/man-pages/.