

Input Devices

Mice

Last updated 2/29/24

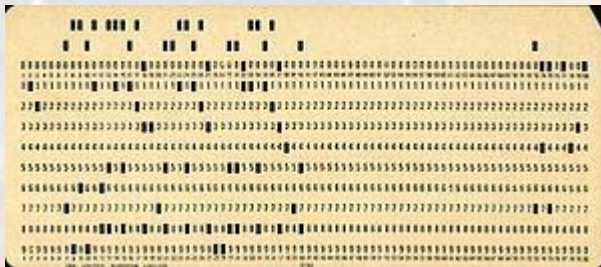
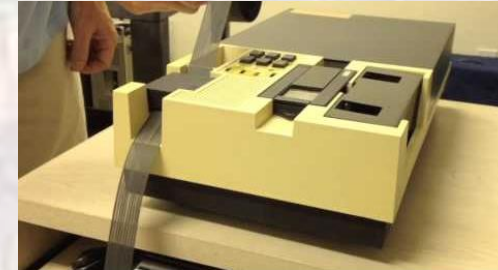
Input Devices - Mice

- When I was your age ...

teletypes

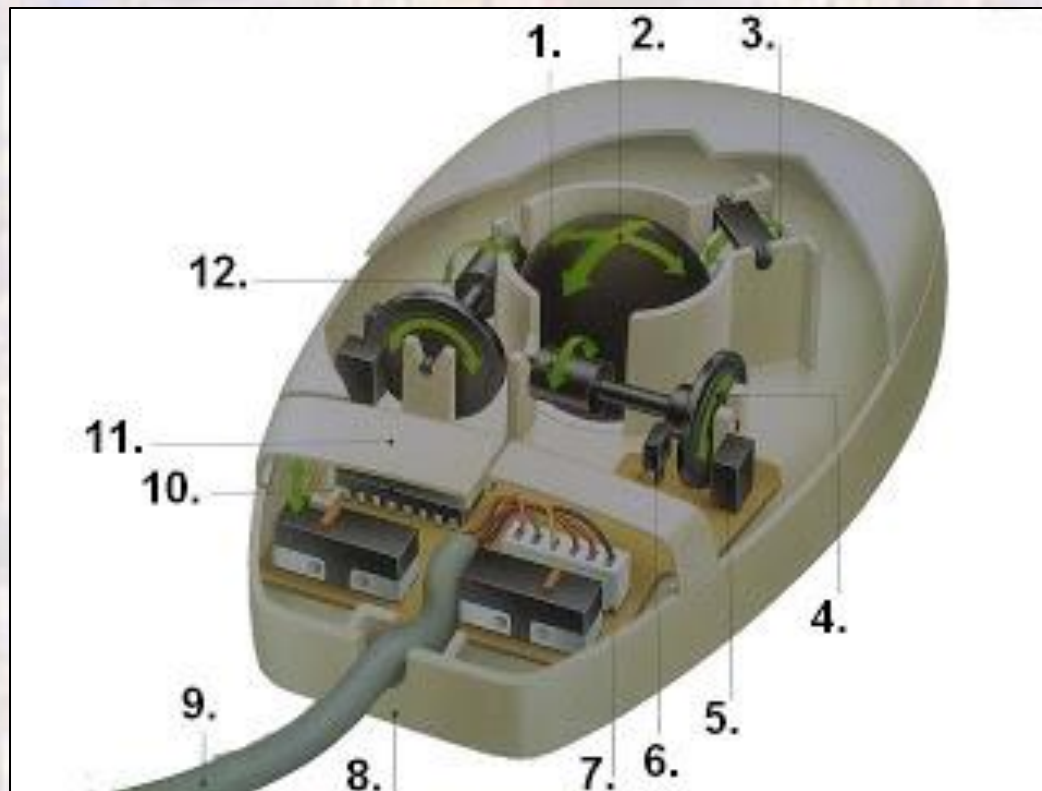
paper punch tapes

computer punch cards



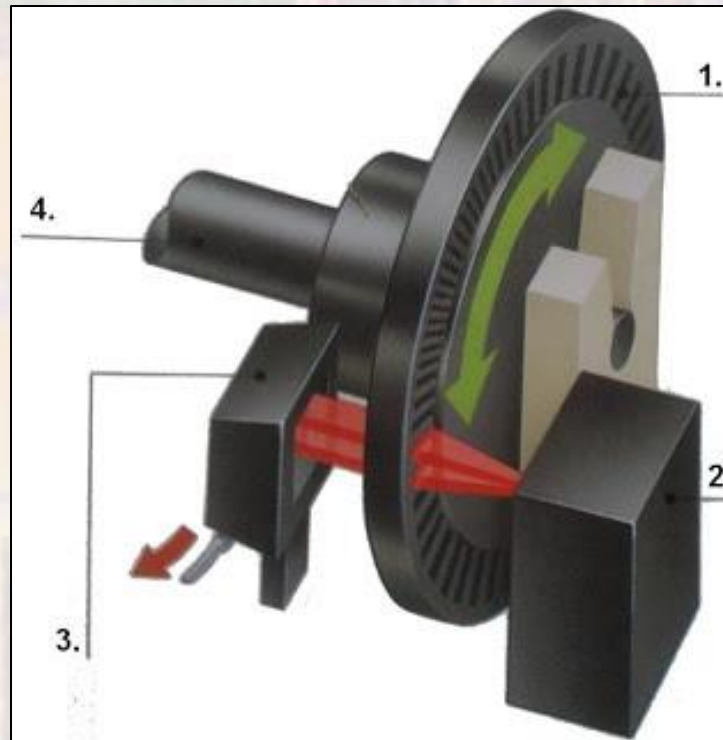
Input Devices - Mice

- Opto-Mechanical
 - Mechanical Structure



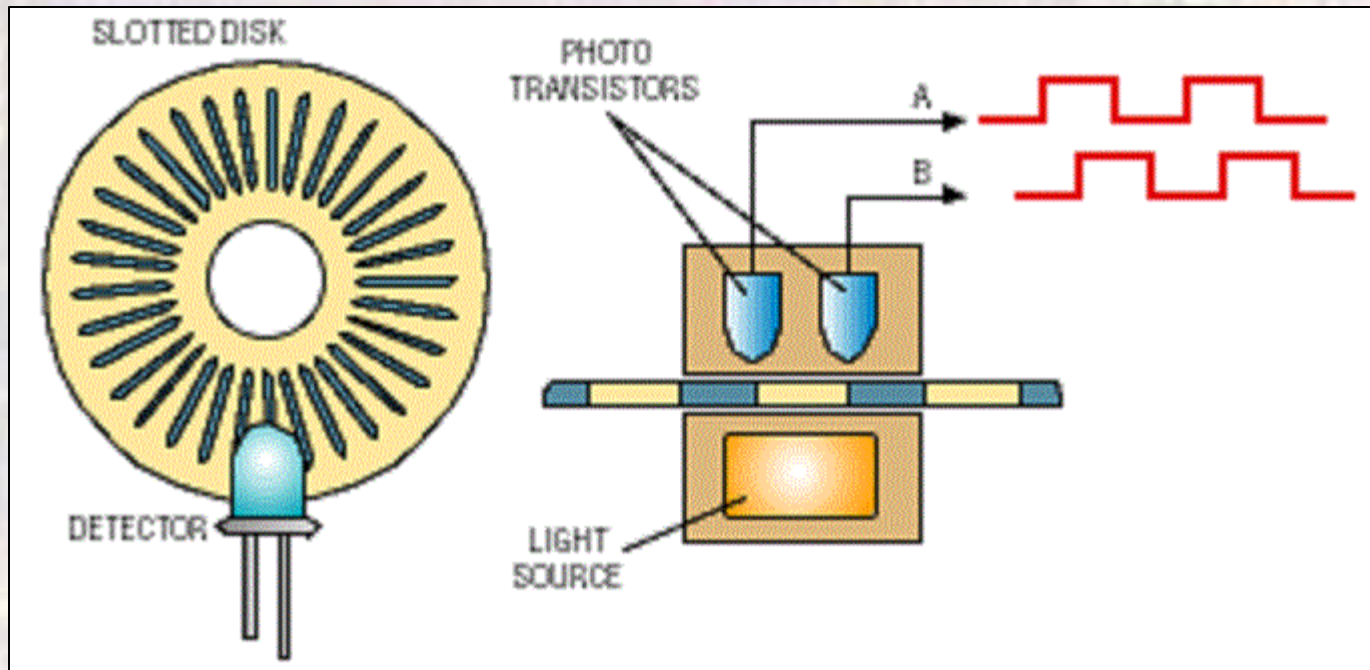
Input Devices - Mice

- Opto-Mechanical
 - Slotted Disk Receiver



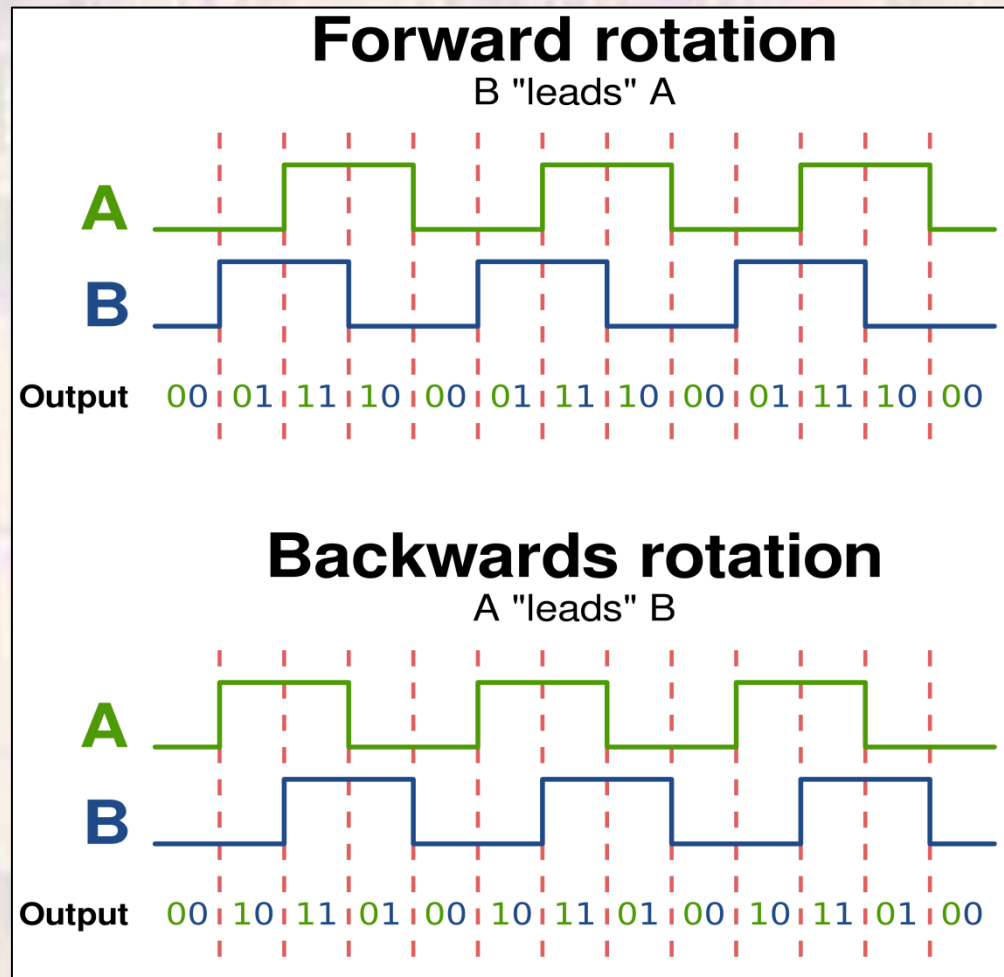
Input Devices - Mice

- Opto-Mechanical
 - Slotted Disk Operation



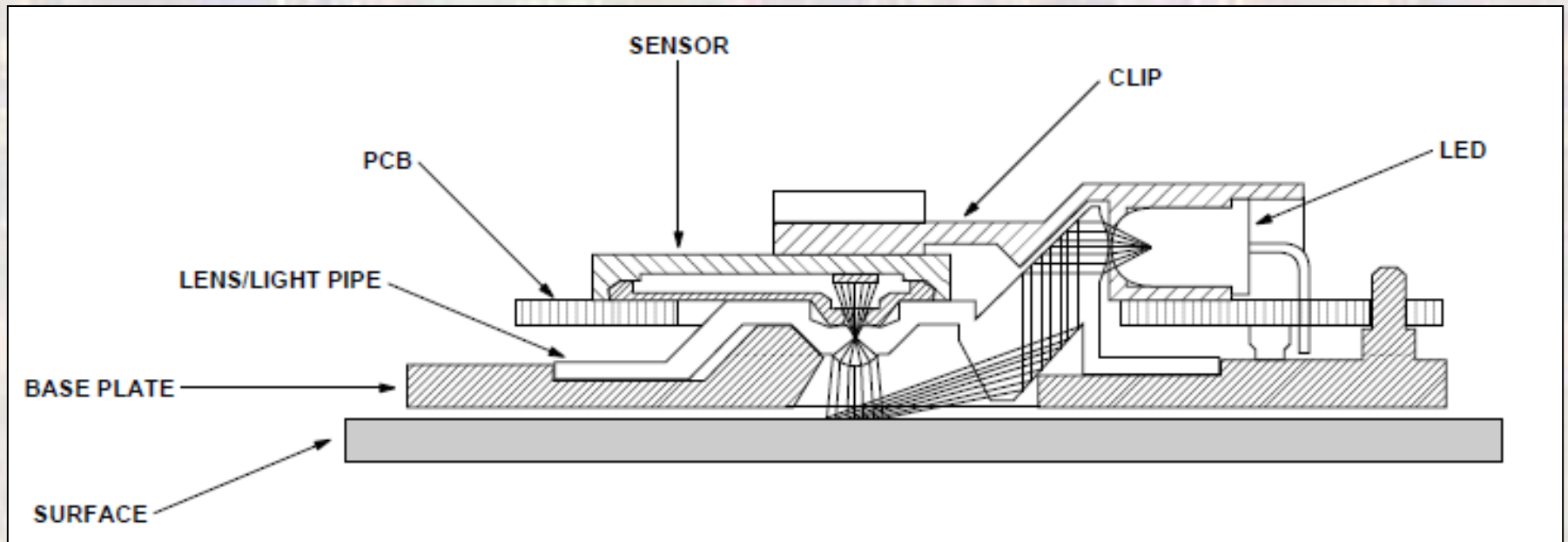
Input Devices - Mice

- Opto-Mechanical
 - Slotted Disk Signals



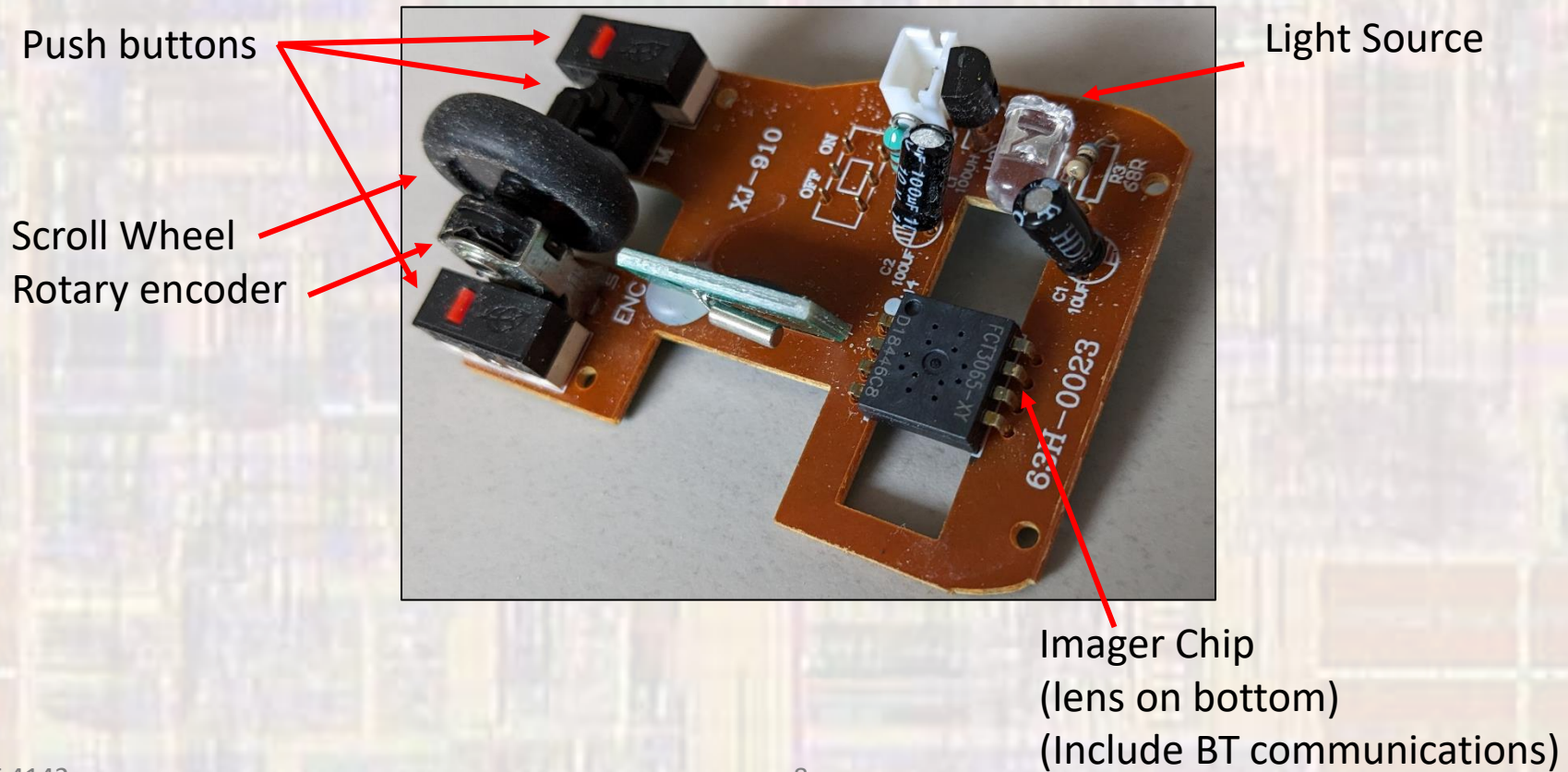
Input Devices - Mice

- Optical Mouse
 - Mechanical Structure



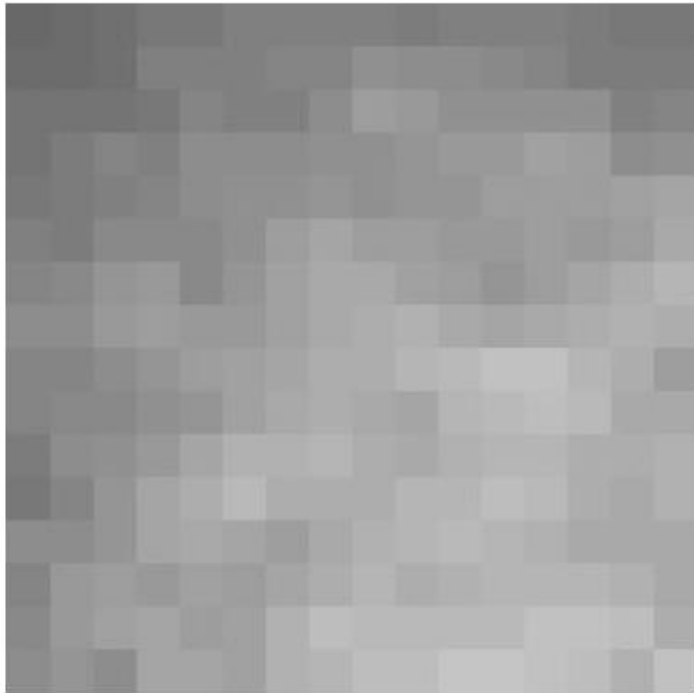
Input Devices - Mice

- Optical Mouse
 - Mechanical Structure

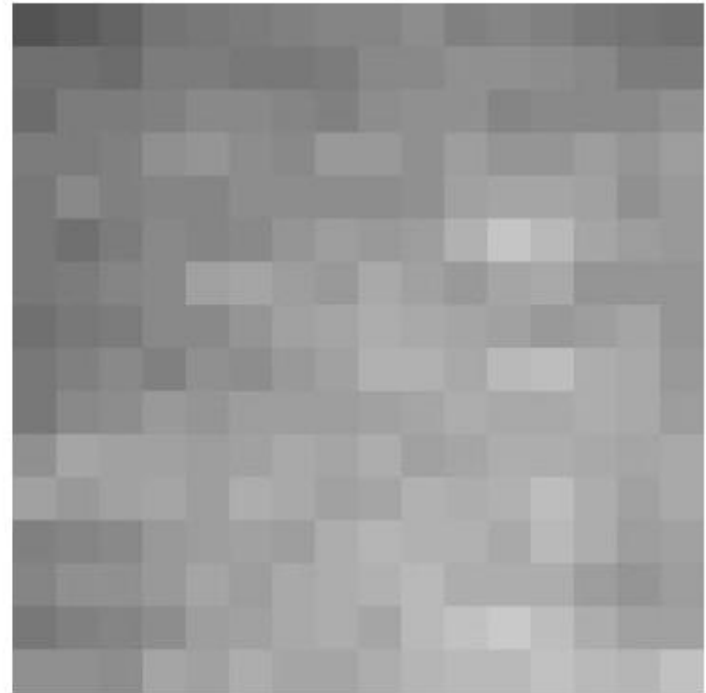


Input Devices - Mice

- Optical Mouse
 - Imaging



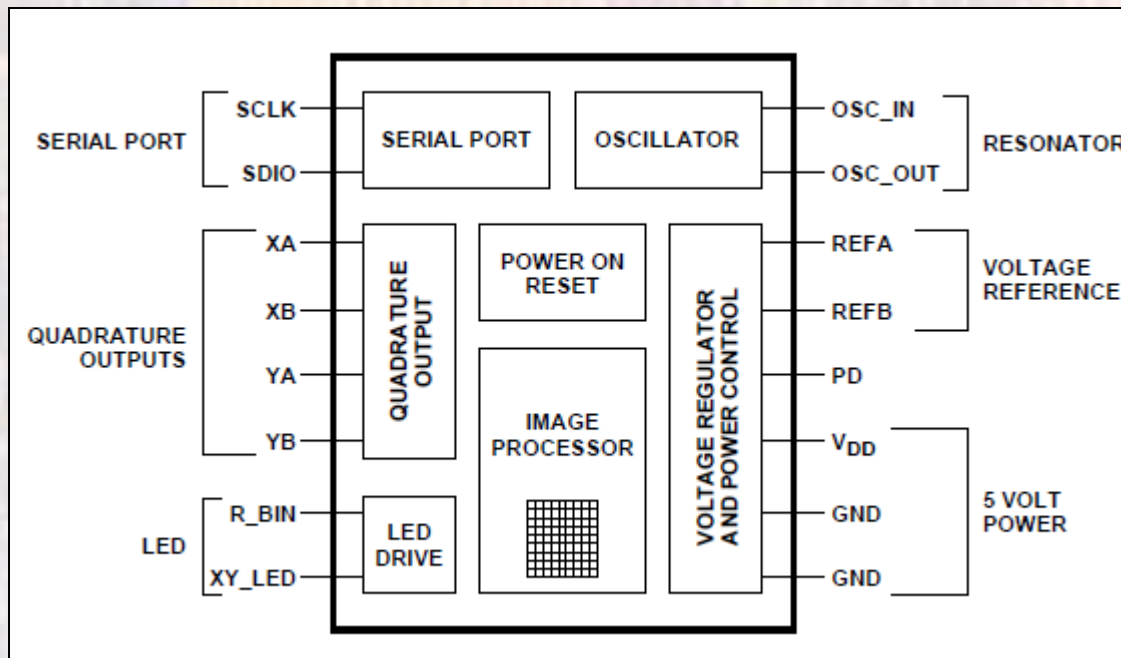
(a) White Paper



(b) Manila Folder

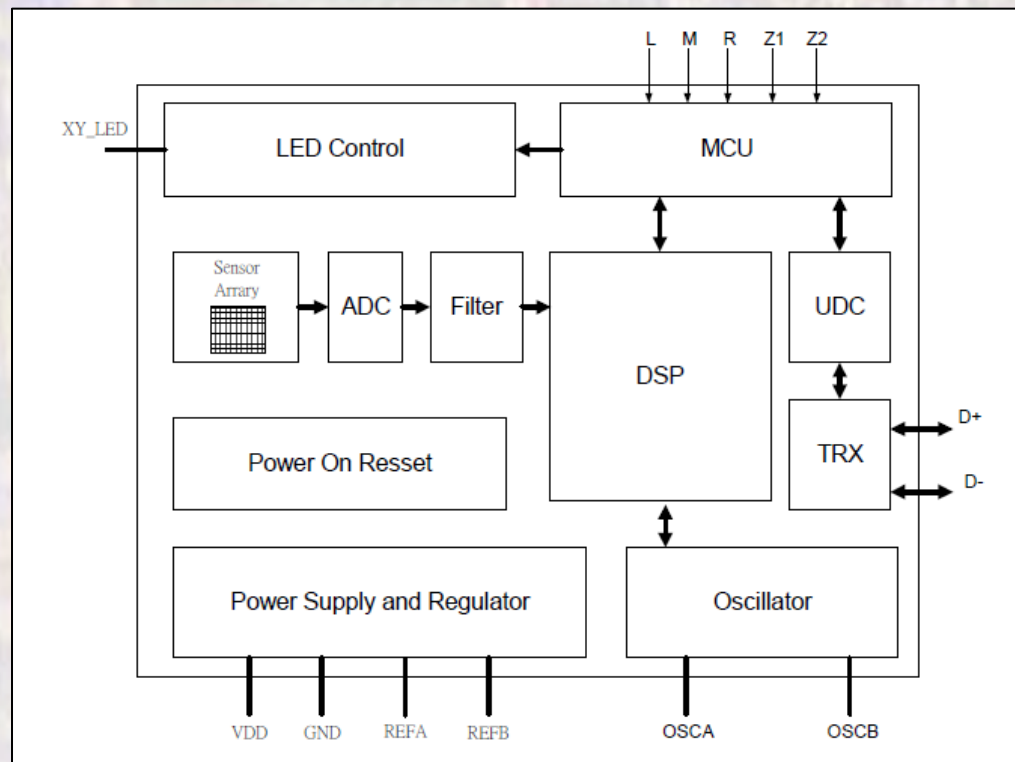
Input Devices - Mice

- Optical Mouse
 - System Diagram



Input Devices - Mice

- Optical Mouse
 - Image Processor
 - By comparing images – direction and distance can be calculated



Input Devices - Mice

- Optical Mouse
- Flow Diagram

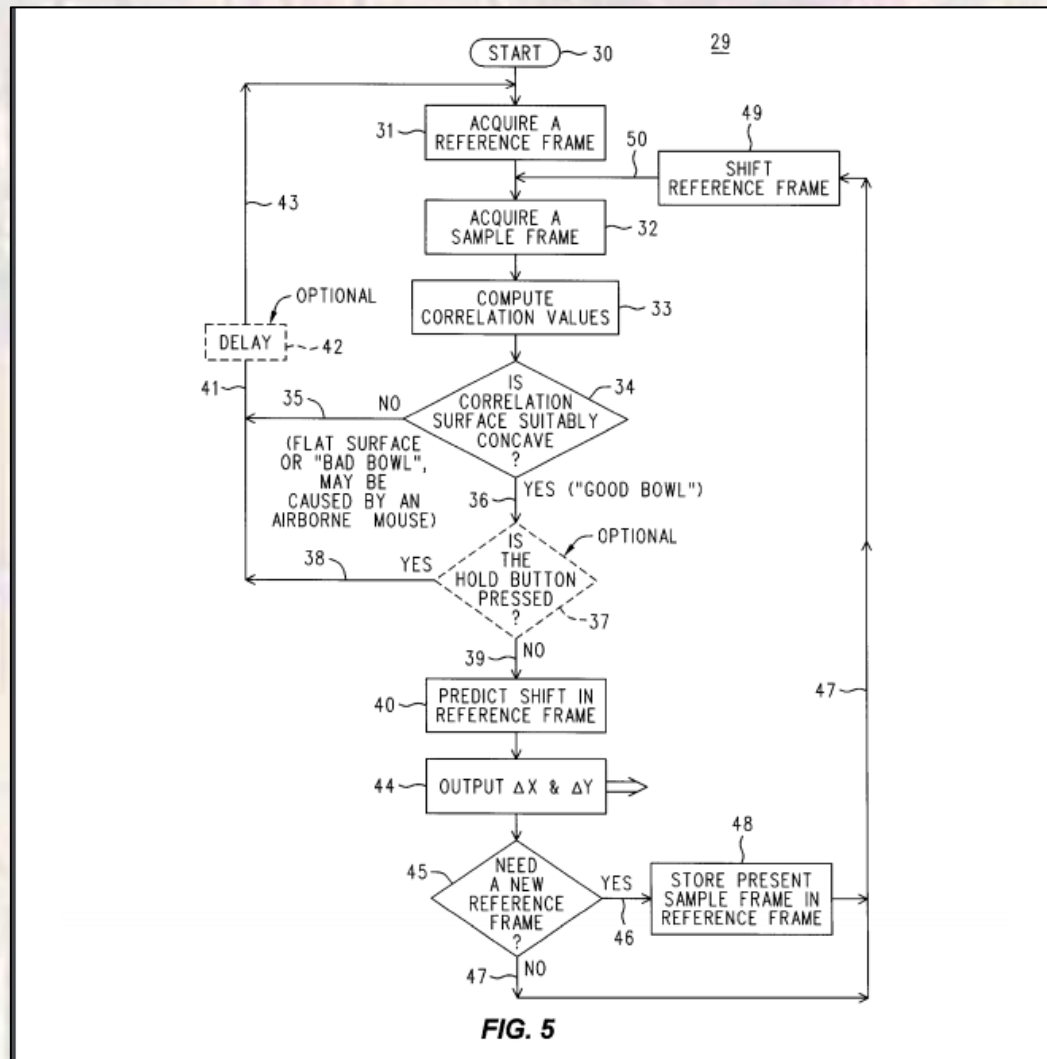
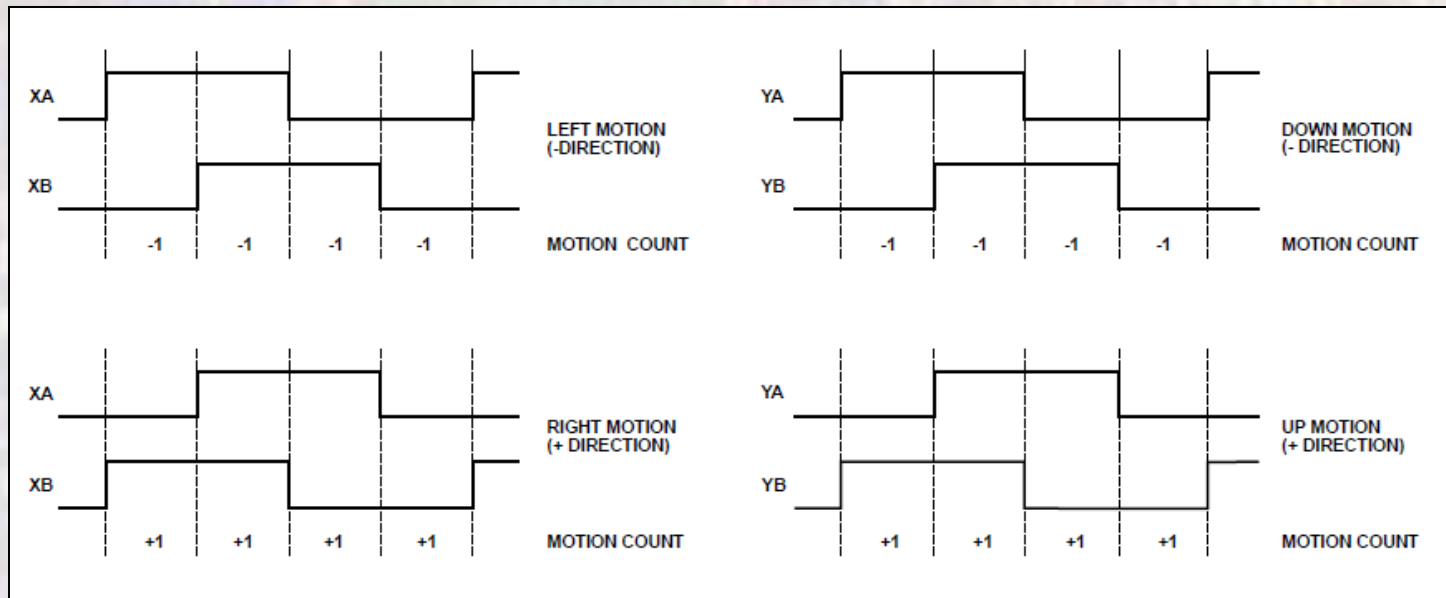


FIG. 5

Input Devices - Mice

- Optical Mouse
 - Signaling
 - Output is a quadrature signal - just like a mechanical mouse



Input Devices - Mice

- Optical Mouse
 - Parametrics
 - Frame Rate: 1500 frames/sec
 - Typical resolution: 400-800 cpi (counts/inch)
 - Speed: 14ips (inches per second)
 - Typical sensor dimension: 16x16 to 32x32
 - Typical Path error: 0.5%

Input Devices - Mice

- Optical Mouse
 - Focal range
 - Limited to a few mm

