

SPECIFICATION

Of
WMU91S Cordless Optical Mouse

Note:

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Caution:

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

REV : 1.02

Prepared by MLK Technologies Limited

10. Jun.2003

Part 1.0 : General features and description

- Prevent Repetitive Strain Injury on your wrists and arms!
- Radio frequency : 27 MHz, single channel with 256 random ID, no more problems with radio frequency interference .
- Battery suggestion: Two AA size alkaline batteries for mouse.
- The operation distance of 1.8M (typically under normal office environment).
- Mouse resolution of 800dpi counts per inch of motion.
- Sensor detects motion on all kinds of surface, including wood, plastics, pants, etc... (Highly reflective like mirror or deep dark color may not work properly).
- Compatible with windows 98/ME/2000/XP.
- Super 3D wheel scrolling functions, easy to scroll or zoom for the window and web.
- Compatible shape:
The comfortable shape provides easy control.

Part 2.0 : System Requirements

- . IBM PC or compatible system

Part 3.0 : Preface

The functionality and performance requirements related to the mouse are defined in this specification.

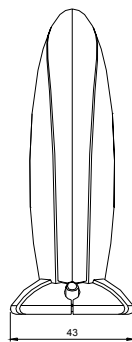
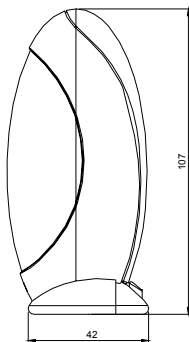
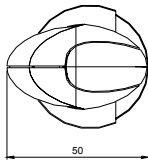
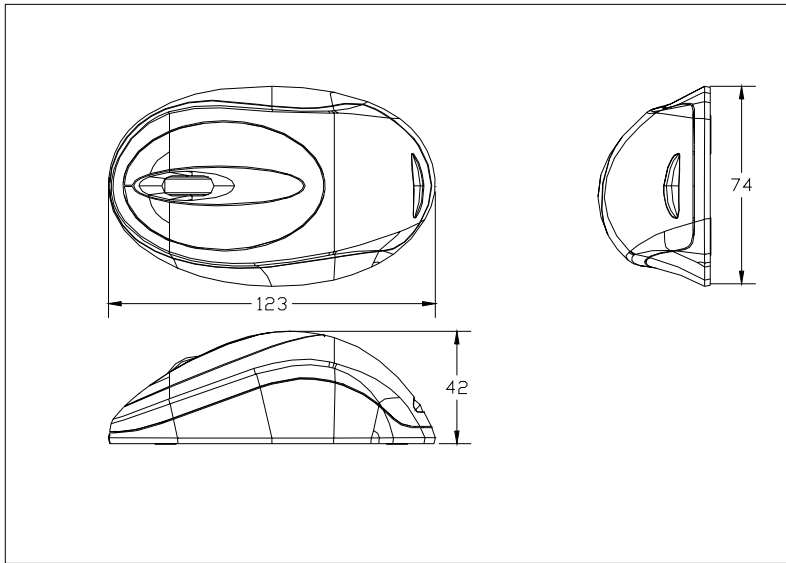
Part 4.0 : Version

- PS/2 Interface
- USB Interface

Part 5.0 : Physical characteristics and configuration

Item 5.1: Dimension

- Mouse : 123mm(L) x 74mm(W) x 42mm(H)
- Receiver:50mm(L) x 42mm(W) x 107mm(H)



Item 5.2: Material

Mouse	Body	ABS
	Wheel	Rubber
Receiver	Body	ABS

Item 5.3: Finish: Texture

Item 5.4: Color: To be defined by ID

Item 5.5: Button

Mouse: 3 Buttons with scrolling wheel, 1 CONNECT button,

Receiver: 1 CONNECT button.

Item 5.6: Mechanical Performance

- 5.6.1 Operating force of mouse buttons: $80g \pm 20gf$
- 5.6.2 Operating force of browser switches: $170g \pm 25gf$
- 5.6.3 Operating force of wheel scrolling: $20 \pm 10gf$
- 5.6.4 Operating force of movable: $60 \pm 10gf$
- 5.6.5 Mouse weight: $160 \pm 15gf$

Part 6.0 : Electrical specification

Item 6.1: Compatibility

- The USB mode is using the low speed interface defined in the USB specification. It's compliant to the USB specification as well as to the HID class specifications.
- The USB mode shall be compatible with IBM PC/PENTIUM and works with operating system such as Windows 98/2000/ME/XP as well as the most software applications.

Item 6.2 : Technical of mouse

Optical sensor for X/Y axis, the precise sensor detects motion on hundreds of surfaces, including wood, plastic, and even your pants leg. (highly reflective surface or deep dark color surface may not work properly) .Wheel button uses a mechanical encoder.

Item 6.3 : Sensor Report Rate on Mouse

2300 times per second

Item 6.4 : Sensor Light on mouse

Red LED

Item 6.5 : Power Requirement (Receiver)

5V/ DC 20mA directly from Computer USB Port

Item 6.6 : Cable

The length of the cable on receiver is 1.6 meters and the color is defined by ID.

Item 6.7 : Operating Angle

The mouse operation angle is 360 degrees.

Item 6.8 : Operating Distance

The Mouse operation distance is 1.8 Meter (typically under normal office environment, Mouse to Receiver set),

Item 6.9 : ID changeable

The ID is changed by the CONNECT button .

Item 6.10 Battery

6.10.1 Battery Type

The mouse use two AA alkaline batteries.

6.10.2 Battery Consumption

Mouse will be on sleep mode 1 while not moving the mouse within 10 second.Sleep mode 1 will maintain within 90 seconds before turning into sleep mode2. Sleep mode 2 will maintain within 10 minutes before turning into sleep mode 3. Mouse work again by movement or mouse click.

Operating mode: $28mA \pm 10\%$ @ 3V

Sleep mode 1: $4.0mA \pm 10\%$ @ 3V

Sleep mode 2 : $800UA \pm 10\%$ @ 3V

Sleep mode 3 : $300UA \pm 10\%$ @ 3V

6.10.3: Low Battery Indicator

When the battery voltage is less than 1.8V, the indicator on offside of the mouse should be blinking when moving the mouse.

6.10.4: Battery saving mode, provides for longer battery life

Item 6.11 : Tracking Speed

The unit shall be capable of tracking between 50mm/s and 350mm/s of hand movement on the matt white paper without loss of data.

Item 6.12 :Sensor Features

- Optical motion estimation technology
- Complete 2D motion sensor
- Accurate motion estimation over a wide range of surfaces
- High speed motion detection up to 14+inches/sec
- High resolution up to 800dpi

Part 7.0: Button Programming

The MLKF-800F Optical Wheel Mouse has 3 buttons which can be programmed to perform a variety of functions for speeding up common tasks with a single click.

Some examples of functions:

- Close
- Forward command
- Back command
- Click Lock
- Start Menu
- My computer
- Undo
- Alt
- Ctrl

Part 8.0: Reliability and environmental specification

Item 8.1 : Button Switch Activation

Conditions: 3 cycles per second.

Testing method: a small DC motor fixed with cam automatically press the key for three time per second. The switch is connected to a calculator. The number displayed on calculator is pressed cycle of the key.

Result: key tested have a lift cycle of more than 1,000,000.00.

Item 8.2 : Cable Bending Strength

Conditions: Cable load at 100gram,

Testing methods: bend 60 degrees any direction from its centerline at speed of 30 cycles/min. 5000 cycles.

Result: No visible damage and no breakage in each wire.

Item 8.3 : Drop Shock with Bare Unit

Conditions: Drop the Unit from 76cm height onto floor.

Testing Methods: drop the unit on top, bottom and 4 side of the unit (1 time for each side).

Result: The Unit function properly, no mechanical failure.

Item 8.4 : Drop Shock in Gift box

Conditions: Unit have been packed with gift box

Testing Methods: Drop the gift box from 91cm onto a floor, on the 4 corners and 6 sides of the box
(1 time for each side)

Result: no content escape from packaging.

Item 8.5 : High Temperature Test for operating pattern

Conditions: N/A

Testing Methods: Keep the unit at the temperature of 0 to 40 degrees Celsius and relative humidity of 0% to 95% for 25 hours and then left at ambient room temperature for 2 hours.

Result: the unit work properly

Item 8.6 : Heat Cycle Test for Shipment Pattern

Conditions: N/A

Testing Methods: -40 degrees Celsius to 65 degrees Celsius under 0% to 90% related humidity with total time of 40 hours, and then left at ambient room temperature for 2 hours.

Result: The unit work properly

Item 8.7 : Vibration Test

Unit shall survive a vibration within a frequency range of 10 to 200Hz at 0.015 square of g/Hz and 200 to 500 Hz at -6dB/oct for X,Y, and Z axis and 0.5 hour per axis.

Part 9.0 : Product Compliance

Item 9.1 : Actual Compliance Label

The mouse is certified to comply with the limits for class B computing device pursuant, to subpart of part of 15 of FCC rules and CE mark.

