

Applicant : MLK Technologies Limited

FCC ID : PP20102H0

SPECIFICATION

Of
WMU93S 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: 1.0

Prepared by MLK Industries (ShenZhen) Limited

29 March 2004

DR: Sam

CHECK:

APPD:

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.
- Mouse resolution of 800 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).
- Comfortable shape:
The comfortable shape provides easy control.
- Compatible with windows 98/ME/2000/XP.

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

- USB Interface
- PS/2 Interface

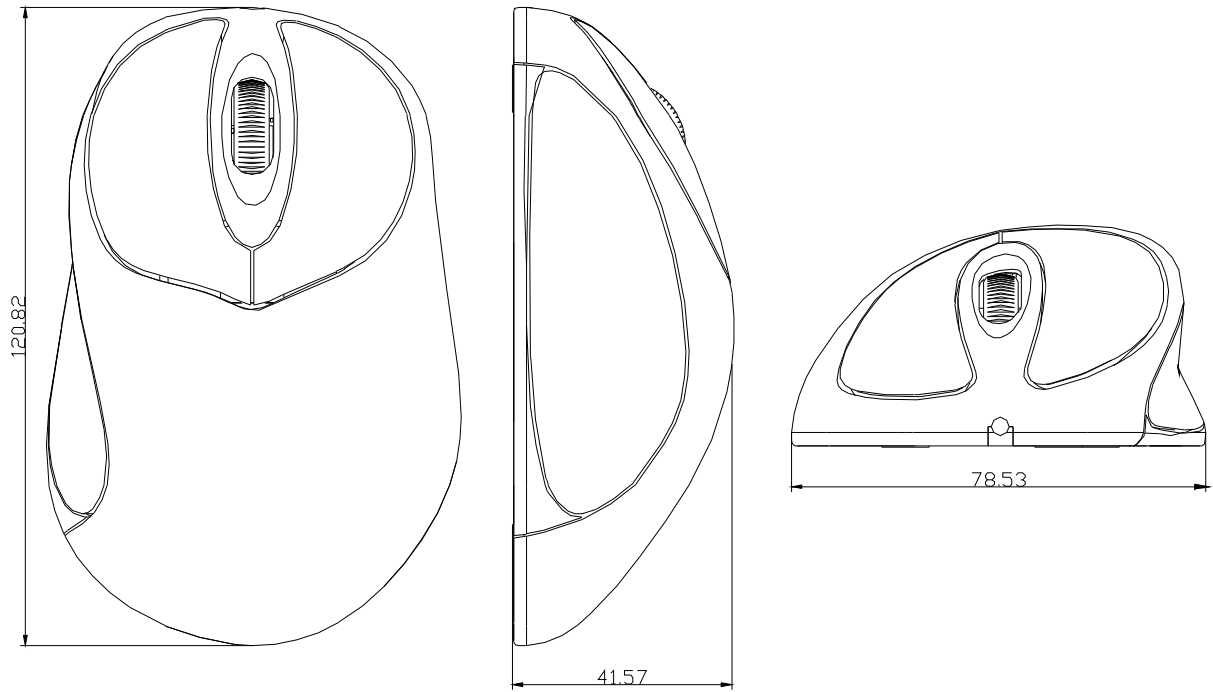
Part 5.0: Physical characteristics and configuration

Item 5.1: Dimension

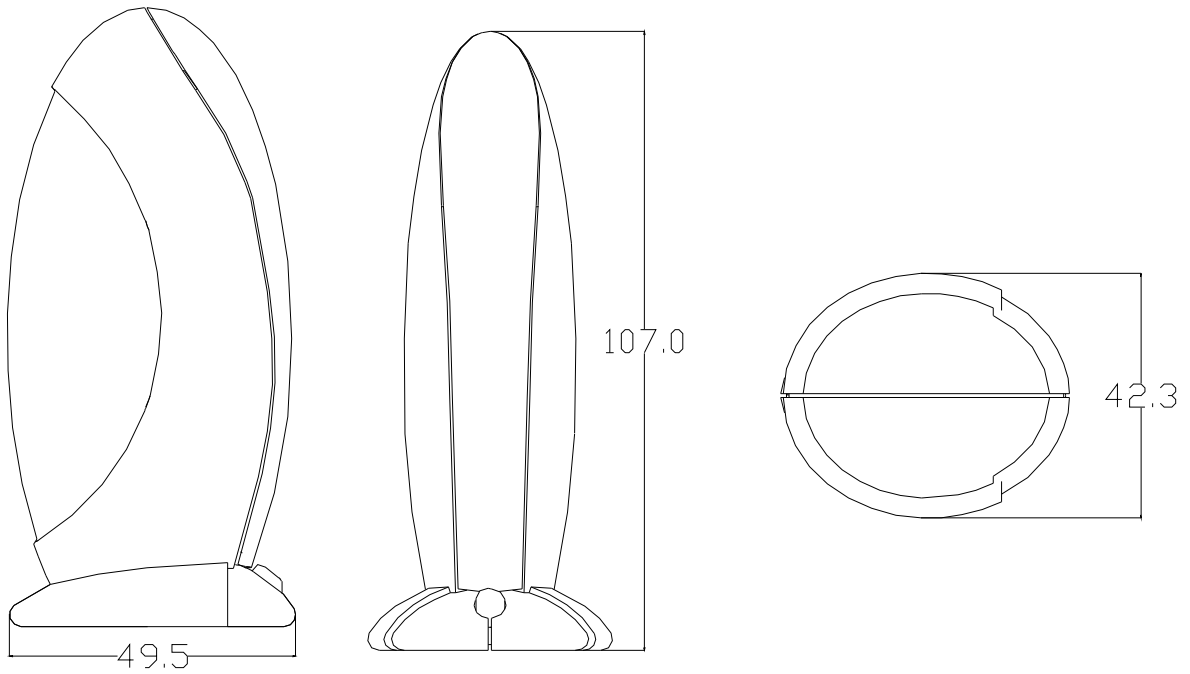
Mouse: 120.82mm(L) x 78.53mm(W) x 41.57mm(H)

Receiver: 107mm(L) x 49.5mm(W) x 42.3mm(H)

Mouse:



Receiver:



Item 5.2: Material

Mouse	Body	ABS
	Left contact side	Rubber
	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: 60 ± 15 gf

5.6.2 Operating force of browser switches: 170 ± 25 gf

5.6.3 Operating force of wheel scrolling: 20 ± 10 gf

5.6.4 Operating force of movable: 60 ± 10 gf

5.6.5 Mouse weight: 85 ± 5 g

5.6.6 Receiver weight: 70 ± 5 g

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.
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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 50mA directly from Computer USB Port

Item 6.6: Operating Angle

The mouse operation angle is 360 degrees.

Item 6.7: Operating Distance

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

Item 6.8: ID changeable

The ID is changed by the CONNECT button.

Item 6.9 Battery

6.9.1 Battery Type

The mouse use two AA alkaline batteries.

6.9.2 Battery Consumption

Mouse have 4 level mode

Operating mode: <40 mA @ 3.0V (white paper) if no mouse movement and mouse click after maintaining for approximately 3 seconds.

Sleep mode1: <3.5 mA @ 3.0V (white paper) after maintaining for approximately 2 minutes

Sleep mode2: <1.3 mA @ 3.0V (white paper) after maintaining for approximately 6 minutes

Sleep mode3: <0.5 mA @ 3.0V (white paper)

6.9.3: Battery saving mode, provides for longer battery life

6.9.4: Low Battery Indicator Function.

If your mouse blue led of the foreside is light, It's voltage under 1.8V of the batteries, It will not normal work, please change two new batteries.

Item 6.10: Tracking Speed

The unit shall be capable of tracking between 50mm/s and 400mm/s of hand movement on the matt white paper without loss of data.

Item 6.11: Sensor Features

- Optical motion estimation technology
- Complete 2D motion sensor
- No mechanical moving parts
- Accurate motion estimation over a wide range of surfaces
- High speed motion detection up to 16+inches/sec
- High resolution up to 800dpi

Part 7.0: Reliability and environmental specification

Item 7.1: Button Switch Activation

Conditions: 3 cycles per second.

Testing method: a small DC motor fixed with cam automatically presses the key for three times 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 7.2: 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 7.3: 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 7.4: 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 7.5: Heat Cycle Test for Shipment Pattern

Conditions: N/A

Testing Methods: -40 degrees Celsius to 40 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 7.6: 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.

Item 7.7: WORK Test

Work Voltage: 1.8V-3V

Work (DC +3V) Work current \leq 50mA

Sleep current \leq 25mA

Part 8.0: Product Compliance

Item 9.1: Actual Compliance Label