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C152 (Chic 1450) RF and Optical Mini Mouse with Mini Receiver Specification

1.Preface:

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

2.Version:

2.1 Radio Frequency

27MHz, Single Channel with 256 Changeable ID

27MHz, Dual Channels, 256 Changeable ID/Per Channel

2.2 Interface

PS/2 Interface

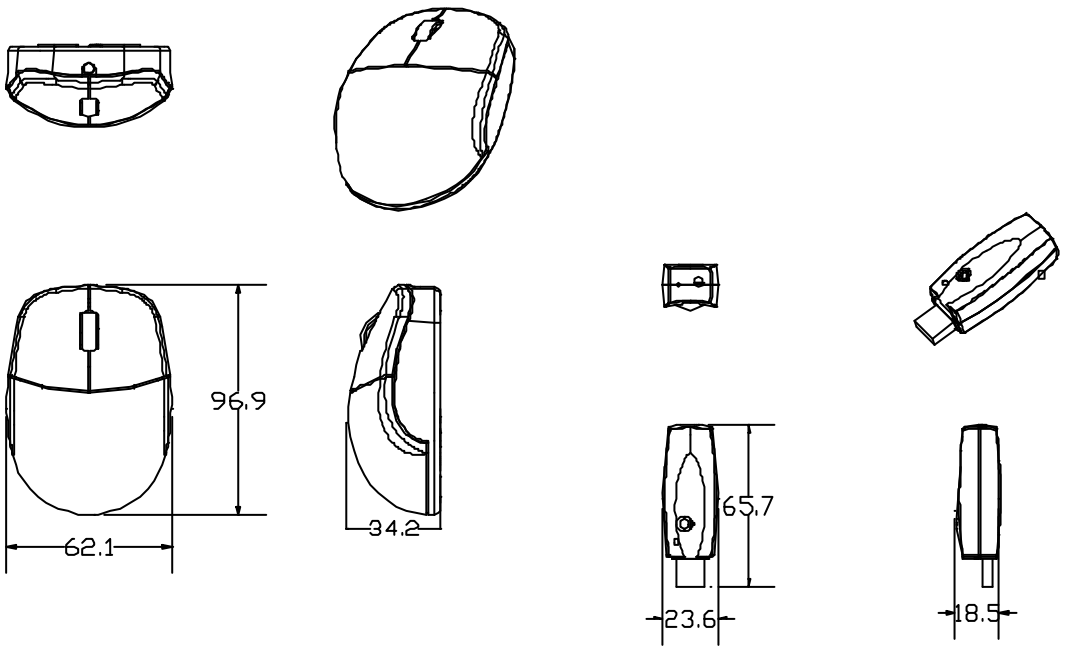
USB Interface

USB to PS/2, Combo

3.Physical Characteristics and Configuration:

3.1 Dimension

Mouse	96.9mm(L)*62.1mm(W)*34.2 mm(H)
Receiver	65.7mm(L)*23.6mm(W)*18.5 mm(H)



3.2 Material

Mouse	Body	ABS
	Wheel	Rubber
Receiver	Body	ABS

3.3 Finish Texture

3.4 Color To be defined by ID

3.5 Button

Mouse	3 buttons, 1 link switch, and 1 channel switch.
Receiver	1 link button

3.6 Mechanical Performance

3.6.1 Operating force of mouse buttons: 60 ± 20gf

3.6.2 Operating force of browser switches: 55 ± 25gf

3.6.3 Operating force of wheel scrolling: 125 ± 25gf

3.6.4 Operation force of moveable: 40 ± 10gf

3.6.5 Weight: 130 ±25g

4.Electrical Specification:

4.1 Compatibility

The PS/2 mode shall be compatible with IBM PC/XT/AT/386/486/PENTIUM and works with operating system such as DOS, Windows 95/98/2000/ME, and NT as well as the most software applications.

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 specification REV 1.1.

The USB mode shall be compatible with IBM PC/PENTIUM and works with operating system such as Windows 98/2000/ME as well as the most software applications.

4.2 USB/PS2 Mode Changeable

Combo mode included USB and PS/2 operation modes, using the adapter to change the either one mode on the receiver.

4.3 Technical on Mouse

Optical sensor for X/Y axis, the precise sensor detects motion on hundreds of surfaces, including wood, plastic, and even your pants leg. Wheel button uses a mechanical encoder.

4.4 Sensor Report Rate on Mouse

1500 times per second

4.5 Sensor Light on Mouse

Red LED

4.6 Power Requirement (**Receiver**)

4.6.1 PS2 Mode

Operating voltage: 5VDC ± 5%

Operating current: 30mA (max.)

4.6.2 USB Mode

Voltage range: 4.4V to 5.25VDC

Operating current: 30mA (max.)

Consumption in suspend mode (generic) less than 0.5mA in average value

Data transfer rate: 1.5MHz

Maximal polling rate: every 10ms (limit for low speed device on USB)

4.7 Operation Angle

The mouse operation angle is 360 degrees.

4.8 Operation Distance

The RF mouse operation distance is 1 meter (mouse to receiver set).

4.9 ID Changeable

The ID is changed by link button.

4.10 Battery

4.10.1 Battery Type: Specific

4.10.2 Battery Consumption: Mouse will be on sleep mode, while non-used after 10 minutes. Mouse works again, need to push any button on it.

Operation mode 51mA (max.)

Stand-by mode 5mA (max.)

Sleep mode 0.20mA (max.)

4.10.3 Battery Low Indicator: when the battery voltage is less than 2.3V, the indicator on the rubber wheel should be light (Red LED) while moving the mouse.

4.11 Tracking Speed

The unit shall be capable of tracking between 50mm/s and 254mm/s of hand movement on the matt white paper without loss of data.

4.12 Charging

While 1' st using, should charge 4~6hrs at least. The charge LED on the mouse will be light steadily in charging mode.

4.12.1 Power from Receiver: Connect receiver and mouse with a DC plug cable.

4.12.2 Power from Adapter: AC to DC adapter plugs in the mouse.

4.12.2.1 Input: 120V/AC 60Hz

Output: 6V/DC 300mA

4.12.2.2 Input: 230V/AC 50Hz

Output: 6V/DC 300mA

4.12.3 Power from USB Charger: Connect USB port of PC and mouse with an USB Charger.

4.13 Data Transmission

The indicator of data transmission on the receiver is green LED. While moving the mouse or

changing the ID, the LED will be flash. Otherwise, the indicator lights steadily.

5.Software:

Button Definition (Default):

Button	Left (1)	Right (2)	Wheel (3)
Click	Select	Context Menu	Scroll Up/Down
Double Click	Command		
Others			Programmable

6.Reliability Testing Specification:

Individual units must pass any and all of the following tests. The order of testing is subject to the tester. Passing the test is defined as functioning properly without significant damage; including but not limited to mechanical failure, electrical failure, chips or cracks in the housing or significant changes in the tactile feel.

6.1 Mean Time Between Failure (MTBF)

The unit shall have an expected MTBF under operating conditions of not less than 150,000 hours (on condition 6 hours per day operation, 250 days per year with 99% confidence level).

6.2 Button Switch Activation

The unit shall survive a minimum of 1,000,000 times (for all of the micro switches on mouse). Tested at 2 cycles per second.

6.3 Scroll Rotation

The unit shall be rotated a minimum of 100,000 cycles at a speed of 10 cycles per minutes without electrical load after which measurement shall be made.

6.4 Tracking Life

The unit shall survive a minimum of 100km at a speed of 10cm per second.

6.5 Drop Shock with Bare Unit

Drop the unit from 76cm height onto a concrete floor, on the top, bottom and 3 sides without cable side of the unit (1 time for each side). The unit should be without damage. Damage is defined as failure of the unit to function properly, chips in the housing, or mechanical failure of any of the parts.

6.6 Drop Shock in Gift Box

Drop the unit in box from 91cm onto a concrete floor, on the 4 corners and 6 sides of the box (1 time for each side). Resulting damage should be minimal and shall not allow for contents to escape from packaging.

6.7 Drop Shock in Carton

Unit shall survive a drop test in the weight of product carton on 1 corner, 3 edges and 6 sides

from the height onto a concrete floor (1 time for each side).

</= 9.5kg------91cm

</= 18.6kg------76.2cm

</= 27.6kg------61cm

</= 45.3kg------45.7cm

6.8 High Temperature Test for Operating Pattern

The unit is kept at the temperature of 0 to 40 degrees Celsius and relative humidity of 0% to 95% for 250 hours and then left at ambient room temperature for 1 hour.

6.9 Heat Cycle Test for Shipment Pattern

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

6.10 Cable Bending Strength

The cable must withstand bending 60 degrees any direction from its centerline; the detail testing conditions as followed:

Load: 100 grams force

Angle: +/-60 degrees around 25.4mm diameter

Speed: 30 cycles/min

Criteria: Min 5,000 cycles, with no visible damage and no breakage in each wire.

6.11 Vibration

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

7.Reliability Performance:

After having been subjected to any and all of the reliability tests outlined in section 6.0, the unit shall meet the following performance specifications:

Button Actuation:

25~55 grams force at outer edge of button (minimum force of actuation)

40~80 grams force at the center of the button.

The buttons must be free from both pre-travel and over-travel.

Pre-travel occurs when the button or the keycap is permitted to move before it contacts the switch.

Over-travel occurs when the button or keycap continues to compress the switch after it is completely depressed.

8.Environmental Standards:

8.1 Operating temperature and humidity

Temperature: 0º C ~ 40º C

Humidity: 0% ~ 85% RH

8.2 Storage temperature and humidity

Temperature: -30º C ~ 60º C

Humidity: 0% ~ 90% RH

9.Safety and Standards:

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