

**Caution :**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Compliance statement:**

1: This device is verified to comply with Part 15 of the FCC Rules. Operation 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.

2: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## HK-M250 + HK-K250 +HK-R250 Desktop Spec

### 1. Preface:

The functionality and performance requirements related to the Mouse、Keyboard and receiver are defined in this specification.

### 2. Project name :

Wireless Desktop

### 3. Project parameter:

3.1 Radio Frequency

27MHz, 1 Channel, 256 ID

3.2 Smart link: NA

3.3 Battery low indicator

### 4. Interface :

Receiver : USB Interface for Keyboard & Mouse

### 5. Physical Characteristics and Configuration:

5.1 ID : As below show :



5.2 Dimension

5.2.1 Mouse : L123mm \* W60 mm \* H38mm

5.2.2 Keyboard : L465mm\*W178mm\*H20mm

5.2.3 Receiver : L88mm\*W68mm\*H30mm

### 5.3 Key & Key define :

5.3.1 Mouse key : 5 keys + 1 Scroll wheel + 1 link button

5.3.1.1 Left key

5.3.1.2 Right key

5.3.1.3 Scroll key ( use mechanical Encoder)

5.3.1.4 Fourth key (Left side )

5.3.1.5 Fifth key (Right side)

5.3.1.6 Scroll wheel

5.3.1.7 1 link button

5.3.2 Keyboard key:

5.3.2.1 104key / 105key / 106key / 107key / 109key

5.3.2.2 Hotkey :19key

a. internet hotkey \* 8 :

Backward / Forward / Stop / Refresh / search / my favorite/home/e-mail

b. Multimedia\*11:

Pre-track / next track / Stop / Play&Pause / Mute / Volume up / Volume down

My computer / calculator / Sleep / CD player



5.3.2.3 1 link button : RED

5.3.3 Receiver: 1 link button and 1 Led

Led: for linking & operating indicator (Led is Blue or lens is blue)

5.3.4 Key defines:

MS Button	Left (1)	Right (2)	Wheel (3)	Wheel key (3)	Fourth key (4)	Fifth key (5)
Click	Select					
Double Click	Command	Context Menu	Scroll Up/Down		IE Backward	IE Forward
Others				Programmable	Programmable	Programmable

5.3.4.1.1 The fourth key: Default is IE Backward

5.3.4.2 The fifth key : Default is IE Forward

5.3.4.3 The fourth key & fifth key will be programmable if there is a driver.

5.4 Wheel : Black Rubber

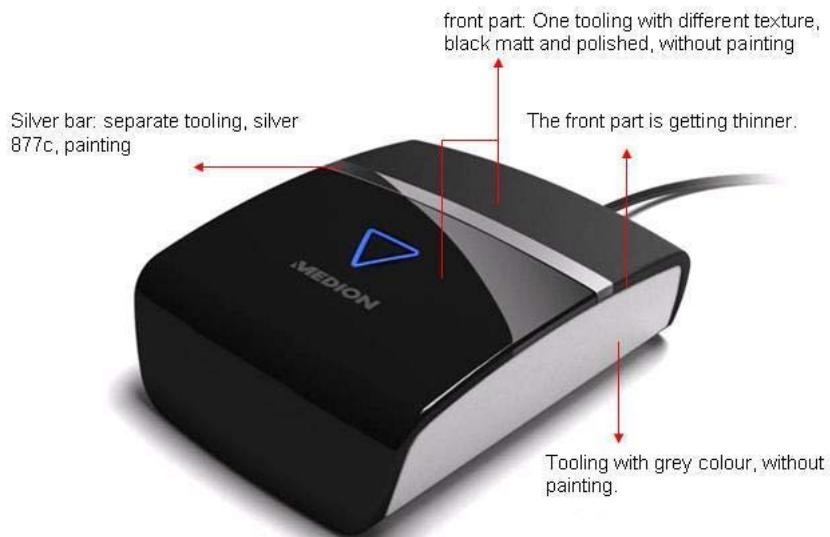
5.5 Material: All Body are ABS but up case / bottom case of Keyboard is HIPS and lens is PC.

5.6 Finish: Detail as following

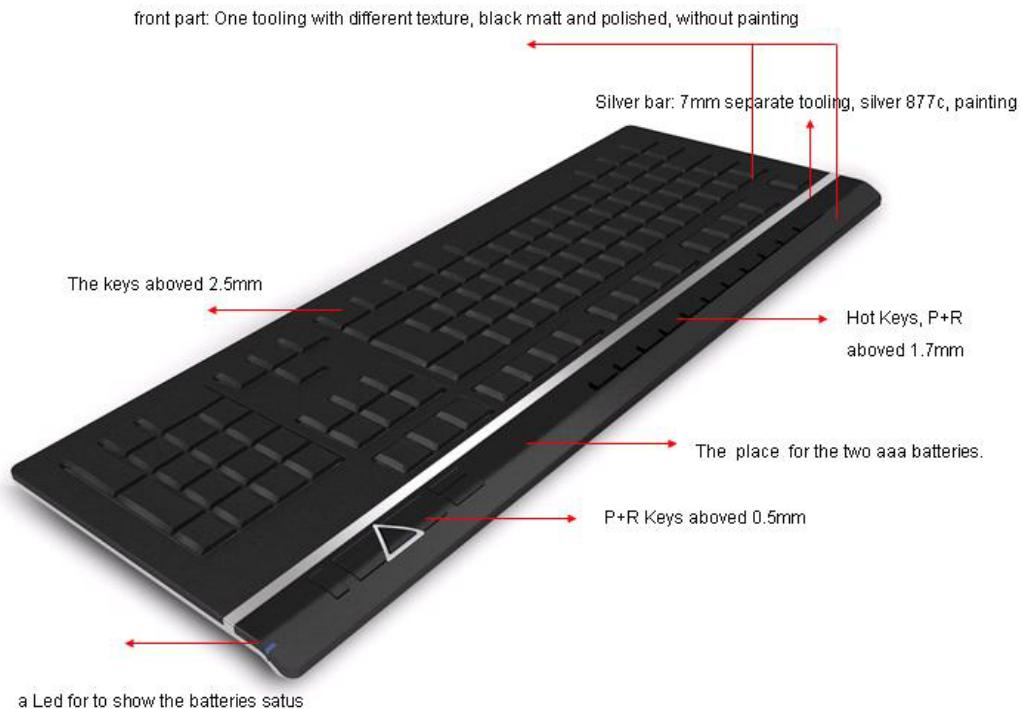
### 5.6.1 Mouse:



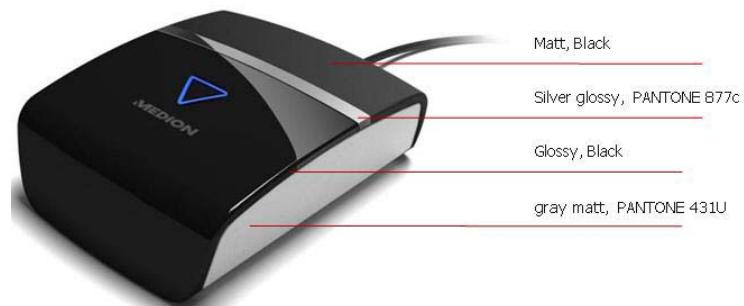
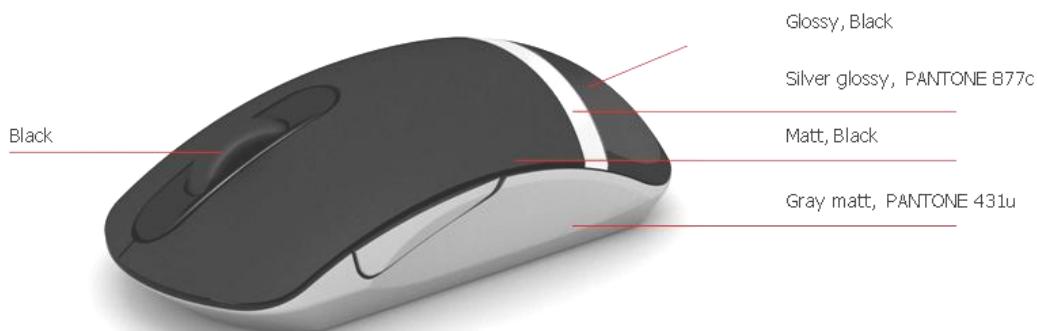
### 5.6.2 Receiver:



### 5.6.3 Keyboard:



### 5.7 Color: Defined as ID Drawing (See attachment as abover)





## 5.8 Mechanical performance

5.8.1 Operating force of mouse buttons:  $80 \pm 20\text{gf}$

5.8.2 Operating force of browser switches:  $180 \pm 25\text{gf}$

5.8.3 Operating torque of wheel scrolling:  $50 \pm 30\text{gf.cm}$

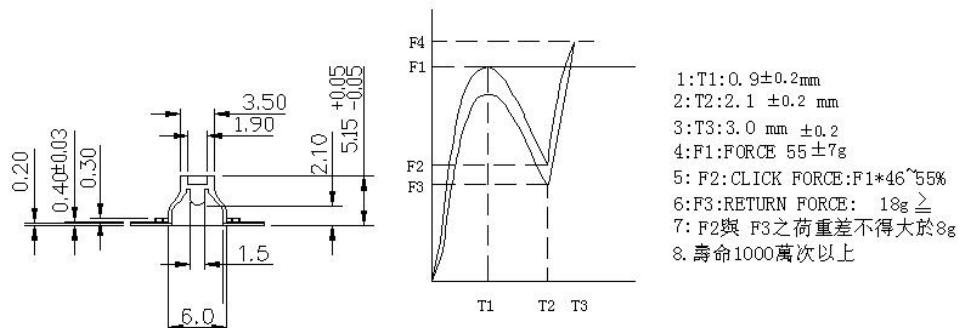
5.8.4 Operation force of moveable:  $40 \pm 10\text{gf}$

5.8.5 Weight: TBD

5.8.6 Keycap : Extra low profile keycap designed by Hank



## 5.8.7 Operation force of Rubber:



## 6 Electrical Specification:

### 6.1 Compatibility

The USB mode shall work with operating system such as Windows 95 / 98 / 2000 /ME/XP, as well as the most software applications.

### 6.2 MCU & Sensor & sensor Light

**The mouse sensor is A5030 (Avago) and the light is Red LED.** MCU is **SN8P2612 (Sonix)**

**The Keyboard MCU is HT82K68E83 (Holtek mask).**

**The Receiver MCU is SN8P2202 (OTP) & RF IC is S5018(sonix).**

### 6.3 Distance :

The operate distance at least 1 meter for mouse & 1.5 meter for keyboard.

### 6.3 Cable:

The length of cable is 13500 mm and color of the cable is Black . Port is USB

### 6.4 Resolution :The mouse should have a 1000 +/- 100 DPI Resolution.

### 6.5 Battery low indicator:

When the battery voltage is less then 2.3v +/-0.1v , the indicator on the mouse will light on while operate the mouse; when the battery voltage is less than 1.9+/-0.3v , the indicator will light on while typing.

### 6.6 Smart link: NA

## 7. 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.

### 7.1 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).

### 7.2 Button Switch Activation

The unit shall survive a minimum of 1,000,000 times (for all of the micro switches on mouse). Tested at 1.5 cycles per second.

### 7.3 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.

#### 7.4 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.

#### 7.5 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

#### 7.6 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.

#### 7.7 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.

#### 7.8 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.

#### 7.9 Vibration

Unit shall survive a vibration within a frequency range of oscillation: 5~55Hz with amplitude 0.38mm(p-p) for X, Y and Z axis, each 30min.

### **8. Reliability Performance:**

After having been subjected to any and all of the reliability tests outlined in section 5.0, 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 in 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.

## **9. Environmental Standards:**

### 7.1 Operating temperature and humidity

Temperature: 0° C ~ 40° C

Humidity: 0% ~ 85% RH

### 7.2 Storage temperature and humidity

Temperature: -30° C ~ 60° C

Humidity: 0% ~ 90% RH

## **10. 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.

- **Do not keep the product in hot, damp conditions. Protect from exposure to liquids, fire and strong impacts.**