

The A4tech R7 PowerSaver wireless mice come out.

There has been heated discussion about the duration and power saving issue of wireless mice recently. But which one is the king of wireless mouse with the longest duration eventually? The answer came out when we got the R7 Power Saver mouse from A4tech today.



The newly developed A4tech ultra low consumption wireless mouse has the name of R7 Power Saver, which has an average power consumption rate of 7 milliamperes. As it adopts the game-level high rate transmission technology, the mouse is as sensitive as a wired mouse and can be used for gaming with no difficulty. The mouse can continuously work for 138 hours with an AAA battery (capacity 1100MA). Suppose we use the mouse 2 hours a day, the battery life would be 69 days. Plus 4 phases sleeping intelligent power-saving design, the duration of the mouse with a battery can be largely prolonged. Why is it named R7? What is the mystery behind the Power Saver's super duration, game-level high rate transmission technology? What is the standard to judge the quality of wireless mice? Let's see detailed explanation below:



R7-20D designed for Notebook user



R7-70D designed for office user




Power Saver.

We know wireless mice have more advantages in portability than wired mice. Nowadays, a common disadvantage among wireless mice is that the battery needs to be changed or recharged frequently. The Power Saver series wireless mouse from A4tech is a new generation wireless mouse with innovative power saving technology cleansed of this disadvantage. The duration for continuous use of wireless mouse is determined by its power consumption in normal use. The average power consumption for a Power Saver series mouse is less than 7 mA, and R7 is a name taken from its power consumption rate. R stands for Radio Frequency (wireless) while 7 means 7mA - its power consumption rate in normal working status.

What does 7mA mean?

It means the power consumption of R7 series mouse (7mA) equals to one third of normal wireless mouse's power consumption (21mA or – 29mA). It also means 3 times of working duration of common wireless mouse with the same quantity of electricity. To better clarify this issue, we've made a comparison for power consumption with a few wireless mice taken from the market below:

Electric current test for wireless mice

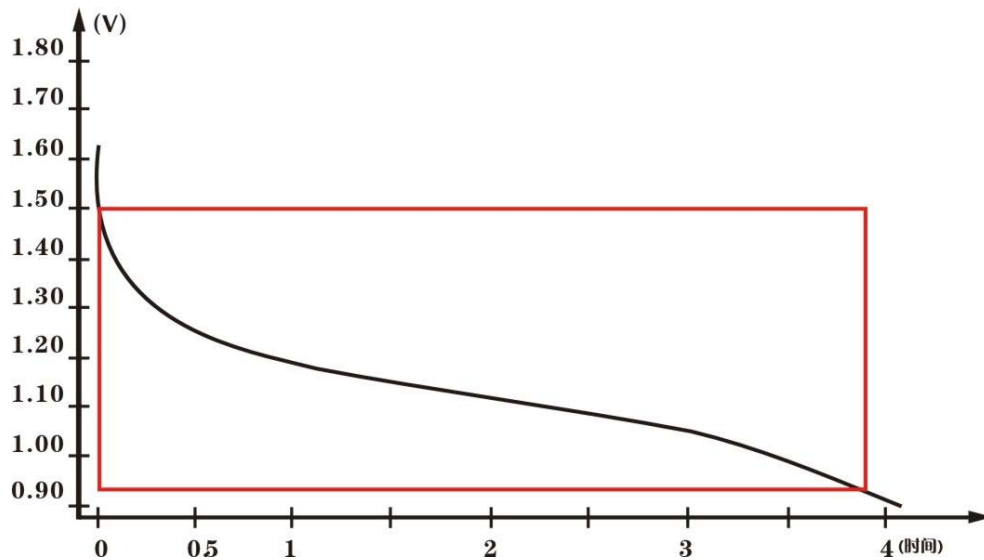
Electrical source for test: DC adjustable power supply (PS-202AD)			
Condition for test: 1: use A4 sized blank paper as mat 2: continuous move in lines at normal speed.			
Way to read current meter: The current meter automatically records the maximum current value and lock it every time.			
Calculating method		By average	
Models being tested: A4tech R7-70D Microsoft wireless mini mouse 4000 Logitech LX-5			
Test results:			
Product picture:			
Model:	A4tech R7-70D	Microsoft wireless mini mouse 4000	Logitech LX5

Battery type	AAA (11grams)		AA (22 grams)	AA (22 grams)
POWER	Working current	POWER	Working current (m A)	Working current (m A)
DC=3.3V	6.72	DC=1.6V	17.32	22.50
DC=3.2V	6.74	DC=1.5V	17.37	23.52
DC=3.1V	6.75	DC=1.4V	19.62	25.45
DC=3.0V	6.94	DC=1.3V	21.30	29.63
DC=2.9V	7.16	DC=1.2V	25.53	32.10
DC=2.8V	7.46	DC=1.1V	28.43	49.80
DC=2.7V	7.53	DC=1.0V	29.31	56.20

We can draw conclusion from the table above that the mouse with the A4tech ultra low power consumption technology consumes only 7mA under 3 Volt. According to formula: $T=Q/I$, when using AAA battery (capacity 1100mAh * 95% for virtual volume) the A4tech R7 mouse can be used continuously for 138 hours (assume average voltage is under 2.7V), if user use it 2 hours a day, the power duration is 69 days. Plus 4 phases power saving design, without movement for 5 seconds, the power consumption lowers to 0.8 MA, which largely prolongs the mouse's working duration before changing battery.

Meanwhile, when working with an AA battery (capacity 2600 MA), the Logitech and Microsoft mouse of the same type can be used respectively for 122 hours and 87 hours (assume the average voltage is 1.3 V). Remarkably the capacity of an AA battery (2600 MA) is 1 time more than that of an AAA battery (1100 MA). And the weight of an AA battery (22.6 grams) is also one time more that AAA battery's weight (11.6 grams). Relatively, the R7 A4tech mouse is not only more power-saving but also lighter.

One may discover if carefully, that the current value is taken under 2.7Volt and 1.3 Volt when calculating the battery working time instead of taking minimum or average current value. Because the current value is related to voltage that changes continuously, and under effective voltage of 1.0V-1.5V, the battery exists for the most time while being used. When under 1.0 Volt, the battery will be discharged swiftly. So the most long-lasting voltage is 2.7 V for 2 batteries and 1.3V for 1 battery. From the battery feature curves below, we may learn more about this feature.



Curve for battery duration and voltage.

What's the quality standard for wireless mouse?

The exclusive innovation of its 7 MA low consumption precision electronics design capacity is a key for the R7 power saver's low consumption and super long duration. How long a wireless mouse can work before changing battery is determined by its power consumption. To conclude, power consumption is the standard to judge the quality of a wireless mouse. Further more, the A4tech R7 has the following noticeable power saving methods and brilliances.

Four phases sleeping, intelligent power saving.

The intelligent design of R7 4 phases sleeping is capable of saving power in every millisecond.

Mouse status	Sleeping mode	Consumption (am)	Power saved
No movement for 0.2 sec.	Free mode	2.1 MA	2.9 MA
No movement for 5 sec.	Sleeping mode	0.8 MA	6.2MA
No movement for 70 sec.	Deep sleep	0.1MA	6.9MA
30 minutes no movement	Power off	0.01MA	6.99MA

Automatically power off. No more wasting.

If hasn't been moved for 30 minutes, the mouse will cut off power supply automatically to avoid waste of power. By pressing any key, you turn on the mouse.

Manual power off switch

When the switch button is pressed down for 4 seconds, the power is cut off. You may stop power consumption completely on a trip by easily press down the switch button.



Immediate awaken technology

R7 is of highly sensitive response and when it's awakened, there isn't any delay. On the contrary, you have to wait for a worrying long time after awakening some other mouse before you can use it.

Game-level high rate transmission

R7 has adopted a radio frequency of 125 Hz in transmission, and has the same sensitivity as wired mice and courses no delay in game. As we all know that the higher the transmitting frequency the more data sent to the computer in a certain time and the more precise. A common wired mouse has the transmitting frequency of 80-95 Hz. Low transmitting rate will cause low speed and unevenness. For example, it may cause pointed angles when we are drawing a circle. This is what we called stagnation. While using wireless mouse in game, such stagnation will cause fatal results. When use it in office, the working efficiency will be affected apparently. Why did some mice adopt low frequency? The answer is a lack of powerful R&D capability. As a result the high rate transmission has to be given up and the precision of the mouse is given up simultaneously.

Dual channel, 225 IDs, free of interference.

The R7 has two channels for transmission with 255 IDs, which effectively reduced radio frequency interference and ensured flexible movement. This also ensures no interference between several R7 mice used in the same office at the same time.

Small battery. Light weight.

The R7 mice only need AAA small batteries, which reduced the mouse weight and make it easy to move. In comparison with those who need AA batteries, R7 is very smart. The pictures below shows mouse R7-20D and R7-70D. Small batteries hide inside the mouse and cause little burden to the user.

Low-power warning.



When the power of the battery is lower than normal, the red LED light will twinkle for warning. This considerate design enables you to have enough time to prepare for power off.

Double click button

The A4tech acquaintance knows that all models with D suffix have adopted the patented technology of No Double Click that cleansed of the trouble of traditional double click. R7 power saver has maintained this feature.

Office Jump

The R7-70D remains the office Jump function that is a symbol of the A4tech high-end office mice. When press this button, a set of office command menu appears. For details of this function, please refer to the description of X-708F – high end A4tech office mouse.

In conclusion, the A4tech's wireless mouse Power Saver has reasonable price and a lot of brilliances. Whether to choose it or not depends on your need. I believe it worth recommending personally.