

With the hot sales of Apple's iPhone, many mobile terminal giants have joined, and smartphones have opened a new era in the mobile terminal market. If you don't see me, everyone around you will embrace me

Excited by a smartphone that can be tweeted, swiped, and touched, more and more people are beginning to accept the price of smartphones and become their supporters

Pang

Smartphones Reveal Their Killer Nature Again

As the best terminal for mobile internet, smartphones have quickly become a new favorite in the mobile phone market due to their ability to provide users with a great experience. Many smartphone applications

The emergence of has accelerated the expansion of its market.

According to the latest research report by iSuppli, the world's smartphone shipments continued to rise sharply in 2011 after a 56% surge in 2010, reaching 275 million units,

Another 60% increase, reaching 440 million units. It is expected that the average annual growth rate of world smartphone shipments from 2009 to 2014 will be as high as 37%, which is five times higher than the 7% growth rate of all smartphones

By then, it is expected that the number of smartphones will reach 845 million, accounting for 47% of all phone shipments, more than double the 19% in 2010.

Smartphones do consume a lot of electricity

When the functions of mobile phones began to shift from simple menus and text messages to multiple functions such as web browsing, photography, and gaming, battery life has always been one of the advantages of mobile phone manufacturers

Block heart disease. The author also found that many people who use smartphones around them face a common "worry": they need to charge their beloved phones every day!

So, the author is still struggling and anxious about whether to switch to a smart phone.

Yin Zhicheng, Design Verification Director of Konka Communication Technology Co., Ltd., provided a set of data showing that in the current mainstream mobile phone electricity consumption, web browsing, audio and video, and gaming

Three functions consume 45% of electricity.

That is to say, the power of mainstream mobile phones is mainly supplied to the display screen and RF network communication, so finding ways to reduce the power consumption of the display screen and RF module is

The only way to extend the working time of a mobile phone is to use a large capacity battery.

Energy saving design of mobile phones in ultra long standby mode

At the 7th Portable Product Design and Power Management Technology Seminar, Yin Zhicheng, Design Verification Director of Konka Communication Technology Co., Ltd., presented his presentation on "Energy Saving Devices for Mobile Phones in the Green Era

In the speech on "Strategy Research", the focus is on exploring the energy-saving design of mainstream mobile phones. For smartphone manufacturers, there are many valuable experiences to learn from.

Yin Zhicheng stated that the first step is to unify the understanding of the concept of ultra long standby. The time

of ultra long standby must be the actual time used by the user, so in order to achieve good usage

Under the premise of user experience, energy-saving design is meaningful.

The display screen, sound, RF circuit, and processor are the main working components that consume electricity in mobile phones. Therefore, establishing a mathematical model at the beginning of the phone design process requires thorough consideration

Consider the power consumption of these four aspects.

How to establish an energy-saving mathematical model? Yin Zhicheng believes that there are mainly five aspects.

Based on market research, analyze user usage habits and classify various users according to their usage habits; Focus on analyzing the usage habits of target users, establish statistical models, and import usage

Habits and usage time data; Establish the concept of daily electricity consumption mAh/day; Establish an energy-saving model, in which the power consumption data of the display, sound, RF, and processor parts will be displayed

Using habits as variables; Calculate the daily power consumption of each functional module and the impact ratio of each variable's power consumption through an energy-saving model.

Regarding the main components of mobile phone power consumption, such as display screens and RF circuits, Yin Zhicheng provides suggestions for the following positions:

1. Low-power electronics strategy for display and sound

In order to achieve low power consumption in display, the color gamut of the display screen should be as wide as possible, using high transmittance glass, paired with double voltage backlight driver and efficient backlight LED. Of course

Perhaps it will keep the cost of using mobile phones high.

{Fine adjustment of light induction IC}

For the realization of Low-power electronics of sound, it is nothing more than selecting the circuit of Class D audio power amplifier and reasonably controlling the volume of mobile phone in use.

2. RF Low-power electronics Strategy

In order to reduce the power consumption of RF circuits, it is necessary to choose high-efficiency RF power amplifiers, reasonably control the transmission power level parameters, and pay attention to the transmission and reception power in antenna design

At the same time, pay attention to matching with the RF circuit of the motherboard to maintain high antenna transmission efficiency.