Optimization of Microwave Resonator for Wireless Communication Based on Computer Technology

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Abstract. Wireless communication is a way of information transmission based on wireless network. It mainly includes microwave communication and satellite communication. There is no conductor between the receiving points of transmitting information. Microwave belongs to radio waves, its propagation distance is not far, but its transmission frequency and communication capacity is relatively high. Microwave resonators have been widely used and provide convenient conditions for wireless communication. In this paper, the status quo of wireless communication microwave resonator and some optimization schemes based on computer technology are described, and some obvious effects will be achieved after optimization based on computer technology are summarized.

Keywords: Computer Technology, Wireless Communications, Microwave Resonators

1. Introduction
With the development of society, wireless communication technology is more mature, the use of resonator frequency has increased. The use of resonators is mainly to generate resonant frequency, microwave resonators can achieve a higher level of this frequency. This kind of resonator generally has very good stability and good anti-interference, its frequency control in a certain range, can make its effect reach the highest value. No matter what kind of electronic products, as long as the frequency involved in the transmission and reception need to participate in the resonator. There are generally two types of resonators, which can be divided into direct plug type and patch type (as shown in Figure 1) [1]. The reason why microwave resonators are used in wireless communication is that the frequency of microwave can reach the standard of wireless communication, and the current microwave resonators still need to be further optimized.
2. The principle of microwave resonators and the current status of wireless communication microwave resonators

2.1. Working principle of microwave resonator
Its main working principle is: the magnetic field of microwave resonator is the standing wave distribution in the direction of the three coordinates, the electromagnetic energy can't transfer, so it oscillates back and forth on this, the distribution of electromagnetic fields on a transmission line is usually the longitudinal distribution of the electromagnetic field is along the vertical transmission, this compared with multiple coordinate distribution is somewhat inferior. Microwave resonators have the characteristics of energy storage and frequency selection, he is more widely used in microwave filters and oscillators.

2.2. Current status of microwave resonators
At present, microwave resonators are indispensable in wireless communication technology, and will be so in the future. Microwave resonator mainly uses electromagnetic wave to realize the communication with the site, providing the most basic remote communication conditions for the majority of users. The information transmitted through it is not directly delivered to the other user's mobile device, but first uploaded to the site through electromagnetic waves, and then the site sent to the user's mobile device through transmission, so as to form a unilateral information transmission. Wireless transmission has a very wide range of frequency bands, which are just used for wireless communication, and currently cannot communicate in ultraviolet or higher bands [2-3]. The most commonly used transmission media for wireless communication are: radio waves, microwave and infrared. Microwave frequency is higher, its wavelength is relatively short, microwave is also known as ultra-high frequency electromagnetic wave. The wireless transmission equipment we can see is generally made of metal, because the reflection of microwave is some metal things, like water and food will absorb microwave and do not reflect when they are warm.

Due to the characteristics of microwave, it will lose a lot and transmit a short distance in the air, but it has strong mobility. Besides the millimeter wave technology applied in 5G mobile communication, it is mostly in the metal waveguide and dielectric waveguide. Microwave is different from matter wave, the length of matter wave can be calculated (Formula 1):

$$\lambda = \frac{c^2}{\nu m_e^2} = \frac{h}{mv} = \frac{h}{p}$$

(1)
\( \lambda \) represents the wavelength of the object being solved; C is the speed of light; V is the velocity of the object; M is the mass of the object; H is Planck constant; P is momentum.

The current microwave resonator does guarantee the signal of the whole wireless communication, but I think that the microwave resonator of wireless communication needs to be further improved, and all levels of computer technology can only be used in this way. Below are some optimizations for this technique and some of the results it can achieve.

3. The optimization scheme based on computer technology and the results achieved

3.1. Classification and optimization of computer technology

Computer technology is divided into three categories: structure, technology and software. Computer science is the science and technology of computer, which mainly studies the design, manufacture and use of computers to obtain and process some information based on computer technology. There is a dynamic web page creation technique in the computer application class, and there is also a static web page creation. The working process of microwave resonator can be dynamically reflected through PHP technology, so that any problems in its work can be more intuitive, more quickly found and corrected [4]. The wide application of computer technology can make the whole thing or event have a certain structure, which can make it more systematic, accurate and visualized. So, the resonator based on computer technology is bound to make the system accurate and efficient a working component system.

Computer technology in this article can be applied to some of the more independent technology: PHP technology, LAN technology and system classification management technology. In PHP, where problems are found and corrected, the terminal page changes are obvious and graphic.

PHP technology can incorporate the working principle of microwave resonators into the design of DW code programs, and when deviations from the set code are found in the actual operation, it can be immediately notified. Its optimization is mainly a survey and supervision of the process, in the process of work, reduce a certain deviation is also a great improvement of work efficiency. It can make the computer system obtain good problem solving efficiency. Advances in electronic devices lay a good foundation in computer technology. The design of the program code has a control effect on the optimization of the microwave resonator. It can strictly control the amount and rate of information transmission of the microwave resonator.

The application of LAN technology in this area is mainly to set and control the effective range of microwave resonators. LAN itself can control is a specific scope of the network, it is different from the wan, the scope of control limits its role, in it can not control the scope can not use this network segment under any network [5]. The range it can set on the microwave resonator is also specific, but it is required to cover the entire wireless communication. Therefore, multiple LAN configurations are required to enable it to complete its complete transmission operation. If the area controlled by the independent microwave resonator of each LAN configuration can operate normally and seamlessly, it proves that its coverage is complete, that is to say, the optimized LAN configuration is successfully applied. Its main advantage is that if there is a disconnect in one area, only one part needs to be repaired, and some control areas that are not connected with it can still work normally. Unlike when there is no division of the area, if one thing goes wrong, the rest will not work properly, and in serious cases, the wireless communication system will crash. This is the best defense and optimization.

System classification management is the main work classification of microwave resonators, which reduces the workload of each group and increases its work efficiency. System classification in microwave resonator can be combined with LAN and PHP technology, the three into one, play a better role [6]. The division can be determined according to the size of the controlled area or the average value of information transmission. The best method is to divide a contiguous area into the same organization for better management of statistics. The microwave resonator must have its own system when it is working. The classification management of this system is mainly to optimize its classification, which can discard the classification groups with low efficiency and high energy consumption before. This classification will be based on the basic idea of saving energy and
improving efficiency, to improve the efficiency of microwave resonators, to provide a good transmission environment for wireless communication.

3.2. The results achieved by the above optimization scheme
(1) For the microwave resonator in the working process to join the production of dynamic web pages to make its dynamic presentation, it will look more interesting image. Static HTML is already formed web pages, if the need to change the content of the page must change the source code, and dynamic web pages on the contrary, although the page code does not change, but the display of the content can be changed over time, the environment or the result of other operations in the database [7-8]. This dynamic change can make it more clear in the process of running track. The large amount of data from microwave resonators presented with the help of dynamic web pages gives a different feeling. Of course, you can also set up a database to sort and package the data so that it is easier to analyze and understand.

(2) Embedded LAN technology classifies frequencies higher than 300MHz and their corresponding frequencies according to different circumstances. Microwave resonator has the characteristics of storing energy and selecting frequency, according to the division of local area network of different frequencies, configure the corresponding network Settings at different frequencies, and each link can be splice, and a section of the affected other unrelated areas are not affected, its operation will not be a wide range of deviation, This also achieved the so-called more energy and energy saving.

(3) Microwave resonators have infinite resonance frequencies different from THE LC oscillation circuit, and their accuracy and signal are relatively good. The classification of computer technology can centralize these signal systems, so that their accuracy is high and the signal is getting better and better. At present, program design automation also solves time-consuming and laborious, error-prone problems. In this way, the microwave resonator also plays a better role. The faster the social development, the electronic information age is inseparable from computer technology, wireless communication has become an indispensable part of people, the widespread use of computer technology will also become the future development trend can be coordinated with the social development [9-10]. The relative advantage of microwave resonator technology and computer technology combined to add power. The addition of computer intelligence technology also lightens People's Daily workload, enables them to concentrate on other aspects, and promotes the dissemination and exchange of knowledge.

The advantages of the above points can be summarized in the following Figure 2.

![Figure 2. The advantage](image)

4. Conclusion
In short, in view of the current wireless communication microwave resonators still have many shortcomings and problems, this paper through the classification and generalization of computer system technology and optimization design of microwave resonators in wireless communication, study how to make wireless communication microwave resonators to achieve better and more efficient results. Visualization of the work process makes it easier to find problems and solve them quickly. After the addition of computer technology, the classification is clear, so that the work efficiency of wireless communication microwave resonator is improved, the energy consumption is also reduced,
wireless communication technology has been improved. Therefore, the optimization of wireless communication microwave resonator based on computer technology will also achieve the effect of visualization of the operation process more understandable, improve the work efficiency, reduce energy consumption and adapt to the social development.

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