The Application and Improvement of Smart Antenna for WLAN

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ABSTRACT

It will be a trend to have the network whenever and wherever possible. However, the more access point will cause more co-channel interference. To combine smart antenna with repeater can reduce the quantity of access point effectively, on one hand reduce the cost, and on the other hand improve communication quality. The conventional WLAN AP used the dipole antenna will reduce transfer rate by environment influence easily. And the transmitted distance is limited due to the path loss. This thesis is focused on designing the antenna suitable for the WLAN AP to improve communication quality. The smart antenna is based on angular diversity technology and collocating switch to provide multi-beam patterns with narrow beam-width, and replace the conventional space diversity in WLAN AP. According to the measurement results, AP with the smart antenna has better performance than conventional one. The distance that conventional WLAN AP transmits is limited. As room through or floor change, the intensity of signal decays seriously. To put the repeater into the transmitted path can strengthen the intensity of AP signal; improve the quality of the network. Repeater includes two-way high gain and high isolation antenna and ring hybrid and amplifier circuit. It can control the direction of radiation effectively, improves the antenna efficiency.

Keywords : Smart antenna ; Repeater

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