The Study of Improvement for WLAN Transmition Property by Using Smart Antenna

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ABSTRACT

Wireless local area networks (WLAN) are designed to support mobile computing in small areas. High data rate WLANs suffer from intersymbol interference (ISI) due to selective fading arising form multipath propagation. Indoor communication environment, data throughput performance will be restricted to multi-path fading in WLAN. As part of wireless system development, the industry is countially looking at ways to reduce multipath fading and enhance radio efficiency. One may is use smart antenna, so we use switched beams antenna to substitute for omni-directional antenna. The main purpose of switched beam antenna is using the multiple beam patterns with narrower beamwidth, it is a kind of angular diversity antenna. We proposed an angular diversity antenna integrated with indoor WLAN AP (Access Point). The angular diversity antenna use two 90 ° corner reflector controlled by a switched circuit. Angular diversity antenna is an air radiator which be designed with 180 ° radiation pattern, because WLAN AP often put near the wall or corner in order to easy connect LAN and AC power. By this way it can reduce radiation to the wall and increase antenna gain.

Keywords : WLAN ; IEEE 802.11 ; Angular Diversity

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