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(54) Title: DYNAMIC CONTROL OF TRANSMITTING POWER AT A TRANSMITTER AND ATTENUATION AT A RECEIVER

(57) Abstract

A communications system includes a receiver and a transmitter for transmitting a communications signal to the receiver. The transmitter adjusts its transmission power level in response to receiver power control signals transmitted by the receiver. The receiver includes an attenuator for attenuating the received communications signal, and measurement means for measuring the signal strength of the attenuated signal. The measured signal strength is coupled to attenuator control means and to transmission power control means. The attenuator control means and the transmission control means adjust, respectively, receiver attenuation and transmitter power level so as to optimize system performance. This may include keeping the attenuated signal within the dynamic range of the receiver. This may also include eliminating disturbance signals by adjusting receiver attenuation to produce an effective dynamic range for receiving only signals having a signal strength level that is higher than the disturbance signal strength level, while at the same time increasing the transmission power level to keep it within the effective dynamic range of the receiver. The disturbance signal may be detected as an increased bit error rate of the received communication signal. The apparatus and method may also be applied to systems in which a plurality of receivers are coupled to a common antenna through a receiver multicoupler.

