

Design a Decoupled Receiver with One Dual - Polarized Antenna to Cancel CCI for GSM Network

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Abstract— The capacity of the popular GSM network is limited by co-channel interference (CCI) rather than noise. Nowadays, some solutions such as a receiver with multiple antennas (MIMO) or a receiver with single antenna interference cancellation (SAIC) have been applied to cancel the CCI as well as to improve the network capacity. According to this paper, a novel receiver system with only one dual-polarized antenna is introduced. The proposed system has some dominant characteristics than above systems. Actually, it has lower cost and volume than a MIMO system, whereas its performance is better than that of a SAIC system due to the additional polarization diversity.

Keyword— CCI, MIMO, SAIC, one-dual polarized antenna system, GSM



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