Abstracts

A novel planar array smart antenna system with hybrid analog-digital beamforming

Seong-Sik Jeon, Yuanxun Wang, Yongxi Qian and T. Itoh. "A novel planar array smart antenna system with hybrid analog-digital beamforming." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 121-124 vol.1.

In this paper, a novel design of a smart antenna system based on hybrid analog-digital beamforming is proposed. The goal of the design is to construct smart antenna beamforming systems with high data rate throughput. The speed bottleneck in DSP I/O congestion is relieved using analog beamforming at the IF frequency, while the advanced signal processing capability of the DSP chip is retained. The data throughput of 20 Mbps for BPSK is reported for an 8-element adaptive array. DOA estimation and the beamforming result based on this new beamforming concept is demonstrated.

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