Abstracts

High-Dynamic-Range Airborne Tracking and Fire Control Radar Subsystems

A.M. Madni, P.T. McDonald, R.K. Hansen and L.A. Wan. "High-Dynamic-Range Airborne Tracking and Fire Control Radar Subsystems." 1989 Transactions on Microwave Theory and Techniques 37.12 (Dec. 1989 [T-MTT] (1989 Symposium Issue)): 1942-1948.

Two high-dynamic-range receiver subsystems for use in airborne radar fire control and tracking applications are described. The X-band dual-channel monopulse tracking receiver operates at 9.36±0.290 GHz with a 6 dB NF and a linear instantaneous dynamic range of 42 dB. A total of 80 dB of RF and IF gain control is programmable with less than ± 15° phase and ± 1 dB amplitude tracking errors. The Doppler radar receiver operating at 9.3±0.15 GHz has a 4.6 dB NF with >= 80 dB of instantaneous dynamic range. An 18 dB sensitivity time control (STC) circuit and a 60 dB dump attenuator allow close-in target reception.

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