

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Fixed and Broadcast Communications (6)

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DESIGN OF HIGH DATA RATE PLL FM TELEMETRY TRANSMITTER

Abstract

The frequency modulation (FM) technology is one of the key technologies in telemetry communication. Based on the basic principle of phase-locked loop (PLL) FM, this paper puts focus on the design of a high data rate PLL FM telemetry transmitter, which realizes single-point injection FM of PCM data by utilizing a step adjustable carrier frequency in the S-band. The transmitter is very small and can accept input PCM data rates up to 10Mb/s. Theoretical analysis and experimental results show that the telemetry transmitter using the single-point injection method not only has wideband FM characteristics, but also is able to meet the high-speed data transmission requirements.