Application Brief
Power Amplifier Protection (PAP) in AFE8190

TEXAS INSTRUMENTS

Benjamin Uhing

Abstract

This application brief describes the Power Amplifier Protection (PAP) feature of the AFE8190 RF Sampling Transceiver, which can help proactively protect power amplifiers in wireless infrastructure applications including mMIMO and Macro cells. The PAP functionality provides real-time monitoring of digital IQ data streams to detect potentially harmful conditions such as excessive average power, peak power, or corrupted samples. When such conditions are detected, the PAP block can automatically attenuate the AFE8190's DAC output before the problematic signals are transmitted, potentially damaging the external power amplifier. The application note details the architecture of the PAP system, including its configurable error detection mechanisms, Finite State Machine (FSM) implementation, and gain control block. Readers can learn how to configure and implement this feature, which offers a proactive approach to PA protection through continuous monitoring and rapid response.

For the full access to the application note, see *Protect Your Power Amplifiers With Real-Time PAP Functionality in AFE8190 RF Sampling Transceiver* (SBAA640).

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