## C.5 YOUR FINGER ON THE PULSE OF MICROWAVE TRANSISTORS

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Modern microwave FETs and short-channel MOSFETs are rate dependent in that their characteristics vary with bias and frequency. Without pulse testing, characterising these devices is like finding the end of a rainbow. Pulsing works by establishing a bias during long periods between pulses. Rate dependency of the device is observed during each pulse.

The Arbitrary Pulsed Semiconductor Parameter Analyser represents the state-of-the-art in pulse testing. It provides arbitrary pulse trajectories with full control over all aspects of pulse timing, utilises an unique floating current and voltage sampling system that ensures accuracy in the fine detail, and features the ability to measure and tag data in the time domain.

Rate dependence raises the issue of variations over a range of signal frequencies. How does this variation affect signal integrity? Is there an influence on distortion parameters, spectral regrowth, IP3, ACPR? Pulse testing can help answer these questions.