Aim: Provide simple, low power, and effective solutions for the linearization of RF transmitters and power amplifiers.

Low-Complexity DPD with Temperature Feedback

DPD and Hardware Architecture
- The DPD is based on a conventional memory-less polynomial correction with the thermal memory removed successively.

PA Pre-Characterization & Methodology
- A high-PAPR signal is decomposed in a train of amplitude-modulated time-shifted Gaussian pulses.

Low-Complexity DPD with Temperature Feedback

• The DPD is based on a conventional memory-less polynomial correction with the thermal memory removed successively.

• PA with current sensing and thermal network:

DPD Operation in the Time Domain

The DPD architecture dynamically adapts the PA input to maintain a fixed linear gain $G_{\text{lin}}$.

Transistor temperature $\theta_j(t)$ scales the input signal.

$$G_{\text{dpd}}(|x|, \theta_j) \approx G_{\text{dpd}}(|x|, \theta_j^*) + g_{\text{dpd}}(|x|)(\theta_j - \theta_j^*)$$

DPD Power Consumption
- DPD mapping on FPGA
- PA + DPD linearity charact.