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ABSTRACT: Classic linearization of an RF Power Amplifier (PA) is based on measuring its response to a representative test signal in order to extract pre-distortion parameters. Characterizing an RF PA under 3GPP LTE RF signals requires high speed data acquisition instruments and customized algorithms to estimate its response. In this work, a PA linearization method using a generic probing signal to extract pre-distortion parameters is proposed. A 12W GaN HEMT inverse Class-F structure designed to operate at 900MHz is tested to demonstrate the proof of concept.

\[ V_{IN} = I_{IN} + jQ_{IN} \]

\[ V_{OUT} = I_{OUT} + jQ_{OUT} \]

\[ \text{Complex Gain} = \frac{I_{IN} + jQ_{IN}}{I_{OUT} + jQ_{OUT}} \]

CONCLUSION: A Generic PA linearization method using a generic probing signal to extract pre-distortion parameters is proposed. Due to the use of a relatively slowly varying envelope, the extraction of the pre-distortion parameters is:
- Less sensitive to coarse delay estimation during AM-AM and AM-PM measurements.
- Valid in the presence of various LTE signals which relax the requirements on base band resources.