

Nujira files 150th Envelope Tracking patent

ECN Europe

[Nujira](#) [1] has filed its 150th patent relating to Envelope Tracking (ET). The milestone comes just 12 months after reaching the 100 patent landmark in April 2011.

Nujira's patents cover not only the core technical breakthroughs that underpin Nujira's high bandwidth, high efficiency Coolteq ET modulator ICs, but also wider system elements. These include system architectures, timing alignment, linearisation with or without Digital Pre Distortion (DPD), PA performance enhancement, system optimisation, test & measurement, and production-line calibration techniques.

"Nujira was the first company to successfully commercialise ET products and we have focused exclusively on this technology for the last 10 years," said Tim Hayes, CEO of Nujira. "We've often been the first in the industry to encounter the real world technology challenges of ET, and our world-class engineering team continues to generate innovative solutions to overcome these issues. We protect many of our innovations through patents, which are set to become increasingly important as ET rolls out into 4G smartphones."

The higher data rates of 4G networks come at the expense of reduced energy efficiency in the RF power amplifier (PA), causing the PA to dominate the power consumption in 4G smartphones. As 4G networks roll out, users are increasingly dissatisfied with handset battery life, which is now measured in hours rather than days. ET is a dynamic power supply technique which modulates the power supply to the RF PA synchronously to the amplitude of the transmitted signal, delivering increased output power and improved RF performance, while cutting wasted energy in half and reducing heat dissipation.

The improved RF performance delivered by ET also helps network operators. A 2012 study by Nujira showed that LTE network performance is currently limited by handset transmit performance – reducing network coverage by as much as 32%, requiring operators to install 45% more base station sites. ET overcomes the RF limitations that are reducing coverage, delivering significant economic benefits to operators and improved network performance for users.

The last 12 months has seen ET technology penetrate further into the handset ecosystem, with 12 LTE chipset vendors integrating ET support into their chipsets, MIPI establishing a new Working Group to standardise inter-chip interfaces, and the release of updated specifications from the OpenET Alliance.

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Links:

[1] <http://www.nujira.com>