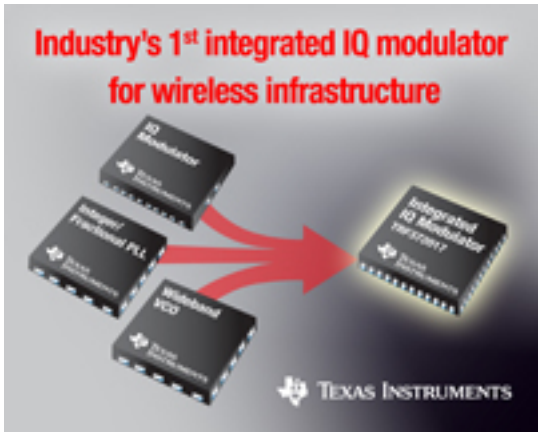
300- to 4800-MHz IQ Modulator Integrates Wideband LO Synthesizer, Reducing Cost while Simplifying Design



Texas Instruments Inc. introduces the industry's first integrated IQ modulator in full production for the wireless infrastructure market. The high-performance TRF372017 integrates a direct up-conversion IQ modulator with a phase-locked loop (PLL) and wideband voltage crystal oscillator (VCO) to simplify local oscillator (LO) design and reduce board space.

The TRF372017 provides an ultra-wide continuous tuning range - 300 to 4800 MHz - enabling customers to save time and reduce costs by eliminating the need for an external LO while qualifying and stocking a single IQ modulator for all 3GPP and 3GPP2 standards, as well as licensed WiMAX.

Key features and benefits include:

* Achieves an output third-order intercept (OIP3) of 26 dBm, delivering high linearity to meet the spectral mask standards for wireless infrastructure applications, such as wireless base stations, wireless local loop, point-to-point microwave and software-defined radio.

* Provides a low noise floor of -160 dBm/Hz, enabling a high transmit signal-to-noise ratio (SNR) and improved error vector magnitude across an ultra-wide continuous tuning range. This includes GSM, W-CDMA, CDMA2000, LTE, TD-SCDMA and WiMAX frequency bands.

* Reduces bill-of-materials cost by integrating the LO and providing an LO synthesizer output with independent frequency dividers to drive additional transmit or receive signal chains.

* Simplifies design and allows for smaller end equipment by integrating a baseband bias voltage generator and DC offset adjustment digital-to-analog converter (DAC). This high level of integration enables a compact, highly-linear wideband transmitter architecture with a passive interface to the communications

DAC, such as TI's DAC3283, the industry's smallest dual 16-bit, 800 MSPS DAC.

For more information and to order samples of the TRF372017 integrated IQ modulator, visit

www.ti.com/trf372017-pr

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