

# Chipset replaces up to 14 discrete devices

PMC has announced the industry's lowest power and most integrated radio transceiver chipset for macro basestation designs. PMC's new UniTRX chipset replaces up to 14 discrete devices, and reduces both board space and power by more than 50 percent for equivalent multi-standard basestation radio designs. It addresses multi-standard macro basestation performance requirements and simplifies the design of dense MIMO (multiple input, multiple output) radio units, such as active antenna systems (see Figs 1-2).

The UniTRX chipset includes three integrated monolithic CMOS devices:

- UniTX is a dual-transmitter RFIC for multi-standard, wideband radio designs. It supports the JESD204B interface, includes high-performance data converters and small-signal RF functions, such as analog quadrature modulators and local oscillators. The device also integrates feedback sampling channels to support digital pre-distortion (DPD) and an embedded processor for control and calibration.
- UniRX is a dual-receiver RFIC for multi-standard, wideband radio designs. It supports the JESD204B interface, includes high-precision analog-to-digital converters, and small-signal RF functions, such as mixers and local oscillators. An embedded processor is included for control and calibration.
- SyntheCLK is a low-phase-noise clock synthesizer with an integrated jitter attenuator. It integrates high-performance PLLs and VCO to condition and regenerate precision system clocks, and configurable low-noise outputs to distribute the clocks throughout the radio module.

The UniTRX chipset is designed to support wideband modules operating in the 400MHz to 4GHz frequency range. It addresses the performance requirements of macro basestation transceivers that feature multiple standards, including MC-GSM, cdma2000, WCDMA and LTE. High integration and low power make the chipset suitable for single-sector radio module designs and scalable for MIMO applications, such as active antenna systems. In addition to IF radio architectures, the UniTX also supports Zero-IF designs.

From a design perspective, consolidation of multiple components reduces inventory, improves system reliability, and reduces the thermal design challenges associated with radio units. The ability to operate over a wide range of frequencies and multi-standard support allow designers to build a platform that is suited to a range of applications, reducing development cost and time.

PMC

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