First European-Flow UltraCMOS™ RF ICs Deliver -216 dBc/Hz/Hz with Ultra-Low Power

Peregrine Semiconductor Corporation has released two new devices in its Phase-Locked Loop (PLL) Frequency Synthesizer family. These UltraCMOS™ RFIC devices fulfill the need for low-power, ultra-low phase noise, multiple-way programmable PLL solutions for capability of the military, broadband cable infrastructure, and wireless infrastructure markets. The PE33361 Integer-N PLL and the PE33631 Delta-Sigma Modulated (DSM) Fractional-N PLL are the first devices to be completely developed through Peregrine's recently announced European design and manufacturing flow. The PLLs operate over a wide frequency range 50 MHz to 3.5 GHz, providing a high-performance RF solution for demanding applications such as cellular base stations, CATV set-top boxes, test and measurement equipment, WiMax-based communications systems and point-to-point radios where system scalablility is key to improving designs. The new PLL devices deliver market-leading RF performance and frequency synthesis up to 3.5 GHz with -216 dBc/Hz phase noise (normalized), and ultra-low power consumption of 40 mA (PE33631) and 45 mA (PE33361) at 3.3V. Both PLL devices offer flexible programming options: the PE33361 PLL is programmable through serial, parallel and direct mode access; the PE33631 PLL is programmable through serial and direct mode access. Electro-Static Discharge (ESD) tolerance is 1000 V HBM. The devices feature a ÷10/11 dual modulus prescaler which enables high divide ratios in applications requiring low phase-detector comparison frequencies. An internal phase-frequency detector generates up and down frequency control signals, and provides a phase comparator and phase counter, the values of which are programmable. The PE33631 adds a delta-sigma modulator which maintains fine frequency resolution while eliminating fractional spurs in the output. As with all UltraCMOS-based RF ICs, the new PLLs offer a more environmentally friendly solution for next generation RF designs.

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