

Dual PLL Synthesizers

Analog Devices, Inc. announced the release of its new family of dual PLL (phase locked loop) synthesizers that offer the highest performance and lowest footprint available for wireless applications. PLL synthesizers form the core of local oscillators which are at the heart of any wireless system including mobile handsets, PDAs, cellular basestations, wireless LAN/LMDS (Local Area network/Local Multipoint Distribution System), SDH/SONET (Synchronous Digital Hierarchy/Synchronous Optical Network), clock generation circuits, cable television systems and communication test equipment.

The ADF421x family of dual RF/IF synthesizers enables state-of-the-art local oscillators for the upconversion and downconversion of RF signals in frequency and timing circuits. When combined with an external VCO (Voltage Controlled Oscillator) and loop filter, the ADF421x family of ICs form a complete phase locked loop. The dual PLL synthesizer consists of a low noise digital phase frequency detector (PFD), a precision charge pump, a programmable reference divider, programmable A and B counters and a dual modulus prescaler (P/P 1). The 14-bit reference counter (R counter) allows a wide range of reference input frequencies at the PFD input. Control of all on-chip registers is done via a simple 3-wire interface.

Adding to ADI's portfolio of single integer-N PLL synthesizers, the ADF421x series ICs were designed by an ADI RF design team in Limerick, Ireland and are manufactured in a high-performance advanced BiCMOS process. The ADF421x family consists of the new ADF4210(550 MHz/1.2 GHz), ADF4211(550 MHz/2.0 GHz), ADF4212(900 MHz/2.7 GHz) and ADF4213(900 MHz/3.0 GHz).

ADI's ADF421x synthesizers feature many benefits such as the low Phase Noise Dual RF/IF Integer-N PLL currently available with performance exceeding 92dBc/Hz at 900 MHz, 200 kHz channel spacing, charge pump voltage (V_p) operating up to 6V while the synthesizer operates at 3V providing for a better range of VCO products, 2.7V to 5.5V single power supply with operation up to 3 GHz, availability of TSSOP and chip scale packaging, programmable dual-modulus prescaler RF and IF, programmable charge pump currents and programmable dead zone 9anti-backlash pulse width). The ADF421x synthesizers are available now.

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