Industry's Highest Performing 13 GHz PLL Synthesizer

Analog Devices, Inc. (ADI) today announced the industry's highest performance 13 GHz PLL synthesizer. The ADF4159 achieves breakthrough phase detector operating frequency of 110 MHz and simultaneously consumes less than 100 mW of power, which is 5 times less than competitive solutions. In addition, the ADF4159 contains a 25-bit fixed modulus as well as on-chip functionality to generate highly linear ramp profiles, making it an ideal solution for Frequency Modulated Continuous Wave (FMCW) radar applications, including automotive radar systems, microwave Point-to-Point (PtP) systems, communications instrumentation and test equipment.

• Download the ADF4159 datasheet: http://www.analog.com/adf4159 [1]

• Download copy of ADIsimPLL design tool: www.analog.com/adisimpll [2]

•View ADI's broad portfolio of RF ICs: http://www.analog.com/rf [3]

• Get support for DDS design on EngineerZone™, ADI's online technical support community: http://ez.analog.com/community/rf [4]

"Designers of FMCW radar systems, microwave Point-to-Point communications and test equipment require high frequency solutions that are capable of operating in very high phase detector frequencies without any sacrifice in power consumption," said Peter Real, vice president, Linear and RF Group, Analog Devices. "As the latest member of ADI's leading family of PLL synthesizers, the ADF4159 represents an ideal solution for these applications by delivering best-in-class phase-detector

frequency of operation and power consumption."

Featured in Analog Devices Booth #1725, the ADF4159 Fractional-N PLL Synthesizer consists of a low-noise digital phase frequency detector (PFD), precision charge pump and a programmable reference divider. It can be used to implement frequency shift keying (FSK) and phase shift keying (PSK) modulation. There are also a number of frequency sweep modes available, which generate various waveforms in the frequency domain, such as sawtooth and triangular waveforms. The ADF4159 features cycle slip reduction circuitry, which leads to faster lock times, without the need for modification to the loop filter. It is also supported by Analog Devices' popular ADIsimPLL™ design tool, which is a free comprehensive PLL synthesizer design and simulation tool.

ADF4159 PLL Synthesizer Key Features:

• RF bandwidth to 13 GHz

• Phase detector operates up to 110 MHz in fractional-N mode

• High and low speed FMCW ramps generation

• 25-bit modulus allows sub-hertz frequency resolution

• Frequency and phase modulation capability

• Phase noise Figure of Merit -222dBc/Hz

The ADF4159 PLL synthesizer is well-suited for use with a number of ADI devices including the ADF5001 RF prescaler [5], ADP150 low dropout linear regulator [6] and the OP184 operational amplifier [7].

RF IC Portfolio Covers Entire RF Signal Chain

Using a unique combination of design skills, systems understanding and process technologies, Analog Devices RF ICs and world-leading data converters cover the entire RF signal chain and include industry-leading high-performance discrete RF function blocks as well as highly-integrated multi-functional single-chip RF solutions. These products are also supported by a wide range of free design tools, evaluation boards and other design resources to ease the development of RF systems. For more information, visit: http://www.analog.com/rf [3].

www.analog.com [8]

Posted by Sara Cohen, Editorial Intern

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