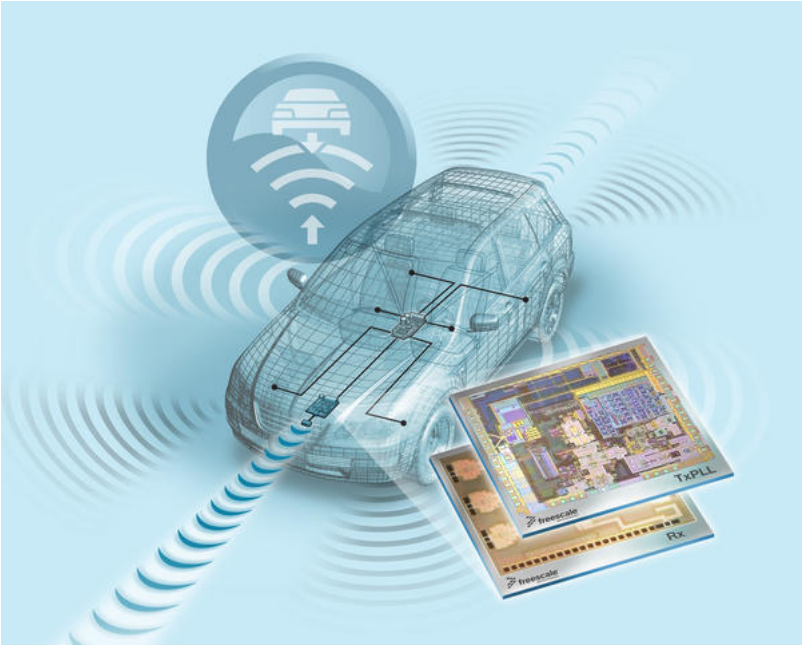
Automotive radar transmitter designed for active safety applications



Freescale Semiconductor introduced the new Xtrinsic PRDTX11101 automotive radar transmitter for active safety applications, such as adaptive cruise control. The industry's first 77 GHz silicon germanium (SiGe) BiCMOS transmitter features an integrated voltage-controlled oscillator (VCO) and power amplifier for greater control, reduced system design complexity and lower system costs.
Freescale silicon and software are accelerating the availability of ADAS for mainstream vehicles. Featuring scalability, low power consumption and high levels of integration, Freescale offers the industry's most complete selection of microcontrollers, sensors and analog devices for ADAS. Using Freescale technology, auto equipment manufacturers are able to simplify the highly complex development process and reduce time to market for front, rear and surround cameras, as well as radar for adaptive cruise control.

Adaptive cruise control is enabled by radar, which allows continuous monitoring of the vehicle's field of view. Freescale's transmitter solution supports radar sensing up to a 200-meter range and enables the determination of the distance and closing rate between the vehicle and other objects, including cars, stationary objects or pedestrians. If the radar system detects an impending collision, active braking could be applied to prevent an accident if the driver doesn't respond.

The new radar transmitter is manufactured using 0.18 µm SiGe BiCMOS technology, which enables integration of the digital control functions in CMOS with millimeter wave frequency capabilities. The integrated VCO combined with power amplifier (PA) stages reduces system complexity and enables a smaller customer circuit board size. The transmitter also features low phase noise, coupled with low power consumption and a wide tuning range, improving the fidelity of the signal and

enabling the device to be tuned to a range optimized for specific conditions or applications.

About Freescale Semiconductor
www.freescale.com [1]
(512) 895-2000

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