Integrated circuit targets cellular, analog applications

Lansdale Semiconductor, Inc. president, R. Dale Lillard, announced recently the availability of the MC13150 a narrowband FM Coiless Detector intermediate frequency (IF) subsystem targeted at cellular and other analog applications. This wireless integrated circuit (IC) was originally designed and built by Freescale Semiconductor, Inc.

Lansdale now has single-source rights to both globally market and continue to manufacture Freescale's MC13150 IC. The MC13150 is incorporated into Lansdale's exclusive product life cycle management system. This unique quality control system guarantees form, fit, and function meets the original manufacturer's design specifications. This assures a continuous source of high performance ICs to the worldwide electronics market.

The MC13150 is a very low power single conversion narrowband frequency modulated (FM) receiver incorporating a split intermediate frequency (IF). This device can be used as a single conversion or as the backend in analog narrowband FM systems such as 900 MHz cordless phones, and narrowband data links. It contains a mixer, oscillator, extended range received signal strength indicator (RSSI), RSSI buffer, IF amplifier, limiting IF, a unique coilless quadrature detector and a device enabler function. The quadrature detector is similar to a phase lock loop (PLL) with an internal oscillator running at the IF frequency and two detector outputs. One is used to deliver the audio signal and the other one is filtered and used to tune the oscillator.

Excellent high frequency performance is achieved through use of Motorola's MOSAIC 1.5 RF bipolar process. The MC13150 has an onboard Colpitts voltage-controlled oscillator(VCO) that can be crystal controlled or phased lock for second local oscillator (LO) in dual conversion receivers. The mixer is a double balanced configuration with excellent third order intercept and is useful to use beyond 200 MHz. The IF amplifier is split to accommodate two low cost cascaded filters. RSSI output is derived by summing the output of both IF sections. The quadrature detector is a unique design eliminating the conventional tunable quadrature coil.

Packaged in the LQFP 32 pin the MC13150 is designed for battery and portable applications. Applications for the MC13150 include animal tracking receivers, baby monitors, 2-way radio, security devices, remote control, data links and other radio systems utilizing narrowband FM modulation.

The MC13150 is manufactured by Lansdale today using Freescale's original characteristics to meet or exceed requirements for existing or new designs. Using the Lansdale MC13150 eliminates the need to go to the time or expense of designing in a replacement device, or doing a complete redesign and qualification

in existing end products or systems.

Lansdale Semiconductor
www.lansdale.com [1].

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[1] http://www.lansdale.com